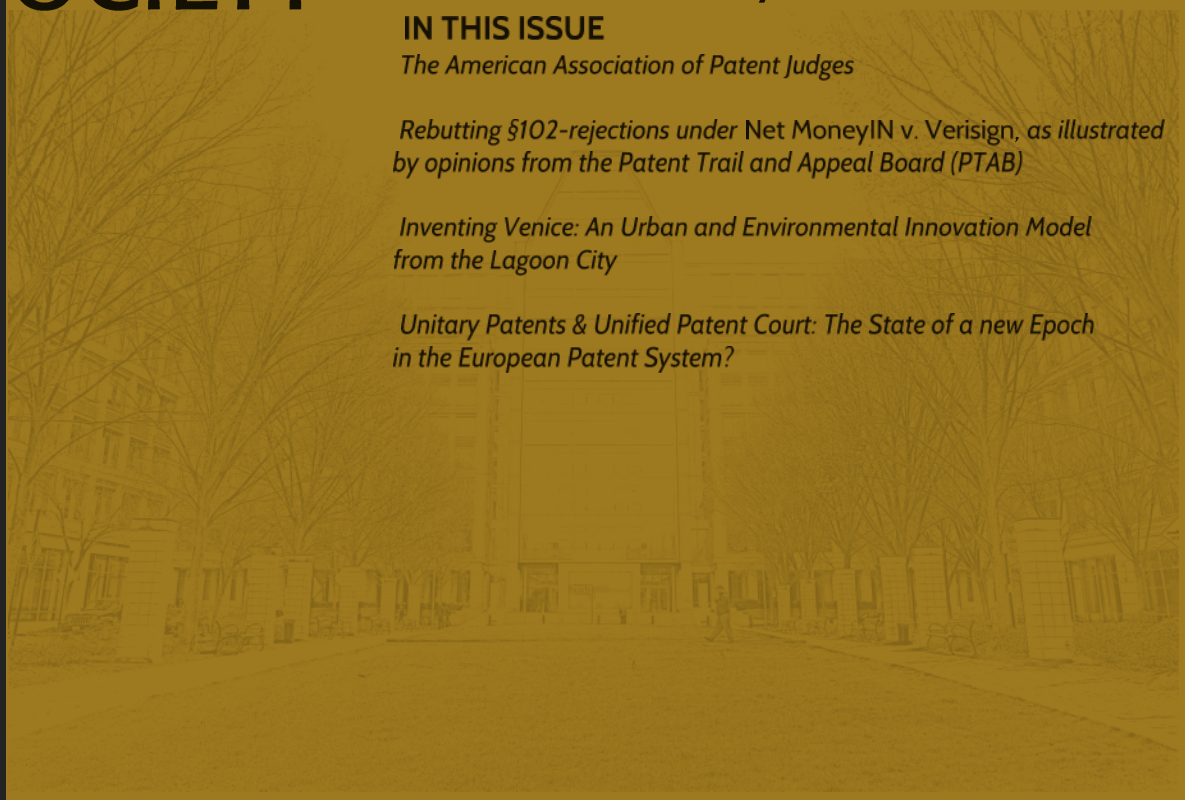
Volume 100, Number 3
Pages 386-570

JOURNAL OF THE PATENT AND TRADEMARK OFFICE SOCIETY

100th Anniversary

IN THIS ISSUE



Celebrating Our First 100 Years of Service to the Intellectual Property Community

Volume 100, No. **3**
Pages **386-570**

1**3 Dec** 2018
$20.00

Journal of the Patent and Trademark Office Society

A medium of expression for the exchange of thought in the fields of patents, trademarks and copyrights; a forum for the presentation and discussion of legal and technical subjects relating to the useful arts; a periodical for the dissemination of knowledge of the functional attribute of the patent, trademark, and copyright laws, in order to effect a more uniform practice thereof and through which all interested in the development and appreciation thereof may work to a common end. Published quarterly by members of the Patent and Trademark Office Society.

web
jptos.org

facebook
facebook.com/JPTOS

linkedIn
linkd.in/1c3GBoR

POSTMASTER-Send address changes to:
The Journal of the Patent and Trademark Office Society
107 S. West St., # 809, Alexandria, VA 22314

Membership Information

Membership Rates per Year:
Associate Membership .....$65 Domestic.....$76 Canada .....$97 Foreign

Corporate Membership*
(five issues for the price of four) .....$260 Domestic.....$304 Canada .....$388 Foreign

Student/Retired Membership** .....$56 Domestic Only

Membership Renewal: Memberships to the PTOS can be renewed by email. Send a renewal request with your Name, Company Name (if applicable), and Membership Number from the top left-hand corner of your mailing label to: exec.dir@jptos.org. You must also include the email at which you wish to receive a PayPal invoice that you may pay online using a credit card. You may also renew by mail.

Address Changes: Address changes should be made by email. Send a request with your new address, phone number, email, and your Membership Number from the top left-hand corner of your mailing label to: exec.dir@jptos.org.

Missing Issue Request: Request for missing issues should be directed to the Executive Director at exec.dir@jptos.org. Please include the Membership Number from the top left-hand corner of your mailing label with your request. Please allow six (6) to eight (8) weeks for processing and delivery of missing issues. Shipping/handling fees may apply.

For all other missing issue requests, the Journal will process missing issue claims that are submitted within two months of publication (e.g., a missing July issue must be claimed by the end of September of that same year). Requests for missing issues not claimed within two months of publication may be filled, subject to availability. Additional fees may apply.
(Shipping and Handling charges are subject to change without notice.)

New Memberships: New memberships will start the following month if the payment is received by the 20th of the current month, unless a later starting date is requested and approved.

All questions and concerns regarding Memberships should be directed to the Executive Director at exec.dir@jptos.org. Please include the Membership Number from the top left-hand corner of your mailing label when making inquiries or claims.

*Corporate Membership requires that all Journals be sent to the same address.
**Student/Retired qualifications: US resident (non-PTO employee) currently enrolled in a full-time program or retired employee of the PTO.
***Renewals, address changes, and missing issue requests may also be made through the mail. Payments should be made payable to the Patent and Trademark Office Society. Please mail payments, address changes, and requests to:
JPTOS, 107 S. West St. #809, Alexandria, VA 22314, Attn: Executive Director

Information for Authors

The Journal welcomes the submission of articles consistent with the Journal's masthead objectives. Articles should be submitted to articles@jptos.org. All manuscripts must be typewritten.

Authors will be contacted upon receipt of their articles and will be further advised as to whether or not their papers are acceptable for publication. Upon publication, authors will be sent two (2) complimentary copies of the issue in which their article appears. Galley proofs will not be forwarded to authors for correction. Proofreading is the responsibility of the Journal.

Student note submissions are considered on separate, more permissive standard. Current full and part-time students are encouraged to submit original works to articles@jptos.org.

Questions and concerns regarding submitted articles should be directed to the Editor-in-Chief at editor@jptos.org or the Executive Director at exec.dir@jptos.org. All articles will be automatically considered for the Rossman Award. See JPTOS, September 2002, Volume 84, No 9, pp. 703-704.

Back Issues and Bound Volumes

Back issues and bound volumes are available for the years 1918-2007 from:

William S. Hein & Co., Inc.
1285 Main Street
Buffalo, New York 14209-1987 (800) 828-7571

Please note: printed single issues are only available for Volumes 71-present and for Volumes 1-70, only volume (full-year) is available.

Orders may also be placed by calling Hein at (800) 828-7571, via fax at (716) 883-8100, or email to order@wshein.com. Back issues may also be found in electronic format on HeinOnline at www.heinonline.org for years 1918-present.Back issues from 2008 to present may be ordered directly from the JPTOS. Contact the Executive Director at: exec.dir@jptos.org. Issues are priced with shipping included. $20/issue domestic, $22/issue Canadian, and $25/issue international. Discounts available for bulk purchases.

Advertising Information

Print Display Ads

1/3 Page (5.25 in. wide x 2.25 in. high).....$300
1/2 Page (5.25 in. wide x 3.25 in. high).....$350
2/3 Page (5.25 in. wide x 4.5 in. high).....$400
1 Full Page (5.25 in. wide x 7.5 in. high) $450
Inside Front Cover $500
Table of Contents $500
Inside Back Cover $500
Outside Back Cover $500
Line Ads.....$25 per line
(Two line minimum)

Website Display Ads

Front Page Ad
Banner Advertisement.....$400
Column Advertisement.....$350
IP Job Openings Page $300
IP Services Page.....$300

Advertisements for IP Job Openings will be posted on the following web sites: www.jptos.org and www.ipjobs.org.

The Journal is a non-profit magazine and has only a limited space for advertising. **Copy and Cancellation** or **Ad Changes** must be received by February 21st for the Spring issue, May 21st for the Summer issue, August 21st for the Autumn issue, and November 21st for the Winter issue or charges may apply.

Checks and money orders should be made payable to the "Patent and Trademark Office Society." In order to cover charges and currency exchange rates, checks and money orders for foreign accounts should be drawn on U.S. Banks and paid in U.S. dollars. **All checks and money orders not drawn on U.S. Banks must include an additional $50 to cover all charges or they will not be processed.**

Payments should be made payable to the Patent and Trademark Office Society, and directed to:

JPTOS, PO Box 2600, Arlington, VA 22202, Attn: Financial Director

If a display advertisement needs to be re-formatted to fit one of the sizes a $100 charge will be billed.

Volume 100, Number 3
Pages 386-570

13 Dec 2018

JOURNAL OF THE PATENT AND TRADEMARK OFFICE SOCIETY

100th Anniversary

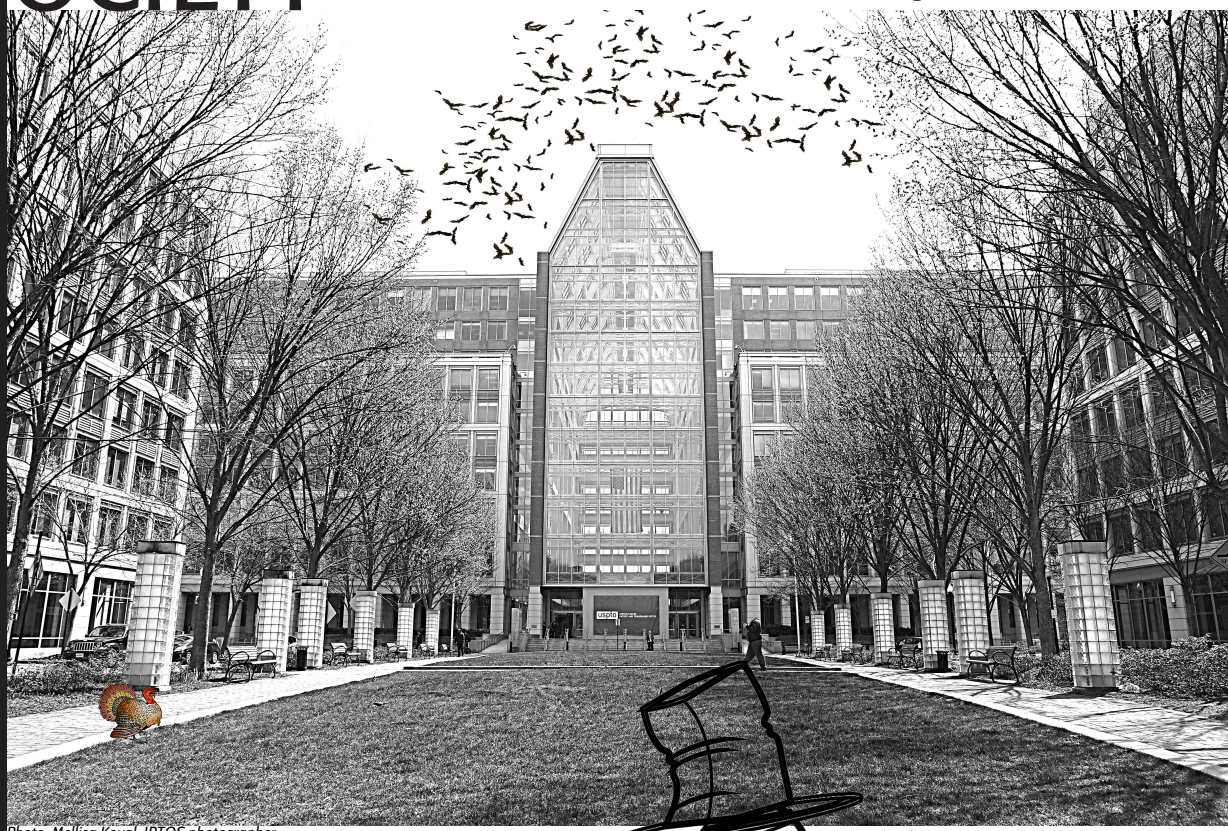
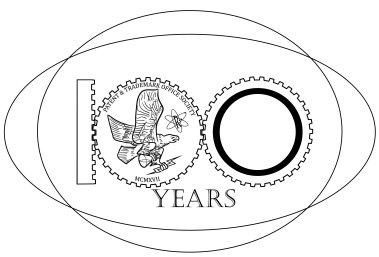


Photo: Mellisa Koval, JPTOS photographer

Celebrating Our First 100 Years of Service to the Intellectual Property Community

Contents



The American Association of Patent Judges

We are pleased to announce the formation of The American Association of Patent Judges (AAPJ).

Since March 2, 1861,[1] when an appeal to three Examiners-In-Chief (EIC) in the Patent Office was first provided for, approximately 489 individuals have served as an EIC, or its descendant, an Administrative Patent Judge (APJ). In the fall of 2015, several members of the Patent Trial and Appeal Board (PTAB) of the United States Patent and Trademark Office envisioned an educational and charitable organization to honor of all those EICs and APJs who have served and who continue to contribute to the stewardship of the patent provision in the Intellectual Property Clause of the United States Constitution. The AAPJ is the culmination of that vision.

The AAPJ was incorporated in the Commonwealth of Virginia on January 8, 2018. A Board of Directors has been elected and various committees established. The AAPJ started business on July 1, 2018.

The AAPJ invites all interested persons to join. There are three main classes of membership:

- Active Members of the Board: for current members of the PTAB, as defined in 35 U.S.C. § 6 (a);
- Non-Active Members of the Board: for former members of the PTAB and its predecessors, such as the Board of Patent Appeals and Interferences (BPAI); and,
- Associate Members: for those associated with the PTAB, such as, but not limited to, current and former Patent Attorneys and Administrative Staff.

The Board of Directors may also grant honorary membership to individuals.

For more information, please visit www.aapj.us or send an email to email@aapj.us.

[1] Public Law 42, 36th Congress, 2nd Session, 12 Stat. 246, chap 88: "In addition to 'An Act to Promote the Progress of the Useful Arts' [1836 Patent Act]"

In keeping with its charitable and educational character, some of the AAPJ's purposes are to be a repository of institutional knowledge and an educator on the history, tradition and culture of the PTAB and its predecessors. Social activities in support of these purposes are being planned. The AAPJ aims to reflect the dedication of all patent judges in the promotion of strong intellectual property rights for the benefit of our Nation's progress.

The AAPJ thanks the Journal of the Patent and Trademark Office Society for the opportunity to make this announcement.

On behalf of the AAPJ's Board of Directors,
With kind regards,

Hubert C. Lorin
AAPJ Membership class:
Active Member of the Board
Communication Committee Chair

Rebutting §102-rejections under *Net MoneyIN v. VeriSign*, as illustrated by opinions from the Patent Trial and Appeal Board (PTAB)

By Tom Brody*

Abstract

Net MoneyIN (Fed. Cir. 2008) is one of the few Federal Circuit cases available that relate to anticipation (35 U.S.C. § 102). Fortunately, opinions from the Patent Trial and Appeal Board (PTAB) provide a family of fact-patterns, where these opinions demonstrate that *Net MoneyIN* can be applied to a variety of situations that are much greater than the facts of the Federal Circuit case. *Net MoneyIN* has been successfully applied in cases before the Board, to compel the Board to reverse in the following situations. These situations include: (1) The prior art reference identifies two or more of the claim elements in two or more distinct locations, e.g., in Example One and Example Two, in Figure 1 and Figure 2, or in Example One and in the background information of the prior art reference; (2) Anticipation rejection based on "picking and choosing" a claim element from a disclosure in the prior art reference, where the disclosure takes the form of a long list of chemicals or other substances; (3) Where the arrangement of parts (structures) in the prior art device is different from the arrangement of corresponding parts that is required by the claim; (4) Where the examiner, in imposing a §102 rejection, had invoked a doctrine that belongs not to the anticipation inquiry, but instead to the obviousness inquiry. This article is a manual that provides the practitioner with tools for rebutting §102-rejections that go far beyond those provided by *Verdegaal Bros. v.*

*The author has prosecuted over 200 patent applications, mainly relating to the life sciences, organic chemistry, and medical devices. The author is a registered patent agent at Baker Hostetler LLP in Costa Mesa, CA. He received a Ph.D. in biochemistry at the University of California at Berkeley and conducted post-doctoral research on a DNA repair gene in 1994-1995, also at U.C. Berkeley. The author can be contacted at dnarepairgene@gmail.com. This article does not constitute legal advice and it does not establish or suggest any relation between the author or the reader.

{Ed. note: The author earned the 2016 Rossman Memorial Award, presented by the *Patent and Trademark Office Society*, in recognition of his exceptional scholarly article entitled, *Rebutting Obviousness Rejections by Disclosing Impermissible Hindsight*, 96 J. Pat. & Trademark Off. Soc'y 427 (2014). The Award was presented on February 10, 2016 at the USPTO in Alexandria, VA.}

Union Oil Co. of California (Fed. Cir. 1987). Regarding the situation where the arrangement of parts are different, it is useful to remember that there exist at least three types of claim elements – structural elements, functional elements, and elements that describe arrangements of structures.

Contents

I. INTRODUCTION

This article provides guidance for rebutting §102-rejections, where the rebuttal argument rests on the rule of *Net MoneyIN, Inc. v. VeriSign, Inc*.[1] To determine the variety of situations, that is, the variety of "facts-of-the-case," where *Net MoneyIn* can be applied, the author reviewed about 200 of the most recent opinions from the Patent Trial and Appeal Board (PTAB) that cite *Net MoneyIN*. Guidance from the Board (PTAB; BPAI) is more extensive than guidance from the Federal Circuit for most issues that arise in patent prosecution. The Federal Circuit adopted the cases from the Court of Customs and Patent Appeals (CCPA) as precedent.[2] Cases from the Federal Circuit establish *stare decisis*, while opinions from the Board can be used to predict what will actually happen to a claim during prosecution.

A. A review of 200 PTAB opinions provided 200-different fact-patterns, and thus enabled the detection within these fact-patterns of several distinct fact-pattern categories that are covered by *Net MoneyIN v. VeriSign*.

In preparing articles on various doctrines of patent law, this author has used the technique of reading most of the relevant PTAB opinions (150 to 500 PTAB opinions) that apply a given rule of law from the Federal Circuit. The author had earlier used this technique to acquire and review PTAB opinions that include the term "impermissible hindsight,"[3] opinions that include the terms, "functional element" or "functional limitation,"[4] opinions that include the terms "*In re Antonie*" or "*In re Boesch*,"[5] opinions that include terms such as "cell-based model" or "animal model,"[6] opinions that include the terms, "negative limitation" or "exclusionary embodiment,"[7] and opinions that include the terms,

[1] Net MoneyIN, Inc. v. VeriSign, Inc., 545 F.3d 1359, 1370 (Fed. Cir. 2008).

[2] Steven Flanders, The Federal Circuit-A Judicial Innovation, Establishing a US Court of Appeals (Twelve Tables Press 2010); *See also,* South Corporation v. The United States, 690 F.2d 1368 (Fed. Cir. 1982).

[3] Tom Brody, *Rebutting Obviousness Rejections by Disclosing Impermissible Hindsight*, 96 J. Pat. & Trademark Off. Soc'y 427 (2014); Tom Brody, *Rebutting Obviousness Rejections by way of Anti-Obviousness Case Law*, 99 J. Pat. & Trademark Off. Soc'y 192 (2017).

[4] Tom Brody, *Functional Elements Can Ensure Allowance of Genus Claims*, 90 J. Pat. & Trademark Off. Soc'y 621 (2008).

[5] Tom Brody, *Claims With ranges, the Result-Effective Variable, and* In re Applied Materials, 98 J. Pat. & Trademark Off. Soc'y 618 (2016).

[6] Tom Brody, *Enabling Clinical-Treatment Patent Method Claims With Culture and Animal Model Data*, 97 J. Pat. & Trademark Off. Soc'y 328 (2015).

[7] Tom Brody, *Negative Claim Limitations In Patent Claims*, 41 AIPLA Q. J. 29 (2013).

"laundry list," "lengthy list," or "long list."[8] For the present article, this same technique was used for acquiring 200 PTAB opinions that include the term, "*Net MoneyIN*."

B. *Net MoneyIN* provides a plurality of rules for rebutting §102-rejections.

In *Net MoneyIN*, the issue was all of the elements of the claim were disclosed by two separate examples in the cited prior art reference. This issue is set forth by the excerpt that reads, "The district court, after finding all five of these links in the . . . reference, albeit in **two separate disclosed examples**, concluded that claim 23 was anticipated."[9]

Later on in *Net MoneyIN*, one encounters a description of another form of disclosure, which concerned mixing ingredients in a special order. The relevant excerpt reads, "The meaning of the expression 'arranged as in the claim' is . . . understood in relation to claims drawn to things such as **ingredients mixed in some claimed order**. In such instances, a reference that discloses all of the claimed ingredients, **but not in the order claimed**, would not anticipate."[10]

Still further along in *Net MoneyIN*, the Federal Circuit reiterated a fact-pattern from *Lindemann Maschinenfabrik GMDH v. American Hoist & Derrick Co.*,[11] writing, "Because the district court had . . . treated the claims as mere catalogs of separate parts, in disregard of the **part-to-part relationships** set forth in the claims . . . we reversed.'"[12]

Finally, in *Net MoneyIN* we encounter the rule of *In re Arkley*,[13] namely, "Thus, it is not enough that the prior art reference . . . includes multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention. *See Arkley*, 455 F.2d at 587 ("The prior art reference must **. . .** disclose the claimed invention **. . .** without any need for **picking, choosing, and combining various disclosures not directly related to each other** by the teachings of the cited reference.")."[14]

The above-disclosed excerpts from *Net MoneyIN*, without more, are somewhat ambiguous. What is ambiguous is the meaning of each of these phrases that are highlighted above in bold, where these same phrases are listed in the following bulletpoints:

- "two separate disclosed examples"
- "not in the order claimed"
- "part-to-part relationships"

[8] Tom Brody, *Categories of Anti-Obviousness Case Law: (1) Laundry Lists; (2) Redundant Advantages; and (3) Advantage Not Needed and Not Relevant*, 17 J. Marshall Rev. Intell. Prop. L. 1 (2018).

[9] *Net MoneyIN*, 545 F.3d at 1369 (**emphasis** added).

[10] *Net MoneyIN*, 545 F.3d at 1370 (**emphasis** added).

[11] 730 F. 2d 1452 (Fed. Cir. 1984).

[12] *Net MoneyIN*, 545 F.3d at 1370 (**emphasis** added).

[13] 455 F.2d 586 (C.C.P.A. 1972).

[14] *Net MoneyIN* at 1371 (**emphasis** added).

- "picking and choosing and combining various disclosures not directly related to each other"

Regarding, "two separate disclosed examples, one of the take-home lessons from this article is that "two separate disclosed examples" can encompass disclosures in a single prior art reference that reside in: (1) Example 1 and Example 2, from the same prior art patent; (2) FIG. 1 and FIG. 2, from the same prior art patent; (3) Example 1 and in the Background Information; (4) Example 1 and a lengthy list of dozens of chemicals; (5) Example 1 and Claim 1 of the same prior art patent, and so on.

In addition, another source of ambiguity regarding breadth, scope, and meaning of a holding from any given Federal Circuit case is as follows. Ambiguity can arise during patent prosecution or during litigation as to whether the holdings from *Net MoneyIN*, *Lindemann Maschinenfabrik v. American Hoist*, and *In re Arkley*, should be applied in a way that narrowly tracks the fact of the case, or in a way that is more broadly applied. The concept that a holding may be more narrowly applied or, in contrast, more broadly applied, is set forth in the cited law review articles.[15]

C. Distinct fact-patterns are provided by PTAB opinions, where a §102-rejection was reversed based on *Net MoneyIN*

This article demonstrates that the Board consistently applies *Net MoneyIN* to several distinct fact-patterns that exist in the cited prior art reference and its relation to the rejected claim. These categories are identified by the following bulletpoints. These relate to different locations in the cited prior art reference, where the sum of the locations constitutes a disclosure of two or more of the elements of the rejected claim:

- The first location in the cited prior art patent or prior art publication is named, "Example 1" and the second location is named "Example 2,"
- The first location is named, "Figure 1," and the second location is named, "Figure 2," where the Board contemplated only these two figures and not any of the text of the prior art reference
- The first location in the cited prior art patent or prior art publication is named "Example 1" and the second location being the "Background Information" section,
- The first location is named, "Example 1," and the second location takes the form of a lengthy list of various chemicals (or other substances),
- The first location contains the phrase, "In an embodiment . . . " and the second location contains the phrase, "In another embodiment . . . ," and

[15] Andrew C. Michaels, *The Holding-Dictum Spectrum*, 70 Ark. L. Rev. 661 (2017); Brief of Amicus Curiae, *the Federal Circuit Bar Association in Support of Respondents in* Laboratory Corp. of America Holdings v. Metabolite Laboratories, 15 Fed. Cir. B. J. 713 (2005); Charles W. Collier, *Precedent and Legal Authority: A Critical History*, 1988 Wis. L. Rev. 771 (1988).

where the embodiments are not distinguished by any numbering. In patents, numbering of embodiments can take the firm, "a first embodiment" and "a second embodiment," however, in patents various embodiments can also be distinguished from each other by the words, "another" and "yet another."

- A variation of the above fact-patterns, and where the §102-rejection is readily reversible under *Net MoneyIN*, is where the Board compares the **relative arrangement of parts of a structure** that is described by the prior art reference (without regard to the location in the text of the prior art reference), and where the comparison is to the **relative arrangements of corresponding parts that is required the claim**. Claim terms that identify arrangements of parts include, "disposed between," "located beneath," "moveably positioned on," "extending upwardly from," " extend through the opening," and "disposed immediately outwardly thereof."

- Yet another fact-pattern where the §102-rejection is reversible under *Net MoneyIN*, is where a methods claim is rejected. Here, the rebuttal strategy is to argue that the ordering of steps in the method disclosed by the prior art reference is different from (is not arranged in the same way as) the ordering of corresponding steps that is required by the claim.

This article is a manual on how to argue that information disclosed in one location of the prior art reference relates to a different embodiment than information disclosed at another location in the same prior art reference. Once the attorney or agent establishes that information in two different locations do not relate to the same embodiment, *Net MoneyIN* can be properly applied, and it can be argued that the grounds for the §102-rejection have been overcome, and that the rejection can properly be reversed.

Also useful, is an awareness of fact-patterns where the Board affirmed an anticipation rejection, in the situation where the Board determined that the facts cannot justify a reversal based on *Net MoneyIN*. *Ex parte Charan*[16] is an exemplary opinion from the Board, showing failure of a rebuttal argument. The argument failed, because information provided by various different locations in the cited prior art reference were disclosed, by the prior art reference, as all being relevant to one, particular embodiment. *Ex parte Charan* is detailed at a later point in this article. *Ex parte Charan*, as well as other PTAB opinions, most notably, *Ex parte Fiandaca*,[17] *Ex parte Mohan*,[18] *Ex parte Webster*,[19] and *Ex parte Zebedee*,[20] should be utilized as a quality control procedure to determine if a draft rebuttal is likely to compel reversal. In other words, these particular PTAB cases can be compared with any draft rebuttal to determine if the rebuttal arguments are weak and ineffective.

[16] *Ex parte* Charan, Appeal No. 2011010319, Ser. No. 11/529,128, December 11, 2012.
[17] *Ex parte* Fiandaca, Appeal No. 2010-006135, Ser. No. 11/607,816, August 16, 2018.
[18] *Ex parte* Mohan, Appeal No. 2014-008922, Ser. No. 12/495,617, June 1, 2016.
[19] *Ex parte* Webster, Appeal No. 2011-013348, Ser. No. 11/900,779, November 30, 2012.
[20] *Ex parte* Zebedee, Appeal No. 2010-006014, Ser. No. 12/077,046, October 8, 2010.

D. Inappropriate use of doctrines from the obviousness inquiry, when the examiner imposes a §102-rejection that is based on picking and choosing information from a prior art reference.

Another take-home lesson provided by this article is that, in imposing a §102-rejection based on one prior art reference, the examiner sometimes utilizes doctrines from the obviousness inquiry as a basis for rejection. For this reason, an attorney or agent wishing to apply *Net MoneyIN* must be aware and knowledgeable of the many doctrines belonging to the obviousness inquiry. In other words, because some of the techniques for imposing §102-rejections resemble techniques for imposing §103-rejections, the attorney or agent needs to be vigilant when the examiner mistakenly relies on obviousness doctrines, when imposing the §102-rejection.

II. PICKING AND CHOOSING FROM INFORMATION DISCLOSED IN DIFFERENT LOCATIONS OF THE PRIOR ART REFERENCE

When a prior art reference is cited in a §102-rejection, it is typical for the examiner to identify the locations of the information in the prior art reference that correspond to one or more claim elements. This provides guidance on how to draft rebuttal arguments that establish that the information in different locations refer to chemicals, compositions, devices, or other substances that cannot be combined as a basis for imposing a rejection under 35 U.S.C. § 102. Rebuttal arguments of this type establish that the information, residing at two or more locations in the prior art reference, are distinct from each other because:

- The locations in the prior art reference are named, Example 1 and Example 2
- The locations in the prior art reference are named, first embodiment and second embodiment
- The locations in the prior art referencethe figures. What this means is the following: are named, “an embodiment” and “another embodiment”
- The locations in the prior art reference are named, Figure 1 and Figure 2
- The device disclosed by Example 1 contains a structure or part that does not exist in Example 2, thus establishing that the two examples are distinct from each other
- The device discloses by Example 1 is incompatible and non-combinable with the device in Example 2, for example, because all of the parts in the Example 1 device are made of iron while all of the parts in the Example 2 device are made of plastic

A. DISTINCT EMBODIMENTS DISCLOSED BY LOCATIONS IN THE REFERENCE WITH DIFFERENT NAMES, SUCH AS, "FIRST EMBODIMENT" AND "SECOND EMBODIMENT"

1. *Ex parte Backes.*

This opinion is exemplary, in that the Board reversed the rejection solely because the information that the examiner combined to arrive at the rejection was derived from locations having different names. In other words, the Board did not go a step further to explain why the disclosures in the first and second locations were to two, separate devices, but only asserted that the first and second locations had different names.

Ex parte Backes[21] concerned a screen that is illuminated on its rear side by a projector. The device includes a pointer on the screen that facilitates a touch screen function. The screen can receive light projected by light diodes of various colors. Claim 26 was rejected as anticipated by WO2008/073289 of Deuel.

a. The §102-rejection was improper because it was based on "multiple, distinct teachings." The Board referred to the basis of the rejection, writing that, "the examiner cites multiple, distinct teachings of WO2008/073289 **. . .** for mapping the disputed claim limitations. The examiner cites para. 0030 and Figure 1, which are described under the section, "Detailed Description of Exemplary Embodiments." Paragraph 0030 is reproduced below. As can be seen, para. 0033 from the Deuel reference refers to Figure 1:

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

[0030] Referring to Fig. 1, a display system 10 includes a display 20 configured to provide a user with information. The display includes control regions 21 which represent areas of the display 20 that a user can actuate to control various functions of display 20 and/or non-display systems 28. Display 20 may display the information relating to the function controlled by control region 21 or control region 21 be "invisible" to a user such that the control regions 21 exist but a user would not be able to differentiate the area of the display 20 corresponding to the control regions 21. Further, some control regions 21 may be visible while others are not visible. Further still, a displayed image that appears to be a single control may include multiple control regions 21.

The Board continued, "The examiner also cites para. 0044 and Figures 3 and 4, which are described under the subsection, Embodiment Using a Projector-Based Display and Frequency Differentiation." Para. 0044 from the Deuel reference is reproduced below. As can be seen, this paragraph refers to Figures 3 and 4:

[21] *Ex parte* Backes, Appeal No. 2016-003673, Ser. No. 13/471,449, February 2, 2017.

Embodiment Using a Projector-Based Display and Frequency Differentiation

[0044] Referring to Figs. 3 and 4, light is provided (e.g. projected) from an image source 104 (e.g. projector) of display 20 onto a display surface 102 (e.g. screen) of display 20. When image source 104 provides light to non-control regions 106,108, image source 104 may be configured to modulate its light source (not shown) at a first frequency (e.g. 180 Hz), and modulate light at a second frequency (e.g. 5000 Hz) when providing light to control region 21. In some embodiments, the second frequency will be at least 10 times that of the first frequency.

Also, the Board further complained that, "The examiner further cites Figure 9 and para. 0106 **. . .** which are described under the subsection, Correction for Ambient Lighting." The relevant excerpt from the Deuel reference appears below:

Correction for Ambient Lighting

[0104] Referring to Figs. 8 and 9, an arrangement for measuring reflected light may have a wide dynamic range and/or be insensitive to ambient light.

. . . . . .

[0106] Referring to Fig. 8, a diagram shows how the light signal received from the screen can be corrected by a light-emitting diode to form a "**0**" signal. Section **A** corresponds to a brightness signal with high luminous density, and section **B** to a signal of moderate luminous density. Section **C** corresponds to a moderate luminous intensity signal but at a much higher clock rate. Sections **A, B, C** do not have to be generated sequentially; it would also be possible to generate them in parallel.

b. Nature of the different names of the prior art's various embodiments. As disclosed by the opinion, the rejection was based on combining information from locations having the following names. Actually, each location had three different names, where the respective names identified the: (1) Paragraph number; (2) Figure number; and (3) Title of section in the prior art reference:

- Para. 0030 and FIG. 1, in the section called, "Detailed Description of Exemplary Embodiments"
- Para. 0044 and FIGS. 3 and 4, in the subsection, "Embodiment Using a Projection-Based Display and Frequency Differentiation"
- Para. 00106 and FIG. 9, in the subsection, "Correction for Ambient Lighting"

c. The §102-rejection was improper because prior art reference does not disclose that the various embodiments, "communicate with one another.

Rather . . . as separate and distinct arrangements." In the Appeal Brief,[22] inventor argued that, "The examiner's rejection of Claim 26 improperly piecemeals [the Deuel reference] . . . to reject the claim . . . the examiner cites to portions . . . that discuss . . . the display in general . . . the arrangement for determining if an object is located in the control regions . . . ."

In addition to arguing that the §102-rejection was based on piecing together different locations in the Deuel reference, the inventor wisely argued that the Deuel reference fails to state that the different embodiments of Deuel are related to each other. On this point, the inventor observed that the Deuel reference does not disclose that the various embodiments, "communicate with one another. Rather, [Deuel] . . . presents the arrangements . . . as separate and distinct arrangements."

d. Referring to PTAB opinions as part of the rebuttal argument. *Ex parte Backes* is further distinguished, in that the inventor's argument referred to an earlier PTAB case, *Ex parte Cucerzan*.[23] The inventor had referred to *Ex parte Cucerzan*, because the issue in that opinion was that the examiner had based the §102-rejection on picking, choosing, and combining from distinct embodiments in the prior art reference, and because the Board reversed. The *Ex parte Cucerzan* opinion reversed, writing:

> [T]he respective portions of Shazeer's columns 2, 3, and 10 that are relied on by the Examiner refer to different disclosed embodiments, as **. . .** indicated by the first sentence of each paragraph in Shazeer's columns 2 and 3, and the first sentence of each of the first two paragraphs of column 10, that is, "According to **another general example embodiment** of the present invention **. . . .**" (col. 2, ll. 22-23), "**In another example embodiment** of the present invention **. . . .**" (col. 3, l. 1), "According to a **further example embodiment** of the present invention **. . . .**" (col. 10, ll. 1-2). (emphasis added)

e. Reversal. The Board reversed, citing only *Net MoneyIN* and *In re Arkley* as the case law supporting the reversal. The take-home lesson is that, a successful rebuttal argument based on the rule of *Net MoneyIN*, may be based solely on establishing that the locations in the prior art reference had different names. However, this author recommends, in addition to establishing that the different locations had different names, that the attorney or agent establish that the various embodiments do not, "communicate with one another" and that the various embodiments are, "separate and distinct arrangements," as was argued in the abovecited Appeal Brief.[24]

[22] Appeal Brief, Ser. No. 13/471,499, September 2, 2015.
[23] *Ex parte* Cucerzan, Appeal No. 2009008190, Ser. No. 11/094,078, April 29, 2011.
[24] Appeal Brief, Ser. No. 13/471,499, September 2, 2015.

2. *Ex parte Blattler*.

Ex parte Blattler[25] concerned a fuse element created on a circuit board by using photolithography. The invention overcomes a problem with fuse elements that were already in use at the time of the invention. The Specification of the inventor's patent application described the problem as, "One . . . problem . . . of fuse elements in the case of the metals . . . that are laminated onto the printed circuit board substrate, is that the actual printed circuit board material . . . substrate comprises . . . epoxy resin-reinforced, woven glass fabric, has a **different temperature expansion coefficient** from the material of the conductors, such as copper."[26]

a. The claim. The claim was to a fuse element that included a circuit board (the substrate) that was coated with metal, and where the metal coating defined the fuse. The claim read:

> Claim 1. A fuse element . . . constructed by multilayer technology, comprising a printed circuit board substrate material, coated with a metal . . . defining a fuse and being formed by photolithographic . . . and . . . etching or engraving processes, wherein the printed circuit board substrate material, on which the fuse is provided, comprises at least a high-temperature-stable, electrically insulating material."

The claim was rejected as anticipated by U.S. Pat. No. 7,385,475 of Bender.

b. The examiner's strategy for alleging that the prior art reference disclosed all the elements of the claim. The examiner's basis of rejection was dispersed over the Final Rejection of October 9, 2013 and the Examiner's Answer of October 6, 2015. In the Final Rejection, the examiner referred to Bender's FIG. 21 for its disclosure the elements in the claim. The examiner wrote, "Regarding Claim 1, Bender disclosed (FIG. 21) a fuse element . . . constructed by multilayer technology comprising a printed circuit board . . . coated with a metal . . . defining a fuse."

Here, the examiner referred to FIG. 21 for its disclosure of all of the claim elements. But at this point during the time-course of the prosecution of the patent application, the examiner mistakenly thought that FIG. 21 disclosed the claim element requiring "substrate material, coated with a metal. The examiner corrected himself later on, as shown below.

Later on, in the Examiner's Answer dated October 6, 2015, the examiner more accurately understood that the claim required that the metal coating must be firmly and permanently attached to the substrate. Thus, in the Examiner's Answer, the examiner referred to Bender's Col. 4 (line 44 and subsequent lines), for its disclosure of a metal fuse attached firmly and permanently to the substrate, writing, "Further, Bender teaches that foil fuse element may be elec-

[25] *Ex parte* Blattler, Appeal No. 2016-002086, Ser. No. 13/161,544, September 22, 2017.
[26] Specification of Ser. No. 13/161,544, as filed on June 16, 2011.

trodeposited on the . . . insulating layer . . . thus clearly rendering . . . a 'printed circuit board substrate material' (Col. 44, line 44 and subsequent lines)."

c. It is self-evident that that two different locations, cited by the examiner, refer to two different embodiments. The status of the two different locations in the Bender reference are now shown, that is, whether they describe embodiments that are separate and distinct, or whether they can reasonably be construed as describing features of the same embodiment. First, Bender's Col 4 (line 44 and subsequent lines) is shown below, because it occurs at an earlier location in Bender. Then, Bender's Col. 22 (lines 3067), which describes FIG. 21 is shown, because it occurs at a later point in Bender. See below:

Bender's Col. 4 (lines 44 46) was cited by the examiner for its disclosure of the claim element, "coated metal," by way of the writing, "foil fuse element layer . . . electrodeposited."

Foil fuse element layer **20**, in one embodiment, is an electro deposited, 3-5 micron thick copper foil applied to lower intermediate layer **24** according to known techniques.

Bender's FIG. 21 and the description of FIG. 21 (Col. 22, lines 31-63), discloses structures corresponding to most of the elements in the claim, but does not disclose the claim element, "coated metal."

be incorporated into a layer in the final fuse product.

FIG. **21** is an exploded view of another exemplary embodiment of a fuse **300**. In an exemplary embodiment, the fuse **300** is similar in some aspects to the fuse **120** (shown and described in relation to FIG. **12**), and hence like components of the fuse **120** are illustrated with like reference characters in FIG. **21**.

Like the fuse **120** described above, the fuse **300** provides a low resistance fuse of a layered construction that is illustrated in FIG. **21**. Specifically, in an exemplary embodiment, the fuse **300** is constructed essentially from five layers including a foil fuse element layer **302** sandwiched between upper and lower intermediate insulating layers **303**, **304** which, in turn, are sandwiched between upper and lower outer insulation layers **122**, **124**.

Unlike the foregoing fuse embodiments having an electro deposited fuse element layer which is then shaped on one of the intermediate insulating layers according to an etching or other process wherein the electrodeposited layer is subtracted from the insulating layer, the fuse element layer **302** is an electroformed, 3-20 micron thick copper foil which is fabricated and formed independently from the upper and lower intermediate insulating layers **303** and **304**. Specifically, in an illustrative embodiment, the fuse element layer is fabricated according to a known additive process, such as electro-forming process wherein the desired shape of the fuse element layer is plated up, and a negative image is cast on a photo-resist coated substrate. A thin layer of metal (e.g. copper) is subsequently plated onto the negative image cast, and the plated layer is then peeled from the cast to be a free standing foil extending between the upper and lower intermediate insulating layers **303** and **304**.

Separate and independent formation of the fuse element layer **302** allows for a number of advantages, such as greater

d. The embodiment in Bender's Column 2 expressly states that it is not the same as the embodiment in Bender's Column 4. The disclosure at Bender's Col. 4 (lines 44-46) identifies it as being an embodiment, by the writing, "in one embodiment." The disclosure at Col. 22 (lines 31-63) identifies it as being distinct from the Col. 4 (lines 44-46) embodiment, by the writing, "another exemplary embodiment." Moreover, in addition to identifying itself as being a separate embodiment, the disclosure at Col. 22 (lines 31-63) expressly states why it is an embodiment that is distinct from other embodiments. This statement of distinction is, "**Unlike the foregoing**, fuse embodiments having an electrodeposited fuse element . . . ." (emphasis added)

The Board reversed, citing *Net MoneyIN* and *In re Arkley*, writing, "Bender does not anticipate independent Claims 1 and 28 because . . . the Examiner has not established that Bender discloses, in a single embodiment (Fig. 21), the contested claimed "coated" feature: "a printed circuit board substrate material, coated with a metal or metal alloy defining a fuse."

Ex parte Blattler provides these take-home lessons for drafting a rebuttal that makes use of the rule of *Net MoneyIN*:

- Argue that at least two of the claim elements are disclosed in two different locations in the cited prior art reference;
- Argue that information in the first location is identified, for example, as "Example One" and that the information in the second location is identified, for example, as "Example Two" or perhaps as, "Another exemplary embodiment";
- Argue that the writing in one of the locations expressly states that it describes an example that is "unlike the foregoing" or that is "advantageous over" the example that is described in the other location.

3. *Ex parte Matsubara.*

Ex parte Matsubara[27] concerned a lubricating grease containing a rust inhibitor, for use in roller bearings, alternators, and clutches in automobiles. The claim contained three different Markush[28] groups, as shown below:

- The group of three types of "base oil"
- The group of two types of "thickener"
- The group of six types of "metal salt"

The claim read:

> Claim 1. A grease composition comprising a base oil, a thickener and
> a rust inhibitor,

[27] *Ex parte* Matsubara, Appeal No. 2015-003705, Ser. No. 13/807,604, October 13, 2016.

[28] Manual of Patent Examining Procedure (MPEP) § 2117 Markush Claims. 9th ed., Revision of January 2018.

> wherein the rust inhibitor comprises an organic sulfonate and a fatty acid amine salt,
>
> wherein the base oil is selected from the group consisting of ester type synthetic oils, synthetic hydrocarbon oil, ether type synthetic oil and combinations thereof,
>
> wherein the thickener is an urea compound or lithium soap, and
>
> wherein the organic sulfonate is in the form of a metal salt selected from the group consisting of calcium salts, magnesium salts, sodium salts, potassium salts, lithium salts and zinc salts.

The claim was rejected as anticipated by US2009/0003742 of Nakatani. The Board referred to the Final Rejection,[29] as setting forth the basis of the rejection. The rejection stated that the following claim elements were disclosed at the indicated locations in the Nakatani reference:

- "Fatty acid amine salt" (component of the rust inhibitor) disclosed in Nakatani's Example E1
- "Base oil disclosed in Nakatani's para. 0096
- "Thickener" disclosed in Nakatani's para. 0033 and in Example E1
- "Metal salt" (component of rust inhibitor) disclosed in Nakatani's para. 0160 and in Example E1

Turning to Nakatani's para. 0096, one can see that is in a location called, "FIRST EMBODIMENT Grease Composition Example A." Turning to Nakatani's Example E1, one can see that it is in a location called, "FIFTH EMBODIMENT Grease composition Example E."

The Board reversed, writing that, "the examiner . . . erred in combining parts of the separate embodiments of Nakatani in finding claims . . . anticipated," citing *Net MoneyIN* and *In re Arkley*.

4. *Ex parte Muro-Galindo.*

Ex parte Muro-Galindo[30] concerned a DNA dendrimer. The footnote provides scientific background on what is a "DNA dendrimer" and on the fact that a "DNA dendrimer" has four arms.[31] DNA dendrimers can be used to deliver CpG sequences to stimulate immune responses against cancer.[32] CpG

[29] Final Rejection, Ser. No. 13/807,604, February 14, 2017 (5 pages).

[30] *Ex parte* Muro-Galindo, Appeal No. 2014-009890, U.S. Ser. No. 12/600,947, January 3, 2017.

[31] A DNA dendrimer is constructed from DNA monomers, each of which is made from two DNA strands that share a region of sequence complementarity located in the central portion of each strand, but have four non-complementary single-stranded "arms" for hybridization to the "arms" of other monomers. Monomers are assembled into dendrimers beginning with a single monomer which is hybridized to additional monomers via the complementary arms. DNA dendrimers may also be covalently or non-covalently bound to a variety of different types of molecules via linkage to the un-hybridized arms present on the outer laye (see, U.S. Patent Publication No. 2017/0312299 of Getts).

[32] Qu Y et al., *Self-Assembled DNA Dendrimer Nanoparticle for Efficient Delivery of Immunostimulatory CpG Motifs*, 9 ACS Appl. Mater. Interfaces 20324 (Jun. 21, 2017).

sequences have been established as being useful for stimulating immune responses against cancer and infections.[33] In addition, DNA dendrimers containing a drug (siRNA) can be used to deliver the drug to tumors, where the tumor expresses folic acid receptor. The DNA dendrimer has folic acid molecules attached to it.[34] Delivery of the DNA dendrimer and its contents to the tumor is caused because the folic acid (attached to the DNA dendrimer) binds to the folic acid receptor on the tumor. Also, a DNA dendrimer can take the form of a "DNA hydrogel" for use in gene therapy, for example, for treating cancer.[35]

The claim was to a DNA dendrimer that contained a "cargo" (the cargo can be a drug) and a "targeting moiety" (this can be a molecule attached to the outside of the DNA dendrimer, such as a molecule of folic acid). The claim included these elements:

- "a DNA dendrimer"
- "a cargo which is a biologically active agent"
- "a targeting moiety which is a polypeptide"
- The claim also included a functional element, "wherein said composition provides cytosolic delivery of the cargo without the need for other means to permeate . . . the cell membrane"

The term "biologically active agent" can encompasses drugs. The term "polypeptide" encompasses antibodies. Antibodies can be used as targeting agents, because antibodies can be designed that only bind to melanoma cells, breast cancer cells, hepatitis C virus proteins, and so on.

The claim was rejected as anticipated by US2005/0089890 of Cubicciotti. The Board reiterated the examiner's basis of rejection, which was that, "Cubicciotti teaches DNA dendrimers (see, para. 0265, or Example 7) that can be targeted using antibodies . . . directed to at least selectins . . . (see, para. 0454) to deliver drugs . . . (disclosed throughout the Cubicciotti reference)." So far, it might seem that the Cubicciotti reference anticipates the claim, that is, until one conducts an analysis under *Net MoneyIN*. As shown below, the rule of *Net MoneyIN* prevents anticipation.

The Board's analysis focused on two locations in the Cubiciotti reference, Example 7 (paras. 07200722) and Example 24 (paras. 08530867). Regarding these examples, the Board held that, "Contrary to the court's directive in *Net MoneyIN*, the examiner's analysis of Cubicciotti consistently requires the **selective combination of distinctly disclosed elements from disparate embodiments** described in the reference. See *Net MoneyIN*." (emphasis added)

Details on the examiner's behavior in "picking and choosing" are provided by the inventor's Appeal Brief.[36] The inventor had argued that, "Cu-

[33] Mutwiri GK et al., *Strategies for Enhancing the Immunostimulatory Effects of CpG Oligodeoxynucleotides*, 97 J. Control Release 1 (May 31, 2004).

[34] Huang et al., *Delivery of Therapeutics Targeting the mRNA-Binding Protein HuR Using 3DNA Nanocarriers Suppresses Ovarian Tumor Growth*, 76 Cancer Res. 1549 (Mar. 15, 2016).

[35] Zhang H et al., *A Controllable Aptamer-Based Self-Assembled DNA Dendrimer for High Affinity Targeting, Bioimaging and Drug Delivery*, 5 Sci. Rep. 10099 (May 11, 2015).

[36] Brief on Appeal, Ser. No. 12/600,947, April 7, 2014.

bicciotti's . . . Example 7 . . . [is] not compositions for use in **drug delivery . . .** [r]ather Example 7 discuss DNA dendrimers in the context of **diagnostic reagents**. Cibicciotti's diagnostic composition includes no active cargo component." In other words, what was disparate about the two embodiments, was that one embodiment was for use as a medicine and was used for drug delivery, while the other embodiment was only for use in diagnosis (and not for use as a medicine).

Regarding Example 24 (para. 0856 in Example 24), the inventor reiterated the examiner's argument that, "paragraph 0856 teaches . . . antibodies . . . which are akin to the polypeptide targeting moiety recited in . . . [the] claims." The inventor concluded that, in the Cubicciotti reference, "it is clear that nowhere is Applicants' invention disclosed "as arranged in the claim . . . [t]hus, Cubicciotti does not anticipate the pending claims." The Board agreed with the inventor's argument and reversed, citing *Net MoneyIN* and *In re Arkley* as the only case law for reversing.

5. *Ex parte Przybyszewski.*

This opinion discloses the fact-pattern where information from two different locations in the prior art reference are not compatible with each other. *Ex parte Przybyszewski*[37] concerned an implantable medical device for treating pain. The device delivers mild electrical impulses to nerves and reduces pain. The claim required:

- "an implantable medical device having a stimulator output"
- "an impedance adjusting circuit comprising a . . . **resistor** . . . coupled to the stimulator output"
- "a conductive lead having a . . . end coupled . . . to said . . . resistor"
- "the **impedance adjusting circuit** having an **impedance** that causes the impedance looking into said stimulator output point to be . . . matched to the characteristic **impedance** of said lead so that a voltage present across the matching resistor is at a maximum" (emphasis added)

The claim was rejected as anticipated by U.S. Pat. No. 6,949,929 of Gray. The inventor argued that the rejection was based on combining disclosures from two different locations of the Gray reference, Column 15 and Column 21. Column 15 was cited for its disclosure of "a resistor within an embodiment of a lead of a pacemaker," while Column 21 was cited for its disclosure of, "the balun (600) of the embodiment of a guide wire or catheter of a probe." The Column 21 disclosure constituted a disclosure of "impedance matching," as required by the claim. Please note that a "balun" is an electronic gadget with a capacitor that is used in medical devices (see, Schmidt et al (2016) Circulation Cardiovascular Imaging. 9:e005091).

[37] *Ex parte* Przybyszewski, Appeal No. 2012-003856, Ser. No. 11/071,136, September 8, 2014.

The inventor argued that the Lange reference never connects the resistor of Column 15 with the "impedance matching" of Column 21. The Board agreed with the inventor, and explained that the disclosures in Columns 15 and 21 were not compatible with each other. On this point, the Board explained, "Gray discloses . . . that the balun (600) [of Column 21] is . . . outside the body . . . [but] the implantable pacemaker disclosed in Gray's Column 15 [is inside the body]." To reiterate, one embodiment was for a medical device used outside of the human body, while the other embodiment was for a medical device that needed to be implanted inside of the human body.

The Board reversed, and held that combining the disclosures from Columns 15 and 21 "would require a degree of picking and choosing," citing *Net MoneyIN* and *In re Arkley* as the only case law for reversal.

6. *Ex parte Sahlin.*

Ex parte Sahlin[38] concerned a method for transmitting radio signals. The claim required the steps of:'

- "establishing transmit timings for radio transmission between . . . user equipment and . . . radio antennas"
- "scheduling . . . radio transmission based on . . . established transmit timings"

The claim was rejected as anticipated by U.S. Pat. No. 7,522,552 of Fein. The Board observed that, in imposing the rejection, the examiner, "cites Figures 36, which are described as separate embodiments in column 38, line 54, to column 39, line 3, and also relies on [the] . . . embodiment shown in Figures 810 and described in column 39, lines 1219, and column 48, line 14 to column 52, line 64."

A view of the Fein reference reveals that Col. 38 (line 54) to Col. 39 (line 3), refers to various different embodiments, in its recitation that, "a timing diagraph of data transfer in a wireless communication system . . . according to a first embodiment . . . according to a modified first embodiment . . . according to a second embodiment . . . according to a third embodiment . . . according to a fourth embodiment."

In observing that the examiner had relied on various parts of the Fein reference that were labeled as being distinct embodiments, the Board reversed, and stated, "We note that the examiner's anticipation rejection . . . improperly combines multiple embodiments from Fein." The Board cited *Net MoneyIN* and *In re Arkley*, as the only case law in support of the reversal.

B. DISTINCT EMBODIMENTS DISCLOSED BY DIFFERENT FIGURES

An argument centered around figures can be a useful tool to increase persuasiveness of the rebuttal argument. This illustrates the useful technique of re-

[38] *Ex parte* Sahlin, Appeal No. 2015-001760, Ser. No. 12/936,301, September 12, 2016.

ferring to and reproducing figures in the cited prior art reference.

Shown below is the rebuttal strategy that a rejection based on combining two embodiments can be overcome, where the examiner's combination of two different source of information involves combining two incompatible embodiments. In *Ex parte Davis*,[39] incompatibility resulted because the combination was required to take the form of a "catheter tip" that was made of only one kind of plastic and, at the same time, was made of two different kinds of plastic.

Another rebuttal strategy based on incompatibility is shown elsewhere in this article, in *Ex parte Nazarenko*.[40] In this opinion, the rebuttal strategy was based on the fact that it was incompatible for a test tube to contain 10 picograms/mL of human papillomavirus DNA and, at the same time, to contain 4 nanograms/mL of human papillomavirus DNA.

1. *Ex parte Davis*.

Ex parte Davis[41] concerned a catheter that had a shaft, a tip, a guidewire, and a lumen. The claim required a "catheter tip" and that the catheter tip includes a "guidewire lumen." The claim also required that the "catheter tip" have two different sections, where the first section has a different hardness than the second section. In other words, the claim requires that the "catheter tip" possess both of these features:

- The catheter tip must include a "guidewire lumen"
- The catheter tip must have a first plastic section and a second plastic section, where the second section must be made of a plastic that is harder ("durometer greater") than the plastic of the first section

The claim read:

> Claim 1. A catheter comprising:
> a catheter shaft and a **catheter tip**, the catheter shaft comprising a polyether block amide material and the catheter tip comprising a polyether block amide material,
> **the catheter tip comprising a first longitudinal section and a second longitudinal section, the first longitudinal section formed of *polyether block amide having a first durometer* and the second longitudinal section formed of a *polyether block amide having a second durometer greater than the first durometer* . . .** wherein the **catheter tip** includes **a guidewire lumen** extending through the tapered portion of the first longitudinal section and the tapered portion of the second longitudinal section, and wherein the guidewire lumen extends to a distalmost extent of the catheter tip. (emphasis added)

[39] *Ex parte* Davis, Appeal No. 2017-003127, Ser. No. 13/536,477, March 20, 2018.
[40] *Ex parte* Nazarenko, Appeal No. 2014-008020, Ser. No. 13/016,004, August 31, 2016.
[41] *Ex parte* Davis, Appeal No. 2017-003127, Ser. No. 13/536,477, March 20, 2018.

a. Rejection was based on combining the embodiment of FIGS. 5A, 5B, and 6A6D with the embodiment of FIGS. 7A and 7B. The claim was rejected as anticipated by US2007/0219466 of Tremulis. The examiner observed that FIGS. 5A, 5B, and 6A6D, and the associated paras. 0038 and 0039, of the Tremulis reference disclosed the claim element requiring, "a catheter shaft and a catheter tip" consisting of materials of various durometers. The term "durometer" is a unit of hardness that refers to the hardness of plastics used for making catheters, introducers, obturators, and other medical devices. Also, the examiner observed that to FIG.7A, and the associated paras. 0041 and 0042, disclosed the claim element, "guidewire lumen." FIGS. 7A and 7B from the Tremulis reference are reproduced below.

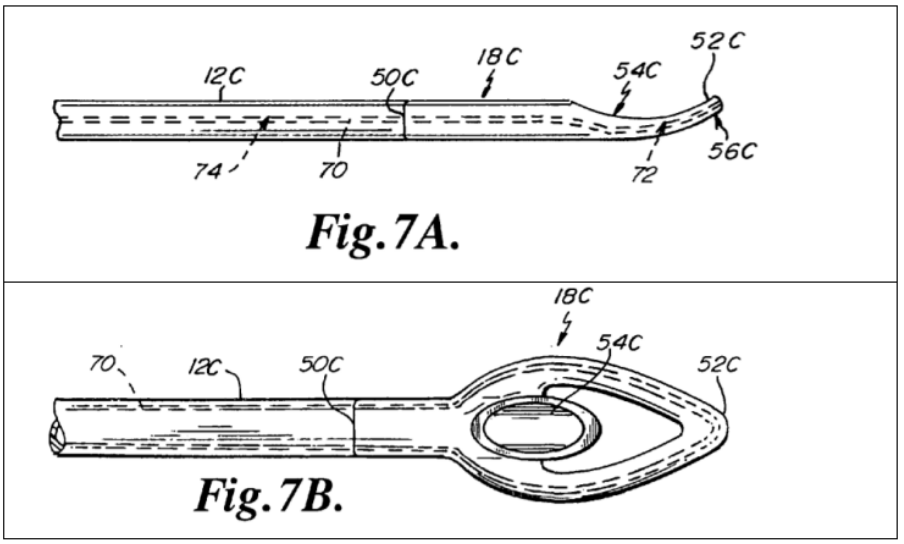


Fig. 7A.

Fig. 7B.

b. The embodiment of FIGS. 5A, 5B, and 6A6D is different from the embodiment of FIGS. 7A and 7B. The Board observed that, "the examiner inaptly combined elements of various structurally distinct embodiments of Tremulis." Regarding these distinct embodiments, the Board observed that the embodiments where the catheter shaft and catheter tip had different hardness grades were not the same embodiments as the embodiment having a "guidewire lumen."

c. The embodiment of FIGS. 7A and 7B is disclosed by the prior art reference as being made of only one type of plastic (without any mention of different types of plastic having different hardness grades). In the Appeal Brief,[42] the inventor referred to FIGS. 7A and 7B and argued:

> Attention is directed to the absence of any indication within either FIG. 7A or FIG 7B of a change in composition of the distal tip (18C) which extends from proximal end (50C) to distal

[42] Appeal Brief, Appeal No. 2017-003127, Ser. No. 13/536,477, March 20, 2018.

> end (52C) . . . [m]ore pertinently, the cited FIGS. 7A and 7B of Tremulis and the description thereof, does not disclose the recited three durometer hardness . . . sections, as recited in . . . Claim 1 . . . [i]nstead, Tremulis discloses with regard to the embodiment of FIGS. 7A and 7B no more than, "'Furthermore, internal wire support may be encased in various materials. However, a plastic resin material such as a PEBAX material is preferred.'

The inventor's rebuttal argument emphasized the point that the Tremulis reference's disclosure of FIGS. 7A and 7B was silent as to more than one hardness, as was required by the claim. In order to emphasize this silence, the inventor pointed out what was actually disclosed by the Tremulis reference, in FIGS. 7A and 7B, was that a "plastic resin material" can be used, but there is not any disclosure that a plurality of materials can be used for the manufacture of any one, particular medical device.

In the Tremulis reference, FIGS. 7A and 7b are described by paras. 0041 and 0042. Paras. 0041 and 0042 are reproduced in the footnote.[43] In the footnoted excerpt, the recitation of "encased in various materials" refers to the material that defines the "guidewire lumen.

d. The prior art reference had different names for each embodiment. The Board observed that the two locations of the Tremulis reference, which were scrutinized in the Board's analysis, had different names. For example, the opinion stated that, " Figure 7A of Tremulis relates to an "**alternative embodiment** of an atraumatic tip in accordance with the present invention."

A view of the Tremulis reference reveals the fact of these different names. Para. 0014 discloses that, "FIG. 5A is a cross-sectional view of a **second alternative embodiment** of an atraumatic tip in accordance with the present invention having a curved leading edge." Paras. 0018 and 0019 disclose that, "FIG. 7A is a side view of a **third alternative embodiment** of an atraumatic tip in accordance with the present invention having an internal wire support . . . FIG. 7B is a top view of the atraumatic tip illustrated in FIG. 7A."

Thus, as part of its basis for reversal, the Board pointed out that the information in the two different locations differed in terms of the name for the em-

[43]Paragraphs 0041 and 0042 from Tremulis 2007/0219466, which describe "guidewire lumen." reads as follows. The recitation of "encased in various materials" refers to the material defining the "guidewire lumen. The Termulis disclosure was:

"[0041] FIGS. 7A and 7B illustrate side and top views, respectively, of atraumatic tip 18C, which is a third alternative embodiment of an atraumatic tip in accordance with the present invention. In particular, and as shown in FIG. 7A, atraumatic tip 18C has a shovel nose type design with internal wire support 70 extending longitudinally along opposing sides of the tip and into elongated shaft 12C, which may be formed integral with atraumatic tip 18C. Internal wire support 70 includes curved distal section 72 and generally straight proximal section 74, and is designed to allow atraumatic tip 18C to bend or flex as is contacts, for example, an inner wall of a body lumen, while preventing the tip or the distal portion of elongated shaft 12C from bending so much that slanted facial opening 54C becomes substantially blocked.

[0042] As illustrated in the top view shown in FIG. 7B, internal wire support 70 is looped around distal end 52C of atraumatic tip 18C to reinforce the tip region. Furthermore, internal wire support 70 is shown completely encased within the tip, although one skilled in the art would appreciate that a portion of Internal wire support 70 may be exposed in other embodiments. Internal wire support 70 may be formed from numerous materials such as a shape memory alloy like Nitinol. Furthermore, internal wire support 70 may be **encased in various materials**. However, a plastic resin material such as a PEBAX material is preferred."

bodiment, and also differed in that the first embodiment (FIGS. 5A, 5B, 6A6D) was disclosed as being made of two different types of plastic while, in contrast, the second embodiment (FIGS. 7A and 7B) was disclosed as being made of only one kind of plastic.

e. Reversal. The Board reversed, writing that, "the Examiner has not adequately explained how the different embodiments are directly related to each other by the teachings of Tremulis so as to support an anticipation rejection."

2. *Ex parte Hurwitz*.

Ex parte Hurwitz[44] concerned transmitting signals over electric power lines. In other words, in addition to transmitting electric power for running household appliances and other things, the power line transmitted data and information. The inventor's patent application discloses that, for transmitting signals, it is preferred that the signals are about 15 volts. The signal is initially only about 2 volts, and an amplifier is used to increase them to 15 volts. The 15 volt signals are then coupled to a power line using a transformer. The power line transmits an alternating current, which is used for transmitting the power as well as the signals. The claim (Claim 25) required the following elements:

- "an alternating current power line communication interface device:
- "a first signal source configured to generate a first data encoded signal"
- "a first transformer connected to the first signal conditioning circuitry"
- "second signal conditioning circuitry connected to the first transformer"
- "a second transformer connected in series with the second signal conditioning circuitry"

The claim was rejected as anticipated by U.S. Pat. No. 5,559,377 of Abraham.

a. FIG. 6A discloses some of the claim elements. The examiner's rejection was based on disclosures in the Abraham reference located in FIG. 6A and FIG. 25. The examiner had relied on "power transformer (27)" of FIG. 6A for its disclosure of the claim element, "first transformer connected to the first signal conditioning circuitry."

b. FIG. 25 discloses other claim elements. Also, the examiner relied on the distribution transformer (145) and three phase large transformer (147) in FIG. 25 for its disclosure of the claim elements, "second signal conditioning circuitry connected to the first transformer" and "second transformer connected in series with the second signal conditioning circuitry."

A view of the Abraham reference reveals that it describes FIG. 6A as, "a block diagram of a powerline communication apparatus in accordance with

[44] *Ex parte* Hurwitz, Appeal No. 2015-005669, Ser. No. 12/144,511, December 22, 2016.

the present invention including powerline transformers" (Col. 5, lines 4042) and that FIG. 25 is, "a block diagram of a power line communication system." (Col. 6, lines 3940).

c. FIG. 6A discloses lowpower embodiment, FIG. 25 discloses highpower embodiment. In the Reply Brief, the inventor explained why FIG. 6A and FIG. 25 described different embodiments. In the inventor's own words, "the Examiner has chosen to combine a lowpower embodiment (FIG. 6A) with a disparate high-power embodiment (FIG. 25) **. . .** [i]t is completely inappropriate for the examiner to pick and choose elements from one drawing to add to another separate embodiment."[45]

d. The Board reversed. The Board agreed with the inventor's argument and reversed, where the only cited case law in support of reversal was *Net MoneyIN* and *In re Arkley*.

3. *Ex parte Lee.*

Ex parte Lee[46] concerned a method for manufacturing metal structures that have internal passages and internal voids. As disclosed by the patent application, as originally filed, the claimed method could be used for making, "components having complex geometry and which are difficult to cast using conventional methods **. . .** [such as] hollow airfoils for gas turbine engines."[47]

The methods claim required the steps of:

- contacting a "disposable core die" with a "reusable core die" to form a composite
- adding a "slurry comprising ceramic particles into the composite"
- "curing the slurry to form a cured ceramic core"
- "removing the disposable core die and the reusable core die from the cured ceramic core"
- "firing the cured ceramic core to form a solidified ceramic core"

The claim was rejected as anticipated by U.S. Pat. No. 4,421,153 of Wilkinson. As detailed by the Board's opinion, the examiner's basis for rejection relied on disclosures at various locations in the Wilkinson reference:

- Col. 4 (lines 2231)
- Col. 3 (line 30) to Col. 6 (line 18)
- Col. 3 (line 3843)

[45] Reply Brief, Ser. No. 12/144,511, April 12, 2015.
[46] *Ex parte* Lee, Appeal No. 2015-003704, Ser. No. 13/801,483, September 28, 2016.
[47] Specification of Ser. No. 13/801,483, filed on March 13, 2013.

- Figures 4 to 8

The Board's decision hinged on the fact that FIG. 4 and FIG. 5 concerned a device made of hard wax while, in contrast, FIG. 7 concerned a device made of ceramic. The Board observed that these different disclosures, in addition to being at different locations, referred to nonidentical embodiments of the Wilkinson device. The Board observed that Wilkinson's Col. 4 (lines 22-31) concerned a slurry of "ceramic" that was fired to form a solid ceramic core while, in contrast, as described by the Board, "The core dies described in Wilkinson Col. 3 (lines 38-43) and shown in Figs. 4 and 5 **. . .** are **not the same as the core die** described in **. . .** Col. 4 (lines 22-31) and shown in Fig. 7, which is not ceramic, but rather **. . .** a hard wax." Altogether, the Board found that the different locations of Wilkinson that had been used in imposing the §102-rejection concerned "at least three different processes." The Board reversed, citing *Net MoneyIN* and *In re Arkley*.

4. *Ex parte Lieberman.*

Ex parte Lieberman[48] concerned a business method, where the method involves operating a computer. The claim required identifying an advertiser, and verifying a response by users to the advertisement. The issue was whether two different locations in the prior art reference disclosed features of the same embodiment or disclosed features of two different embodiments.

The claim read:

> "Claim 1. A computer implemented method for verifying a user response corresponding to an interactive advertisement, comprising:
> [1] identifying, by a computer, an advertiser based on a user dataset;
> [2] retrieving, by the computer, a plurality of advertising parameters corresponding to the identified advertiser;
> [3] **generating based on the plurality of advertising parameters, by the computer, the interactive advertisement comprising: (a) a media segment, and (b) a user input segment configured to receive the user response;** transmitting, by the computer, the interactive advertisement to a user; receiving, by the computer, the user response;
> [4] verifying, by the computer, the user response based on a portion of the plurality of advertising parameters to form a verification result;
> [5] **determining a publisher response based on the verification result . . . .**" (emphasis added)

The claim was rejected as anticipated by US2009/0012855 of Jamal. In the Final Rejection, the examiner alleged that Jamal's FIG. 1B disclosed the claim element (emphasized above in bold):

[48] *Ex parte* Lieberman, Appeal No. 2014-006333, Ser. No. 12/917,948, September 1, 2016.

> [D]etermining a publisher response based on the verification result, wherein the publication response includes providing access to content if the verification result sent to a publisher indicates that access should be given . . . .

Also, in the Final Rejection, the examiner alleged that Jamal's FIG. 1C disclosed the claim element (emphasized above bold):

> [G]enerating based on the plurality of advertising parameters . . . the interactive advertising comprising . . . a media segment, a user input segment configured to receive the user response . . . transmitting . . . the interactive advertisement to a user, receiving by the computer . . . the user response . . . .

Referring to Jamal's FIG. 1B and FIG. 1C, the inventor argued that, "Jamal's Fig. 1B includes three separate components while Fig. 1C includes two components, where one of the two components is a combination CAPTCHA/Ad component. The CAPTCHA/Ad component of Fig. 1C is not present in Fig. 1B . . . which . . . illustrates two separate components, one for the CAPTCHA and one for the Ad."[49]

Jamal's FIG. 1B, which has three components, and FIG. 1C, which as two components, are reproduced below. The inventor's goal in arguing that FIG. 1B and FIG. 1C had different number of components, when compared to each other, was to demonstrate that FIG. 1B and FIG. 1C corresponded to embodiments that are distinct from each other. As is self-evident, Jamal's FIG. 1B embodiment required that the user look at the row of crooked letters and numbers, and then type these into dialogue box (110), while Jamal's FIG. 1C required that the user look at the advertisement (305) and then type a name identifying the thing being advertised, in dialogue box (310). The inventor argued that, regarding Jamal's FIG. 1C, "Instead of a common characterbased CAPTCHA, Jamal discloses an advertisement as the CAPTCHA . . . Jamal may display a car, and ask the user a question, such as: What is the . . . make of the car . . . [i]f the user responds correctly . . . then the user is allowed to proceed to the webpage."[50] Jamal's figures took these forms:

[49] Appellent's Brief under 37 C.F.R. §41.37, Ser. No. 12/917,948, December 5, 2013.
[50] Appellent's Brief under 37 C.F.R. §41.37, Ser. No. 12/917,948, December 5, 2013.

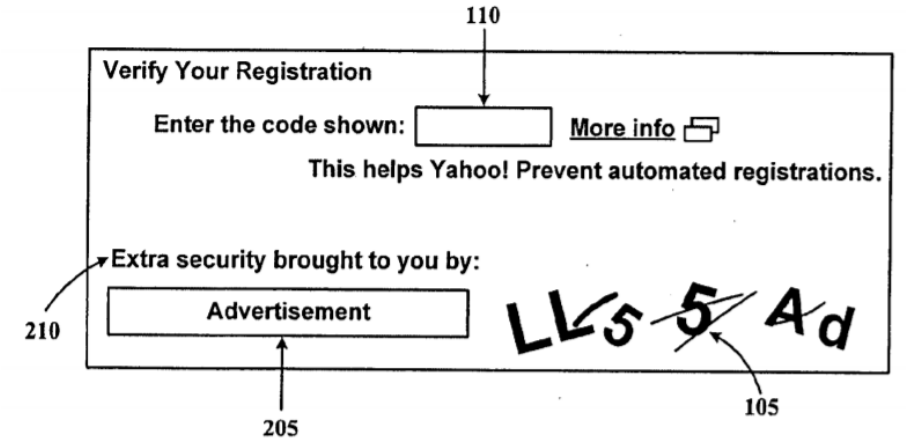


FIG. 1B

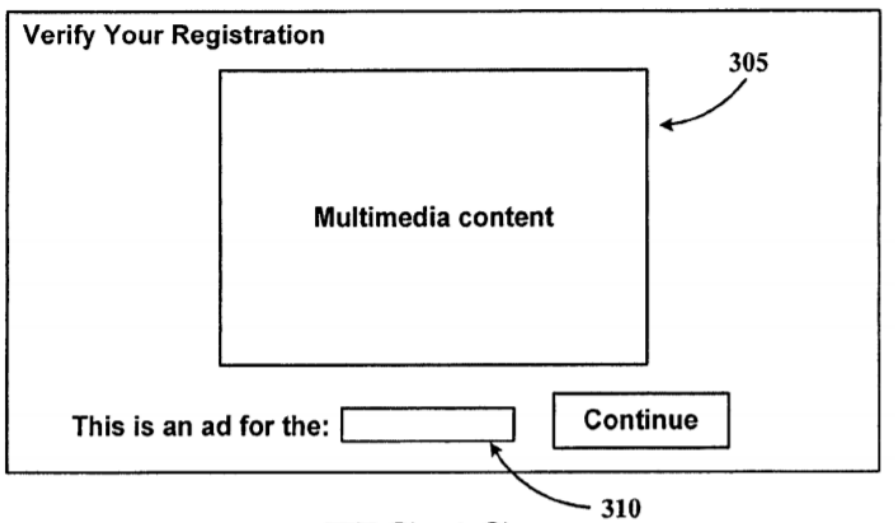


FIG. 1C

The inventor concluded that, "As is clearly illustrated . . . Jamal's Figs. 1B and 1C are distinct embodiments including different elements and cannot be picked and combined by the examiner in an effort to disclose Appellant's Claim 1."[51] *Ex parte Lieberman* illustrates a typical fact-pattern where a §102-rejection was reversed based on *Net MoneyIN*, and where the rebuttal strategy established these two things:

- The argument that the examiner had alleged that all of the elements of the claim were disclosed by the prior art reference, where the disclosure relied on two or more separate locations in the reference.

[51] Appellant's Brief under 37 C.F.R. §41.37, Ser. No. 12/917,948, December 5, 2013.

- The argument that the at least two or more separate of the separate locations in the reference described distinct embodiments of the invention.

5. *Ex parte Woods*.

Ex parte Woods[52] concerned an industrial shoe with a protector. This opinion is exemplary because of the large variety of rebuttal techniques used to establish that information in two different locations of the prior art reference corresponded to two different embodiments, thereby establishing that the rejection could be overcome by invoking the rule of *Net MoneyIN*. This variety of techniques was:

1. Argue that the two embodiments have different names, e.g., embodiment 200 and embodiment 600, and are therefore not the same embodiment
2. Argue that the two embodiments are disclosed in different figures, and are therefore not the same embodiment
3. Argue that the same structure, such as a flap, has different **structure numbers** in the different figures, and for this reason the different figures disclose nonidentical embodiments
4. Argue that the two embodiments differ from each other because one embodiment includes a particular component, such as "stitching," while, in contrast, the other embodiment does not include that same component

The claim read:

> Claim 1. An industrial shoe protector, comprising:
> a **strap**;
> a **canopy portion connected to said strap . . . two securing holes in the canopy portion** upper quarter;
> wherein the industrial shoe protector is configured to secure to an industrial shoe by inserting one or more laces of the industrial shoe through the **securing holes** in the canopy portion **. . .** and
> wherein said canopy portion is configured to cover the laces of the industrial shoe below an ankle of the industrial shoe when the industrial shoe protector is secured to the industrial shoe. (emphasis added)

The claim was rejected as anticipated by U.S. Pat. No. 5,042,119 of Williams.

a. Inventor argued that the rejection was based on two different embodiments. In the Appeal Brief, the inventor argued that, "the Office Action has not established that Williams discloses each element of Claim 1 as arranged in Claim 1. Instead, the Office Action reads some of the elements of Claim 1 on features in one embodiment in Williams and reads other elements of Claim 1 on different embodiments."

[52] *Ex parte* Woods, Appeal. No. 2017-000030, Ser. No. 13/632,757, November 30, 2017.

Also, in the Appeal Brief, the inventor observed that the Williams reference discloses embodiment 200 (FIG. 2A) and embodiment 600 (FIG. 6). The inventor reiterated the examiner's basis of rejection, namely, that the first few elements of Claim 1, such as the strap, canopy portion, and two securing holes, were alleged to be disclosed by Williams' embodiment 200 (FIG. 2A), while the other claim elements were alleged to be disclosed by other embodiments, such as by Williams' embodiment 600 (FIG. 6).[53]

b. The Board took the inventor's argument a step further, and established that the FIG. 2A embodiment was physically different from the FIG. 6 embodiment. This is about the difference in the FIG. 2A and FIG. 6 embodiments of the prior art reference. The flaps of FIG. 2A were not permanently secured to the shoe while, in contrast, the flaps of FIG. 6 were permanently secured to the shoe. These facts conclusively demonstrate that the FIG. 2A embodiment and the FIG. 6 embodiment are not the same. They are not the same because of their different names (embodiment 200; embodiment 600), and also because of differences in how the flaps were secured to the shoe.

The Board focused on element 20 in FIG. 1 and element 20 in FIG. 6. In FIG. 1, element 20 not permanently attached to the shoe while, in contrast, in FIG. 6, element 20 is permanently stitched to the shoe. In the Board's own words, a feature that distinguishes the embodiment of FIGS. 1-3 from the embodiment of FIG. 6 was:

> To the extent that the Examiner is asserting that, in the Williams disclosure, the canopy portion and the strap in each of the figures are the same as those shown in each of the other figures, or that they have the same features, we do not agree. For example, elements **20** and **20'** in Figure 6, which are asserted to correspond to the claimed canopy, are two flaps **permanently secured to the shoe by stitching**. Williams, Fig. 6, col. 8, ll. 62–65. In contrast, element 20 in Figures 1–3 is **not permanently attached to the shoe**. (emphasis added)

c. FIG. 2A and FIG. 6 of the Williams reference. Shown below are embodiment 200 (FIG. 2A) and embodiment 600 (FIG. 6) of the Williams reference. FIG. 2A and FIG. 6 each disclosed a shoe with:

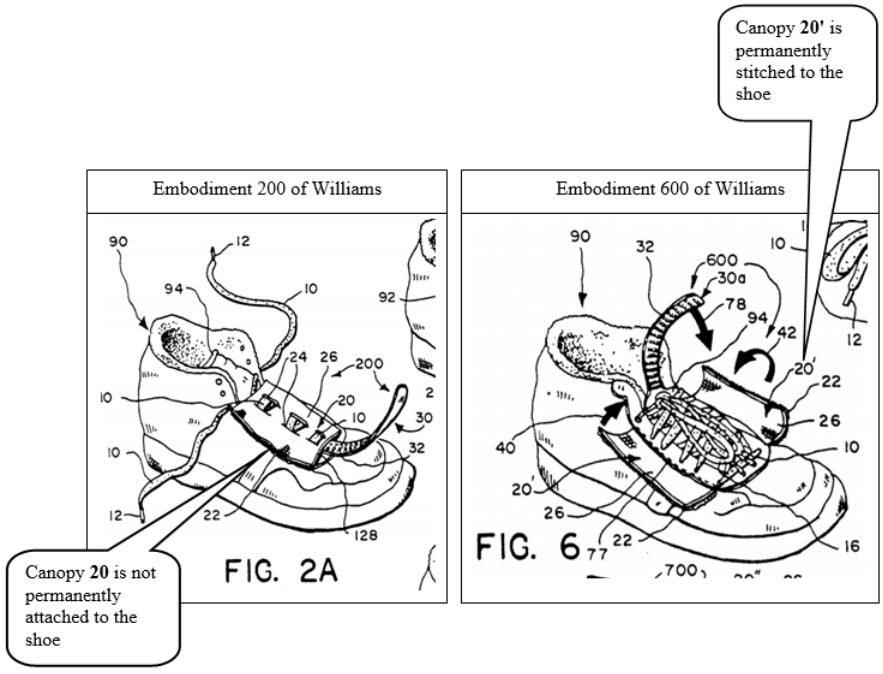
- canopy portion (20) FIG. 2A; canopy portion (20') FIG. 6
- strap (30) FIG. 2A; strap (30a) FIG. 6
- tied lace ends (10) FIG. 2A; tied lace ends (10) FIG. 6
- shoe (90) FIG. 2A; shoe (90) FIG. 6

At this point, it can be seen that differences in the embodiment of FIG. 2A and FIG. 6 are:

[53] Appeal Brief Pursuant to 37 C.F.R. 41.37, Ser. No. 13/632,757, July 19, 2019.

- Different figure numbers
- Different embodiment numbers
- The FIG. 2a embodiment had flaps that were not permanently attached to the shoe, while the FIG. 6 embodiment had flaps permanently secured to the shoe by stitching.
- Different structure numbers for parts having the same name. For example, the "canopy portion" has different structure numbers in FIG. 2A and in FIG. 6, and the "strap" has different structure numbers in FIG. 2A and in FIG. 6

The Board expressly pointed out that the use of *different structure numbers* to refer to a structure with the same name, compelled the conclusion that FIG. 2A and FIG. 6 were not identical embodiments. On this point, the Board wrote, "Differences between embodiments also exist for strap **30**, leading to the use of different reference numerals such as **30'**, **30''**, and **30a**." Please note the different structure numbers, **20** and **20'** for referring to the canopy portion, and the different structure numbers **30'**, **30''**, and **30a**, for referring to the strap. The Board reversed, citing *Net MoneyIN*.



C. DISTINCT EMBODIMENTS DISCLOSED BY DIFFERENT TABLES

1. *Ex parte Nazarenko.*

Ex parte Nazarenko[54] concerned a method for using a sample from a patient, dividing the sample in two, and testing the first half of the sample with a probe (nucleic acid) specific for detecting a **first type of virus** and with a probe (nucleic acid) specific for detecting a **second type of virus**. Regarding the second half of the sample, the claim requires that it be tested with a probe (nucleic acid) specific for detecting the same **second type of virus** and with a probe (nucleic acid) specific for detecting a **third type of virus**.

In the claim, the three types of viruses are called, "first genotype," "second genotype," and "third genotype." The claim read:

> Claim 1. A method for genotyping a target nucleic acid in a sample is provided comprising:
>
> (a) generating a first detection mixture by a method comprising contacting a portion of the sample with a first probe set, wherein the first probe set comprises a nucleic acid probe specific for a **first genotype** of the target nucleic acid and a nucleic acid probe specific for a **second genotype** of the target nucleic acid, but **does not comprise** a nucleic acid probe specific for a **third genotype** of the target nucleic acid;
>
> (b) generating a second detection mixture by a method *comprising contacting a portion of the sample with a second* probe set, wherein the second probe set comprises a nucleic acid probe specific for the **second genotype** of the target nucleic acid and a nucleic acid probe specific for the **third genotype** of the target nucleic acid, but **does not comprise** a nucleic acid probe specific for the **first genotype** of the target nucleic acid . . . . (emphasis added)

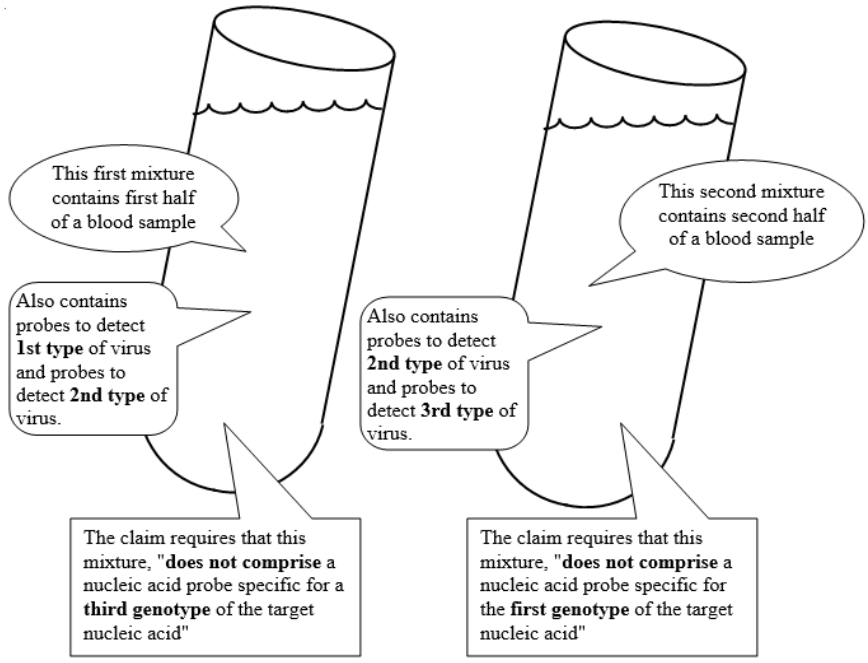
The goal of the claim was to detect human papillomavirus (HPV), as is evident from the title of the patent application, "Method of Determining and Confirming the Presence of HPV in a Sample."

a. Map of claim elements, where the map discloses corresponding substances in the prior art Anthony reference. The claim requires two mixtures. The first mixture requires a first half of a sample, such as a blood sample, and it requires probes to detect a **first type of virus**, and probes to detect a **second type of virus**. Regarding the second mixture, the claim requires that the second mixture include the second half of the sample, such as a blood sample, plus probes for the same **second type of virus** and probes for a **third type of virus**. Also, the claim required that the second mixture NOT contain probes that can detect the **first type of virus**. Please look at the illustration below (the "map") and see that the first mixture requires probes for a 1st type of virus and

[54] *Ex parte* Nazarenko, Appeal No. 2014-008020, Ser. No. 13/016,004, August 31, 2016.

a 2nd type of virus, and that the second mixture requires probes for the same 2nd type of virus, and for a 3rd type of virus.

A "map" of what is required by the claim is illustrated by the following picture of two test tubes, where the first test tube contains the first mixture and the second test tube contains the second mixture (the claim requires two mixtures). The author drew this picture. The probes are made of DNA, where the probes were designed so that they can stick to and identify the intended virus DNA.



b. Locations used as the basis of the §102-rejection (Table 23 and Table 24 of Example 13). The claim was rejected as anticipated by U.S. Pat. No. 7,439,016 of Anthony. The Anthony reference disclosed a method of using nucleic acid probes to detect nucleic acids of human papillomavirus (HPV). By detecting the nucleic acids of HPV, one detects the virus itself (the reason is that the virus would not be a virus, unless it contained viral nucleic acids). The following concerns only the claim's requirement for, "generating a first detection mixture." The examiner had alleged that the "first detection mixture" was disclosed by combining the probes disclosed in Table 23 with the probes disclosed in Table 24. Table 23 disclosed probes for a first type of virus (HPV18). Table 24 disclosed probes for a second type of virus (HPV45).

The Board determined that the Anthony reference failed to disclose, "generating a first detection mixture." Because the Anthony reference failed to disclose this particular claim element, the Board was able to reverse the rejection

based only on this shortcoming of Anthony. Therefore, there is only a need in this law review article, to describe why the Board refused to accept the examiner's allegation that the disclosure of Table 23 constituted an embodiment distinct from the embodiment of Table 24.

c. The examiner's train of logic for combining the probes of Table 23 and 24 to produce the claim element, "first detection mixture." The Board referred to the examiner's basis of rejection, which included the following train of logic. The examiner had reasoned that the probes from these two tables could be mixed with each other, thereby producing a mixture that anticipated the claim element, "first detection mixture." Regarding this train of logic, the Board wrote, "Insofar as the examiner finds the mixtures and probes in Table 23 are somehow combined with the mixtures and probes in Table 24 to satisfy the "*first detection mixture*" of Claim 1, that finding is not consistent with the teachings of Anthony."

d. The Board determined that the mixtures of Table 23 and Table 24 were so distinct, as to constitute non-combinable separate embodiments. The Board reiterated the inventor's argument that it was impossible to combine the mixtures of Table 23 and Table 24. Tables 23 and 24, which were disclosed adjacent to each other in the Anthony reference, are reproduced below. The notation "Target" refers to the blood sample containing the virus. The notation "CSP" means Capture Sequence Probes, and this refers to any probes used to detect the human papillomavirus (HPV).

The mixture for detecting human papillomavirus 18 (HPV18) is shown in Table 23, and this mixture contains some HPV18, as well as some HPV45. In other words, the mixture for detecting HPV18 was designed so that it contained both HPV18 and HPV45, but the probes in this mixture were designed so that they would only pick up HPV18.

Similarly, the mixture for detecting HPV45 (Table 24) contained some HPV45 as well as some HPV18, but the probes in this mixture were designed so that they would only pick up HPV45.

The Board's decision hinged on the fact that both mixtures contained some human papillomavirus 18 (HPV18), but that the amount of HPV18 in the Table 23 was different from the amount of HPV18 required by Table 24, thereby rendering irrational the examiner's proposal that one could combine the mixtures of Tables 23 and Table 24 to produce the claim element, "first detection mixture."

To this end, the Board wrote, "Appellant . . . argues the examiner's interpretation of Tables 23 and 24 as teaching a 'first detection mixture' having probe sets for both HPV18 and HPV45 is incorrect. That is not possible . . . because the concentrations of HPV18 and HPV45 are different in . . . Table 23 versus . . . in Table 24 . . . the examiner's assertion . . . is refuted by the impossibility of a mixture simultaneously containing 10 picograms/mL **and** 4 nanograms/mL of HPV18 DNA . . . ." (emphasis in original)

TABLE 23

TSHC Detection of HPV 18

Method	Target	SSP	CSP	S/N
TSHC	0	18L1	18-7L	1.0
	HPV18 (10 pg/ml)	18L1	18-7L	16.9
	HPV45 (4 ng/ml)	18L1	18-7L	1.3
HC II	0	18L1	none	1.0
	HPV18 (10 pg/ml)	18L1	none	7.6
	HPV45 (4 ng/ml)	18L1	none	393.3

TABLE 24

TSHC Detection of HPV 45

Method	Target	SSP	CSP	S/N
TSHC	0	45L1	ON-1	1.0
	HPV45 (10 pg/ml)	45L1	ON-1	8.4
	HPV18 (4 ng/ml)	45L1	ON-1	1.6
HC II	0	45L1	none	1.0
	HPV45 (10 pg/ml)	45L1	none	8.2
	HPV18 (4 ng/ml)	45L1	none	494.0

The Board reversed, writing, "As Appellant correctly points out, each reaction mixture of Anthony includes probes specific for one HPV genotype . . . Anthony does not teach a *single* detection mixture that includes probes for *both* HPV18 and HPV45." In reversing, the Board cited *Net MoneyIN* as the only case law supporting reversal of the §102-rejection. The take-home lessons from this opinion are that attorneys and agents drafting a rebuttal should consider drafting the following types of arguments:

- Drafting an argument that information in the two locations constitute two different embodiments, for example, based on the fact that the first embodiment is named Table 1 and the second embodiment is named Table 2.
- Where the examiner's basis of rejection rests on information in one location in the prior art reference, for example, in a location called "Example 13" (see above opinion), the attorney or agent needs to scrutinize this particular location and determine if it actually discloses a plurality of distinct embodiments. In the above opinion, "Example 13" was found to comprise two distinct embodiments (Tables 23 and 24), thereby providing an avenue to for a successful rebuttal of the §102-rejection.

- Where the examiner's basis of rejection was to combine a first chemical composition with a second chemical composition, to result in a composition containing all of the chemicals required by the claim, the attorney or agent should consider drafting the following type of rebuttal. The rebuttal argues that the first chemical composition requires that a specific chemical be at a first concentration, and that a second chemical composition requires that the same chemical be at a second (different) concentration. This rebuttal argument concludes that, because it is *impossible for a mixture of the two chemical compositions to contain one specific chemical that simultaneously exists at two different concentrations* (this situation would be entirely devoid of reason and logic), it is the case that the two chemical compositions represent two distinct embodiments.

- The "impossibility" argument from the above opinion, was that the first composition requires that HPV18 be at a concentration of **10 picograms/mL**, and that the second composition requires that HPV18 be at a concentration of **4 nanograms/mL** and that, because it is impossible for the combination of the first composition with the second composition to produce a mixture where HPV18 is at 10 picograms/mL and simultaneously at 4 nanograms/mL, it is the case that the two chemical compositions represent distinct embodiments.

- This author provides another "impossibility" argument. Another "impossibility" argument, which can be used to demonstrate that information in two different locations in a prior art reference belong to two, distinct embodiments, is as follows. Please imagine the hypothetical where the claim requires a mixture of Chemical A and Chemical B. Also, please imagine that the prior art reference discloses a first composition with Chemical A at **23 degrees**, and that it also discloses a second composition with Chemical B at **37 degrees**. Where the examiner rejects the claim as anticipated, based on the combination of the first composition and the second composition, the rebuttal could argue that these two compositions are distinct from each other, and that it impossible and irrational to combine the chemicals from the two different mixtures. The argument that it is impossible and irrational to combine the chemicals is that the prior art reference requires that first composition and second compositions be at different temperatures.

D. DISTINCT EMBODIMENTS DISCLOSED BY A FIGURE AND BY THE TEXT

1. *Ex parte Hochstenbach.*

Ex parte Hochstenbach[55] concerned a semiconductor component with a metal layer and a dielectric layer. Because Claim 8 depends from Claim 6, both of these claims are reproduced below:

[55] *Ex parte* Hochstenbach, Appeal. No. 2013-002983, Ser. No. 12/670,484, March 30, 2016.

Claim 6. A semiconductor component comprising:
a stack of layers, and
at least one reinforcing structure having at least one integrated anchor-like part in an interconnect structure of metallization layers and dielectric layers,
the at least one reinforcing element being configured and arranged to mitigate delamination of the metallization and dielectric layers.

Claim 8. A semiconductor component as claimed in claim 6,
the **stack of layers** comprising at least one **metal layer** and at least one **dielectric layer**, characterized in that at least one **metal layer** is connected to at least one **dielectric layer** by the at least one reinforcing structure. (emphasis added)

Claim 8 was rejected as anticipated by U.S. Pat. No. 6,495,917 of Ellis-Monaghan.

a. Rebuttal that two locations in prior art reference were incompatible with each other. The inventor argued that the rejection was based on combining features from FIG. 5 and FIG. 6 of the Ellis-Monaghan reference. The Board characterized the inventor's rebuttal argument as, "Appellant further submits that the rejection of Claim 8 is improper because the cited portions of the [Ellis-Monaghan] reference **. . .** would invoke a disparate combination of alleged embodiments that would not **. . .** function together **. . .** the rejection of Claim 8 first asserts that Figure 5 in the **. . .** reference discloses a **stack of layers**, and then cites to Figure 6 in asserting that one of the layers is a **metal layer**. However, as the **. . .** metal layer is in Figure 6, not Figure 5, the alleged correspondence is without basis."[56]

b. Embodiments distinguished from each other by their names (FIG. 5 and FIG. 6) and by the terms, "additional embodiment" and "another embodiment." A view of the Ellis-Monaghan reference reveals that FIG. 5 and FIG. 6 show similar devices but with some differences, as shown below. Furthermore, the text of the Ellis-Monaghan reference reveals that FIG. 5 and FIG. 6 are separate and distinct embodiments. The reference characterizes Fig. 5 as, "An additional embodiment, which is illustrated in FIG. 5, includes a cap (51) located between LLM1 and LM. This is a "rivet" design." (Col. 6, lines 36 of Ellis-Monaghan). Regarding the FIG. 6 embodiment, the reference recites, "Another embodiment **. . .** comprises a cap and a leg structure, as shown in FIG. 6 (Col. 6, lines 1415 of Ellis-Monaghan).

[56] Appeal Brief, U.S. Ser. No. 12/670,484, May 21, 2012 (21 pages).

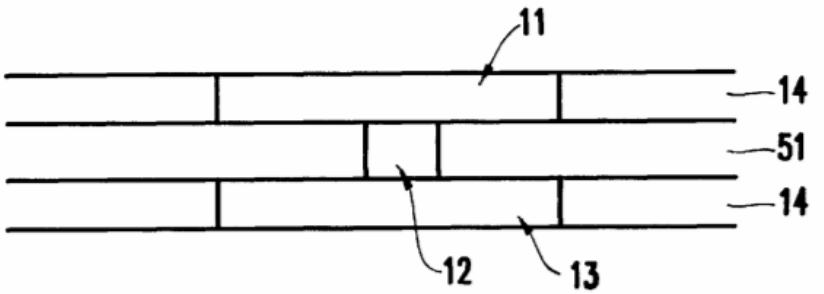


FIG.5

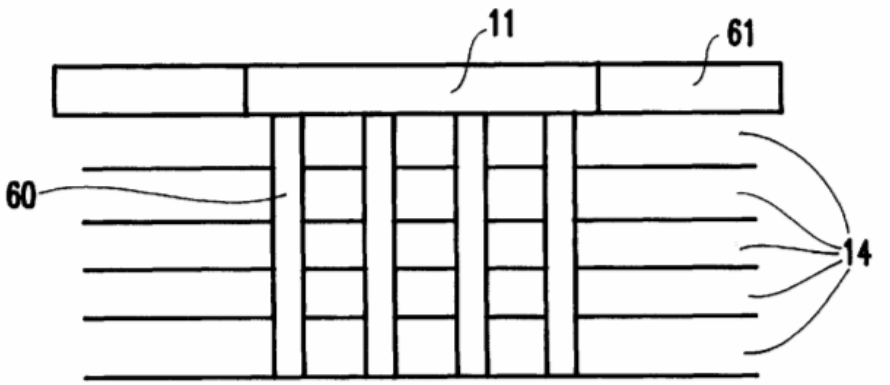


FIG.6

The Board reversed, citing *Net MoneyIN*, and writing, "We agree with Appellants. For a prior art reference to anticipate a claim, it must disclose all of the limitations of the claim, "arranged or combined in the same way as in the claim." *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1370 (Fed. Cir. 2008) (holding invention was not anticipated by a prior art reference that disclosed all the components of the invention but in separate embodiments)."

The take-home lesson is that effective application of *Net MoneyIN* in a rebuttal argument can involve demonstrating:

- That the basis for rejection relied on combining features from two figures of the prior art reference.
- That the prior art reference discloses that these two figures correspond to two distinct embodiments of an invention, and do not correspond to two

different representations of the same embodiment.

2. *Ex parte Krishnan.*

Ex parte Krishnan[57] demonstrates that a person drafting a rebuttal to a §102-rejection the needs to scrutinize different figures of a prior art reference, to determine if they refer to the same or to different embodiments. The opinion concerned a medical device for inserting into a vein. The medical device includes a catheter. After inserting into the vein, the distal end of the medical device enters the heart, crosses from the right atrium to the left atrium, and then through the fossa ovalis. To cross through the fossa ovalis, you need to puncture this part of the heart with a needle mounted on the distal end of a catheter. The procedure of inserting the medical devices is started by inserting a guidewire into the femoral vein and advancing to the superior vena cava. The method for using a guidewire and moving it through a blood vessel, and where the guidewire is used to guide a catheter that surrounds the guidewire, was devised by Seldinger.[58]

In the claimed apparatus, a catheter is run over the guidewire to the heart, and then moved towards the heart. The distal end of the catheter holds a machine that senses cardiac electrical activity, and provides an electrical signal. The electric signal is used to locate the fossa ovalis (a structure in the heart) and to ensure accurate placement of the catheter.

The claim required an apparatus with these elements:

- a hollow catheter
- a machine for measuring cardiac electrical activity, coupled to the distal end of the catheter
- the lumen of the catheter holds a "transseptal needle comparing means for advancing and retracting said . . . needle into and through the . . . lumen to an extent that . . . a distal tip of the . . . needle protrudes beyond the distal end of the . . . catheter."

The word "lumen," which occurs in the claim, means the central hollow tube-like region inside a structure, such as a hose, catheter, or blood vessel.

The claim was rejected as anticipated by U.S. Pat. No. 6,668,198 of Swanson. The Board observed that the claim requires at least three structures:

1. Catheter,
2. Machine for measuring cardiac electrical activity, and
3. Transseptal needle that can be advanced and retracted through the catheter.

[57] *Ex parte* Krishnan, Appeal No. 2014-005226, Ser. No. 12/972,788, May 13, 2016.

[58] Sven Ivar Seldinger, *Catheter Replacement of the Needle in Percutaneous Arteriography: A New Technique*, 39 Acta Radiologica 368 (1953).

The Board turned to the Swanson reference and determined that Swanson separately discloses a catheter (sheath (26)) coupled to a machine for measuring cardiac electrical activity (electrode (29)), and a needle. Swanson's disclosure of the catheter (sheath (26)) coupled to the electrode (29) can be seen in the following excerpt from Swanson (Col. 9, lines 611):

> To accomplish these objectives, the probe **10** includes a sheath **26** carried by the catheter tube **12**. The distal section **30** of the sheath **26** extends about the multiple electrode structure **20** (see FIGS. **1** and **2**A). The distal section **30** of the sheath **26** is joined to the end of the multiple electrode structure, e.g. by adhesive or thermal bonding.

Regarding FIG. 1, the Board observed that this figure fails to disclose any needle. Regarding the needle, the Board observed that Swanson (Col. 22, lines 1829) discloses a needle, as shown in the following excerpt:

> A transeptal approach will most likely be used to create left atrial lesions. In a transeptal approach, an introducing sheath is inserted into the right atrium through the use of a dilator. Once the dilator/sheath combination is placed near the fossa ovalis under fluoroscopic guidance, a needle is inserted through the dilator and is advanced through the fossa ovalis. Once the needle has been confirmed to reside in the left atrium by fluoroscopic observation of radiopaque contrast material injected through the needle lumen, the dilator/sheath combination is advanced over the needle and into the left atrium. At this point, the dilator is removed leaving the sheath in the left atrium.

As can be seen in this excerpt (Swanson, Col. 22, lines 1829), it discloses a needle that can be inserted through the equivalent of a catheter ("dilator/sheath combination"), but there is not any disclosure of any machine for sensing cardiac electrical activity. The Board refused the examiner's basis of rejection, writing that, "The examiner has identified separate teachings in Swanson for these elements . . . [h]owever, in order to obtain the claimed invention, the . . . artisan would need to pick sheath (26) coupled to electrode (20) . . . and then separately pick a transseptal needle . . . because the examiner does not identify any disclosure in Swanson showing these two elements combined in a single apparatus, as required by Claim 1."

The Board reversed, citing *Net MoneyIN* and *In re Arkley*. The take-home lessons from this opinion are the same as those from many opinions citing *Net MoneyIN*:

- Argue that the examiner's basis for rejection was based on information disclosed at two separate locations in the prior art reference. In the above opinion, the two locations were "FIG. 1" and Col. 22 (lines 1829).

- Argue that information discloses in one location concerns an embodiment that is distinct from the embodiment disclosed by information in the other location. In the above opinion, FIG. 1 belongs to a device where an electrode detects cardiac electrical activity while, in contrast, Col. 22 (lines 1829) discloses a device that detects position of the distal end of a catheter by "fluoroscopic observation."

3. *Ex parte Pierik.*

Ex parte Pierik[59] concerned a "valve actuator." The valve actuator functions to actuate an intake valve and an exhaust valve of an engine. Air enters the cylinders via the intake valve, and exhaust leaves the cylinders through the exhaust valve. The valve actuator can be driven by a camshaft.

The claim (Claim 11) was to a method that required various steps. The claim required two different valves, as shown by the excerpt, "A method comprising: actuating at least one of an intake valve and an exhaust valve of an engine using a valve actuator . . ." The claim also required a timing step, that is, "opening a control valve in response to at least one of a first pressure of hydraulic fluid in the supply line and a second pressure of hydraulic fluid in the accumulator . . ."

The claim was rejected as anticipated by WO2010/054653 of Rosenlund. The guiding light in sorting out the various issues is that:

- The claim required two valves that are controlled separately
- In imposing the rejection, the examiner relied on Rosenlund's 2way valve (which does not involve separate controls) of **FIG. 6**
- In imposing the rejection, the examiner did not make use of Rosenlund's two valves (46 and 48) which have separate controls for each valve, of **FIG. 3**

a. Three locations of Rosenlund reference (FIG. 3, FIG. 4 and FIG. 6). The opinion concerns three different locations in Rosenlund. FIG. 3 and FIG. 6 are drawings of valves, while FIG. 4 is a graph of a timing sequence of the FIG. 3 valve (this timing sequence is relevant to the FIG. 3 valve and is not relevant to the FIG. 6 valve). A view of the text of Rosenlund (page 14, lines 10-15) reveals that FIG. 4 concerns a timing sequence, as is evident from the writing, "The operation of the **. . .** valve actuation system will now be described with reference to the sequence diagram shown in Figure 4 **. . .** the operation of the exhaust valve (11) is divided into six sequential periods." Rosenlund's account of the six periods (periods 0, 1, 2, 3, 4, and 5) concludes on Rosenlund's page 18, line 5.

[59] *Ex parte* Pierik, Appeal No. 2016-002103, Ser. No. 13/564,111, August 28, 2017.

b. The Final Rejection. A view of the Final Rejection[60] reveals that the §102-rejection against Claim 11 was described by the examiner, in one paragraph, where this paragraph referred to parts of Rosenlund relating to timing sequence (Rosenlund's page 17, lines 10-20) and to parts of Rosenlund referring to the valve actuator (FIG. 6). The rejection had mistakenly rested on the assumption that the FIG. 4 (timing sequence) and FIG. 6 (integrated valve) were part of the same embodiment.

c. FIG. 3 valve embodiment (two separate valves) and FIG. 6 valve embodiment (integrated valve). The opinion centered around the FIG. 3 valve embodiment and the FIG. 6 valve embodiment of Rosenlund. The relevant structures of these two figures are the separate valves (46) and (48) of FIG. 3 and the integrated twoway valve (46/48) of FIG. 6. The Board characterized the integrated valve of FIG. 6 as, "Rosenlund indeed discloses an embodiment of the invention having two-way valve 46, 48, as shown in Figure 6." Figures 3 and 6 are shown below, where these figures show the separate valves (**FIG**. **3**) and the integrated valve (**FIG**. **6**):

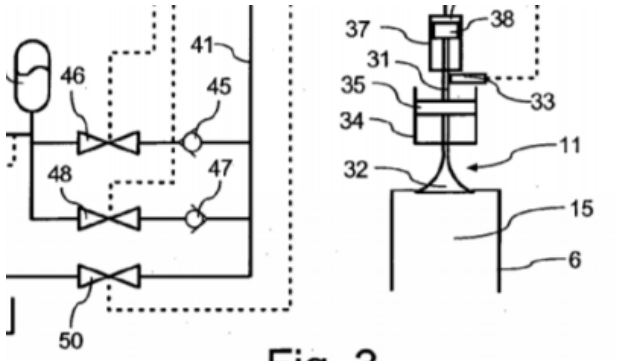


Fig. 3

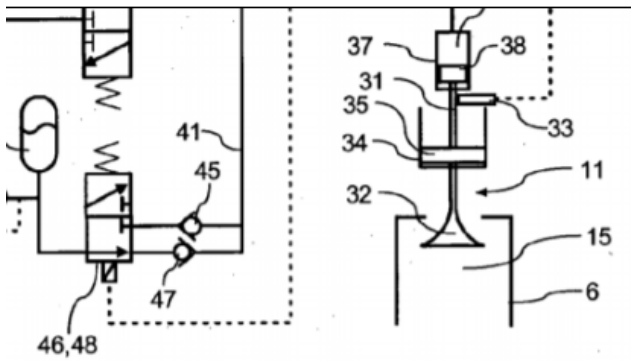


Fig. 6

[60]Final Rejection, Ser. No. 13/564,111, January 29, 2015).

c. The Board determines that the timing sequence of FIG. 4 is associated with the valve of FIG. 3 (not with the valve of FIG. 6). In a turning point in the opinion, the Board commented on Rosenburg's disclosure of a timing where valve (48) is closed and valve (46) is opened in response to pressure from an actuator. This particular disclosure corresponds to the claim's requirement for "opening a control valve in response to at least one of a . . . pressure of hydraulic fluid in the accumulator."

The Board observed that the "timing sequence diagram of Figure 4 . . . regards the embodiment having separately electronically controlled valves (46) and (48) shown in figure 3," referring to Rosenlund's page 7 (lines 1517). This part of Rosenlund (page 7, lines 1517) is reproduced below. This excerpt from Rosenlund establishes that FIG. 4 is relevant to the FIG. 3 embodiment, and that FIG. 4 is not relevant to the FIG. 6 embodiment.

15 figure 4 is a sequence diagram illustrating the timing of
the opening and closing of the electronically controlled
valves of the exhaust valve actuating system of figure 3,

d. Reversal based on *Net MoneyIN*. The Board reiterated the examiner's basis for rejection writing, "the Examiner relies on Rosenlund's **control valve 46, 48 being a two-way valve**, and on Rosenlund's description of period 5 of the **timing sequence** diagram shown in Figure 4." (emphasis added)

Then, the Board stated what is in actuality disclosed by Rosenlund, writing that, "Rosenlund indeed discloses an embodiment . . . having two-way valve 46, 48, as shown in Figure 6. The timing sequence diagram of Figure 4, however, regards the embodiment having separate electronically controlled valves 46 and 48 shown in Figure 3. Rosenlund, p. 7, ll. 15-17."

And then, the Board stated what is not in any way disclosed by Rosenlund, writing that, "There is no disclosure of two-way valve 46, 48 having valve components that oppositely open and close, and there is no indication that the timing sequence diagram for the embodiment of having separate electronically controlled valves 46 and 48 is applicable to the embodiment having two-way valve 46, 48."

Finally, the Board reversed, writing, "Consequently, the Examiner's reliance on two-way valve 46, 48 and the description of period 5 in the timing sequence diagram of Figure 4 improperly combines elements of different embodiments." The Board cited only *Net MoneyIN* as the case law relevant to the reversal.

Ex parte Pierik is exemplary for its disclosure of the following unique fact-pattern which, if recognized by the attorney or agent, can result in an effective rebuttal. The unique fact-pattern is where the rejection was based on the false notion that information from Location 1 was relevant to information from Location 2 where, in fact, the true situation was that information from Location 1 was relevant to information in *Location 3*.

E. DISTINCT EMBODIMENTS DISCLOSED BY BACKGROUND OF THE INVENTION SECTION AND BY SUMMARY OF THE INVENTION SECTION

1. *Ex parte Tannenbaum.*

The most usually encountered situation where *Net MoneyIN* is applied to reverse a §102-rejection, is where the rejection had been based on combining information from two different locations in a prior art patent, and where each location was named, for example, "first embodiment" and "second embodiment." In contrast, *Ex parte Tannenbaum*[61] discloses the situation where the rejection was based on combining information from two different locations, where these locations were from the:

- Background Information section of the prior art patent; and
- Summary of the Invention section of the prior art patent.

Please note that the "Summary of the Invention" section of the patent's Specification usually takes the form of the entire claim set, but with the claim numbers removed, and where the writing is supplemented so that it resemble flowing paragraphs of writing.[62]

In *Ex parte Tannenbaum*, the claim was rejected as anticipated by U.S. Pat. No. 5,770,228 of Edwards, and where the rejection was based on information from:

- Background Information (Col. 7, lines 48) of the Edwards reference
- Summary of the Invention section of the Edwards reference

a. The claim. The claim was to a method for treating ulcers, where treatment was by administering two types of proteins to the patient. The proteins were insulin and PDGF-BB. PDGF-BB is a protein called, "platelet derived growth factorBB." PDGF-BB is used for treating non-healing wounds that occur in diabetes. These wounds are called diabetic ulcers.[63] The claim read, "Claim 1. A method of inducing **. . .** a healing process of a diabetic ulcer, the method comprising the step of administering to the diabetic ulcer **. . .** insulin and PDGF-BB . . ."

b. Disclosures of all the elements of the claim by two different locations in the prior art reference. A view of the Edwards reference reveals that the SUMMARY OF THE INVENTION discloses the claim element, PDGF-BB but there is not any disclosure here of insulin. The Board referred to the following

[61] *Ex parte* Tanenbaum, Ser. No. 13/311,675, May 25, 2016.

[62] Manual of Patent Examining Procedure (MPEP) 9th ed., MPEP §608.01(d) Brief Summary of the Invention. MPEP §608.01(d) states that, "The brief summary of the invention should be consistent with the subject matter of the claims."

[63] Das et al., *Syndecan-4 enhances PDGF-BB activity in diabetic wound healing*, 42 Acta Biomater. 56 (Sept. 15, 2016).

excerpt of in the SUMMARY OF THE INVENTION section. Please note the recitation of, "PDGF will be understood to include the . . . BB . . . isoforms of PDGF":

SUMMARY OF THE INVENTION

Briefly stated, the present invention provides compositions comprising a therapeutically effective amount of PDGF in a hydroxyethyl cellulose gel. Within the context of the present invention, PDGF will be understood to include the AA, BB and AB isoforms of PDGF, individually or in combination, as well as analogs thereof. In addition, the BB

Also, the Board referred to another location of the Edwards reference, namely, Col. 7 (lines 48), for its disclosure of insulin. But there is not any disclosure here of PDGF-BB. Column 7 (lines 48) is shown here:

7

The therapeutic compositions of the present invention may also contain other pharmaceutically active ingredients, for example, heparin, which has been shown to accelerate the healing of thermal burns. Other growth factors, such as TGF-α, TGF-β, EGF, basic or acidic FGF, platelet factor 4, insulin or somatomedins (see Grotendorst et al., 1985) and angiogenesis factor, may also work synergistically with PDGF as described herein. Antibiotics may also be included to keep the wound free of infection.

c. Board's basis for reversal. The Board reversed, citing *Net MoneyIN* and *In re Arkley*, writing, "Our issue with Edwards is not a lack of teaching of the claim limitations, it is that those limitations must be pieced together from disclosures throughout the reference . . . we are unpersuaded the disclosures in Edwards are necessarily 'arranged or combined in the same way' as the limitations of claim 1. *Net MoneyIN,* 545 F.3d at 1371."

d. Examiner's basis of rejection resembled a doctrine from the obviousness inquiry. The examiner's basis of rejection invoked a doctrine relating to obviousness inquiry. Referring to the examiner's basis of rejection, the Board wrote, "According to the Examiner, Edwards thus 'discloses the claimed invention and **one of ordinary skill . . . would have known that treatment of diabetic ulcers was intended**."' (**emphasis** added).

In this author's opinion, the examiner's statement that, "one of ordinary skill . . . would have known that the treatment of diabetic ulcers was intended," invokes the doctrine that the required rationale to combine references, is sup-

plied where a prior art reference discloses a "motivation to combine" (see, *In re Kahn*[64]). Moreover, this author points out that the examiner's assertion that, "one of ordinary skill . . . would have known that treatment of diabetic ulcers was intended," does not resemble any doctrine in the anticipation inquiry.

The rationale of "motivation to combine" is the most frequently asserted rationale that is used by examiners, accounting for 85-90% of the various rationales that are available when imposing a §103-rejection.[65] It could be argued that the examiner's comment, "discloses the claimed invention and **one of ordinary skill . . . would have known that treatment of diabetic ulcers was intended**,'" invokes the obviousness doctrine of "common sense." According to the MPEP,[66] "More recently [in *DyStar Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356, 1366 (Fed. Cir. 2006)], we explained that use of common sense does not require a 'specific hint or suggestion in a particular reference,' only a reasoned explanation that avoids conclusory generalizations." Alternatively, it could be argued that the examiner's statement takes the form of a conclusory rationale. The cited law review article provides several examples of rationales to combine that are conclusory.[67] Thus, whether the examiner's statement could be viewed as an assertion of: (1) A motivation to combine; (2) The rationale of "common sense;" or (3) A conclusionary rationale, this author contends that the examiner's statement invokes the obviousness inquiry.

Where an examiner had imposed an anticipation rejection, where the examiner had based the rejection on a doctrine from the obviousness inquiry, this author suggests that the attorney or agent complain that the rejection had not been properly asserted and that, as a consequence, that the rejection may properly be withdrawn and the claim allowed.

An interesting feature of the obviousness inquiry, is that obviousness is occasionally based on only one prior reference, instead of the more usual basis of two or three prior art references. In fact, *Sibia Neurosciences, Inc. v. Cadus Pharmaceutical Corp*.[68] states that, "In appropriate circumstances, a single prior art reference can render a claim obvious." Moreover, as part of this commentary on single prior art references, *Sibia Neurosciences, Inc. v. Cadus Pharmaceutical Corp.* also states that, "there must be a showing of . . . motivation . . . in order to support the obviousness conclusion . . . [t]his . . . motivation may be derived from the prior art reference itself."[69]

Returning to the fact-pattern of *Ex parte Tannenbaum*[70] it should now be more apparent that the examiner had inadvertently invoked a concept plucked from a doctrine of the obviousness inquiry.

In this article, the materialization of doctrines from the obviousness inquiry

[64] *In re* Kahn, 441 F.3d 977 (Fed. Cir. 2006).

[65] Tom Brody, *Obviousness in Patents following the U.S. Supreme Court's Decision of* KSR International Co. v. Teleflex, Inc., 92 J. Pat. & Trademark Off. Soc'y 26 (2010).

[66] Manual of Patent Examining Procedure (MPEP) § 2141. Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 (Rev. August 2017).

[67] Tom Brody, *Rebutting Obviousness Rejections by way of Anti-Obviousness Case Law*, 99 J. Pat. & Trademark Off. Soc'y 192 (2017).

[68] Sibia Neurosciences, Inc. v. Cadus Pharmaceutical Corp., 225 F.3d 1349, 1356 (Fed. Cir. 2000).

[69] *Id.*

[70] *Ex parte* Tanenbaum, Ser. No. 13/311,675, May 25, 2016.

in §102-rejections is shown above for *Ex parte Tannenbaum*[71] and is shown elsewhere in this article for *Ex parte Flood*,[72] *Ex parte Sun*,[73] and *Ex parte Wittorf*.[74] Where a rejection under 35 U.S.C. § 102 relies on any doctrines from the obviousness inquiry, the attorney or agent should consider drafting a rebuttal argument that a *prima facie* case of anticipation was not properly asserted and that the grounds for rejection have been overcome.

F. EMBODIMENTS DISCLOSED BY BACKGROUND OF THE INVENTION SECTION AND INFORMATION LABELED AS "AN EMBODIMENT"

Ex parte Ludwig[75] reveals the situation where inventor observed that the basis of rejection was combining information from the "Background of the Invention" section with information from "An embodiment." The rebuttal argument succeeded in overcoming the rejection and, in accepting the inventor's position, the Board referred to the Suzuki prior art reference and wrote, "Although Suzuki does discuss MIDI . . . this passage merely describes the background of the invention."

Ex parte Mohan,[76] which is also described below, discloses the situation where the inventor's rebuttal argument failed. The inventor had argued that the information from the two remote locations in the prior art reference were not related to each other and that, in applying *Net MoneyIN*, the rejection must be reversed. Unfortunately for the inventor, the Board was able to establish that the information from these two remote locations were related. The Board established that they were related because, the information in the "Background of the Information" section "introduces the concept," and because information in the embodiment from the "Detailed Description" section, "discloses a working example of the concept."

The take-home lesson is that, in embarking on a rebuttal argument, the attorney or agent might consider scrutinizing information from two remote locations in the prior art reference to see if they are related to each other where, for example, relatedness can be based on the first location disclosing a concept and the second location showing application of that same concept.

1. *Ex parte Ludwig*.

In *Ex parte Ludwig*[77] the §102-rejection was based on combining information from these two locations in the prior art patent:

- One particular embodiment of the prior art invention; and

[71] *Ex parte* Tanenbaum, Ser. No. 13/311,675, May 25, 2016.
[72] *Ex parte* Flood, Appeal. No. 2017-004571, Ser. No. 14/270,949, October 23, 2017.
[73] *Ex parte* Sun, Appeal No. 2015003994, Ser. No. 12/861,844, September 6, 2016.
[74] *Ex parte* Wittorf, Appeal No. 2014-006268, Ser. No. 11/919,958, February 19, 2016.
[75] *Ex parte* Ludwig, Appeal No. 2009-002201, Ser. No. 09/812,400, November 10, 2009.
[76] *Ex parte* Mohan, Appeal No. 2014-008922, Ser. No. 12/495,617, June 1, 2016.
[77] *Ex parte* Ludwig, Appeal No. 2009-002201, Ser. No. 09/812,400, November 10, 2009.

- Background information.

Ex parte Ludwig concerned a Musical Instrument Digital Interface (MIDI). MIDI allows notes played on a keyboard to be transcribed as sheet music. Also, MIDI can automatically create a musical accompaniment to a song or a tune. When a user plays a keyboard, MIDI records which key was pressed, and the velocity and duration used when the key is pressed.[78] The claim under review read:

> Claim 30. A control signal processing system for responsively generating MIDI control signals, said system comprising:
> an incoming control signal **interface** adapted to receive an incoming MIDI control signal;
> a controllable **low frequency oscillator** comprising **at least one parameter**, said **at least one parameter** comprising a value selectable from a plurality of values, wherein said value of said **at least one parameter** is determined by said incoming MIDI control signal, and wherein said controllable **low frequency oscillator** is adapted to generate an outgoing MIDI control signal responsive to said value of said **at least one parameter**; and
> an outgoing control signal interface adapted to communicate said outgoing MIDI control signal. (emphasis added)

The claim was rejected as anticipated by U.S. Pat. No. 5,981,859 to Suzuki.

The examiner alleged that the "interface" of the claim was disclosed by Suzuki's "performance event generator (11) and network interface (56)." Also, the examiner alleged that the "low frequency oscillator (LFO)" of the claim was disclosed by Suzuki's LFO (17). Moreover, the examiner alleged that the "parameter" required by the claim was disclosed by Suziki's "performance event generator (11) and the tone color information generator (12)." Suzuki's generators determine the value of the parameter.

The Board's analysis focused on Suzuki's FIG. 2 and on writing in Suzuki's "Background of the Invention" section (see, Suzuki, Col. 1, lines 3547). A view of the Suzuki reference reveals that it describes FIG. 2 as a "multitone generator" (Col. 2, lines 1718, Col. 3, lines 3435). Regarding the claim element requiring, "MIDI control signals," the examiner argued that this claim element was disclosed by Suzuki's FIG. 2.[79]

Unfortunately for the examiner, the Board found that the examiner's basis for rejection to be unreasonable, writing, "Moreover, the examiner . . . asserts that all electronic keyboards would have this [MIDI] interface . . . [s]uch an assertion is simply unreasonable."

The Board turned to the MIDI interface disclosed in Suzuki's Col. 1 (lines 4145), which read, "In order to realize such performances . . . a plurality of tone generators of different types are interconnected via musical instrument digital interface (MIDI)." The Board observed that this particular disclosure was

[78] Wang et al., *An automatic signing transcription system with multilingual singing lyric recognizer and robust melody tracker*, Paper presented at the meeting of the INTERSPEECH, 2003 (pp. 1197-1200); Cogliati et al., *Transcribing human piano performances into music notation*, Proceedings of the 17th ISMIR Conference, New York City, August 7-11, 2016 (pp. 758-164).

[79] Examiner's Answer, Ser. No. 09/812,400, April 15, 2008.

located in the "Background of the Invention" section of the Suzuki reference, and thus was preventable, under the rule of *Net MoneyIN*, to be combined with Suzuki's FIG. 2, when asserting a rejection under 35 U.S.C. §102. An excerpt demonstrating that this disclosure of MIDI was in the Background of the Invention section is demonstrated below:

BACKGROUND OF THE INVENTION

a) Field of the Invention

The present invention relates to musical tone signal generating techniques, and more particularly to techniques of generating musical tone signals by using a plurality of tone generators (sound sources) of different types.

. . . . .

As above, each tone generator generates some tone colors excellently but some tone colors poorly. If a tone generator superior to generating musical tones of a particular tone color is selectively used, it is possible to make musical performance with fine melody sounds of a musical piece or with substantial accompaniment sounds. In order to realize such performance with conventional techniques, a plurality of tone generators of different types are interconnected via musical instrument digital interface (MIDI) to configure an integrated tone generator system mixed with a plurality of tone generators. However, in this case, the physical scale of the system becomes bulky and the system becomes expensive.

After assessing the best possible basis for imposing an anticipation rejection, the Board determined that there did not exist any valid basis, writing, "Although Suzuki does discuss MIDI . . . this passage merely describes the background of the invention." Then, the Board detected another disclosure of MIDI in the Suzuki reference, but then discovered that it was, "directed to a different embodiment than the multitone generator of Figure 2." The Board reversed, citing only *Net MoneyIN* and *In re Arkley* as the applicable case law.

Ex parte Ludwig demonstrates that an effective rebuttal can be based on arguing that the rejection had been based on combining information from two different locations in a prior art patent, where one location was from the Summary of the Invention section and the other location was from the Background of the Invention section. Please note that, in general, the Summary of the Invention section describes one of the working embodiments or prophetic embodiments of the invention as set forth in the claims while, in contrast, the Background of

the Invention section does not describe any one of the working embodiments or any one of the prophetic embodiments.[80]

2. *Ex parte Mohan.*

Ex parte Mohan[81] concerned method to steps for evaluating and identifying information using a computer. The claim was as follows. In reproducing the claim, the Board added the writing, "**[L1]**" to identify claim elements alleged to be disclosed by para. 0007 of the cited prior art reference, and by writing, "**[L2]**" to identify claim elements allegedly disclosed by para. 0044 of the prior art reference. The claim read:

> Claim 1. A computer-implemented method to present a related item, the method comprising:
> **[Ll]** *evaluating a first item to determine a cluster identifier of an existing cluster;*
> accessing via a hardware-implemented module the cluster identifier based on the evaluation of the first item,
> the cluster identifier identifying a cluster of items that represents a plurality of items identified based on a query expression that defines membership in the cluster of items;
> accessing a data structure that associates the cluster identifier with a second item in the cluster of items;
> **[L2]** *identifying the second item based on the data structure and based on the cluster identifier;* and presenting the second item as the related item.

The claim was rejected as anticipated by US2008/0133479 of Zelevinsky. The main issue provided by this opinion was assessing if information in two different sections of the prior art patent were related or were not related. To this end, the opinion stated, "As a threshold issue, we decide the question of whether the examiner erred by improperly relying on a combination of unrelated embodiments with the Zelevinsky reference to show anticipation."

The inventor's rebuttal strategy was to argue that the rejection was based on combining information from the "Background of the Invention" section (para. 0007) with information from the "Detailed Description" section (paras. 0044-0045) of the Zelevinsky reference.

The Board disagreed with the inventor's argument, reasoned that they were "directly related" to each other, and observed that, "Paragraph 7 . . . is a summary of search results assigned to clusters. We find paragraph 7 covers the . . . search example described in paragraphs 44 and 45, which groups the

[80] **MPEP §608.01(c) Background of the Invention** states that, "The Background of the Invention may . . . include the following parts: (1) Field of the Invention: A statement of the field of art to which the invention pertains . . . [t]he statement should be directed to the subject matter of the claimed invention. (2) Description of the related art . . . paragraphs describing . . . other information disclosed known to the applicant, including references to specific prior art or other information where appropriate. Where applicable, the problems involved in the prior art or other information disclosed which are solved by the applicant's invention should be indicated."

[81] *Ex parte* Mohan, Appeal No. 2014-008922, Ser. No. 12/495,617, June 1, 2016.

associated "salient terms" for the search result "set of articles into clusters," and is, therefore, ***directly related***." (emphasis in original)

The Board refused the inventor's rebuttal argument, solely on *Net MoneyIN*, and quoted *Net MoneyIN*'s rule about, "picking, choosing, and combining various disclosures ***not directly related***." (emphasis in Board's opinion) The Board's technique for establishing that information from the "Background of the Invention" section (para. 0007) was, in fact, directly related to information from the "Detailed Description" section (para. 0044), was its observation that:

- Para. 0007 "introduces the concept"
- Para. 0044 "discloses a working example of the concept"

Zelevinsky's para. 0007, in its entirety, is as follows. The phrase that is emphasized here in **bold font** was, according to the Board, a disclosure of the relevant concept:

> [0007] Typically, search results are clustered into a partition, disjoint or otherwise, or into a hierarchical tree structure. In the case of a partition, each one of the **search results is assigned to one or more groups of results, also known as clusters.** Results assigned to the same cluster are presumed to be more similar than results assigned to distinct clusters. In the case of a hierarchy, the clusters are themselves broke§103rejectionn up into clusters.

Zelevinsky's para. 0044, in its entirety, is as follows. The phrase that is emphasized here in **bold font** was, according to the Board, a disclosure of application of the concept by way of a working example of that concept:

> [0044] The system, receiving the search term "java", will obtain an original **result set of articles that all include the exact term "java."** The system will group the associated salient terms for the set of articles into clusters. In general, the clusters suggest the topical segmentation of the result set. These clusters will typically correspond to the primary meanings of the search term; in this case, "java" as (1) an island, (2) a programming language, and (3) a synonym for coffee. Where, by way of example, the salient terms obtained from the original result set include applet, arabica, Bali, computer, coffee, drink, espresso, Indonesia, island, Jakarta, language, and Sun Microsystems, the following clusters are obtained: Cluster 1: Indonesia, island, Bali, Jakarta; Cluster 2: computer, language, Sun Microsystems, applet; Cluster 3: coffee, drink, espresso, arabica.§103-rejection

The Board reversed. The take-home lesson is that the attorney or agent might consider scrutinizing information from two remote locations in the prior art reference to see if they are related. For example, relatedness may be established where the first location discloses a concept and the second location shows a working example that applies that same concept. Where this particular scrutiny shows that the two remote locations are arguably related, then the

attorney or agent should consider drafting an alternate type of rebuttal argument.

G. DISTINCTION BETWEEN A "GENERAL STATEMENT" AND AN EMBODIMENT

The following opinion discloses the concept of a "general statement" regarding the invention, and the successful rebuttal argument that information located in a "general statement" cannot be combined with information in an embodiment, as a basis for a §102-rejection. A "general statement" is not the same thing as background information.

1. *Ex parte Bourret.*

Ex parte Bourret[82] reveals the situation where "picking and choosing" was from: (1) An embodiment of the invention; and (2) A general statement about the invention. The opinion reveals that where an inventor can argue that a paragraph of information takes the form of a "general statement," a successful rebuttal under *Net MoneyIN* may be at hand.

The claim was to a method for adjusting the automatic pilot of an airplane. The claim read (emphasis added):

> Claim 1. A method for aiding piloting of an airplane by ensuring availability of an automatic pilot that is normally controlled as a function of speed information of the airplane when the speed information is lost, the method comprising:
>
> detecting a loss of the speed information of the airplane; and
>
> in response to the detection of the loss of the speed information of the airplane: determining flight data of the airplane, the flight data being independent from the speed information of the airplane;
>
> determining a plurality of control parameters from the flight data; and
>
> **controlling the automatic pilot based on the control parameters and without the speed information of the airplane**,
>
> wherein the automatic pilot comprises an automatic piloting system or a flight director.

The claim was rejected as anticipated by US2008/0125923 of Chesne. The issue was whether the Chesne reference disclosed the following claim element: "controlling the automatic pilot based on the control parameters and without the speed information of the airplane." The examiner alleged that this claim element was disclosed by the combination of Chesne's:

- Para. 0008. This paragraph does not include any figure numbers.
- Para. 0033. This paragraph refers to FIG. 3.
- Para. 0037. This paragraph refers to FIG. 4.

[82] *Ex parte* Bourret, Appeal No. 2016-001504, Ser. No. 13/400,362, February 2, 2017.

a. Information located in para. 0033 is about a distinct embodiment. A view of para. 0033 reveals that it concerns FIG. 3, which shows a distinct embodiment of the Chesne invention. Para. 0033 reads, in part, "FIG. 3 illustrates a case where there is a problem in detecting the altitude of the airplane." A view of para. 0037 reveals that it concerns FIG. 4. Para. 0037 describes structures in FIG. 4, such as, "The standby system comprises . . . at least one total pressure sensor **41** and a static pressure sensor **42**."

b. Information located in para. 0008 takes the form of a "general statement." Turning to para. 0008, it can be seen that it does not recite any figure numbers or structure numbers. Para. 0008, in its entirety, reads:

> **[0008]** The standby instrument can also send information externally, in particular to the automatic pilot. In practice, since it generates some of the information itself that it displays, it can supply this information to other systems incorporated in the airplane. In particular, the automatic pilot needs reliable information. As an example, an airplane comprises at least two inertial units. However, they can fail or deliver false information. In this case, the standby instrument can take over from the failed unit and/or indicate which of the two units is supplying the right information. For an automatic pilot, it is therefore particularly important to have at least three sources of information for one and the same parameter.

c. Reversal. The Board decided that the para. 0008 disclosure was a "general statement." On this point, the Board wrote, "but Chesne's **general statement** that . . . the standby instrument can also send information externally, in particular, to the automatic pilot" . . . does not disclose controlling the automatic pilot based on such information in response to a loss of speed information, as claimed . . . [w]hile Chesne may suggest that the automatic pilot can control an airplane based on parameters from a backup instrument, Chesne does not disclose . . . all of the limitations . . . arranged in the same way as in the claim." (emphasis added)

On the basis that para. 0008 took the form of a "general statement," the Board reversed the rejection, citing *Net MoneyIN*. The take-home lesson is that if a particular paragraph in the prior art reference does not contain any figure numbers or other indicia of a specific embodiment, then it may be possible to argue that the information in that paragraph cannot be combined with information in another location of the same prior art reference, as a basis for anticipation.

H. DISTINCT EMBODIMENTS DISCLOSED BY AN EXAMPLE AND BY A CLAIM IN THE PRIOR ART REFERENCE

I. *Ex parte de Rodas.*

Ex parte de Rodas[83] concerned a method for feeding a sugar alcohol (sorbitol) to a mother pig (a lactating sow) and allowing piglets to nurse from the mother pig. The methods claim did not require that the steps in the claim be performed in any particular order. The claim read:

"Claim 1. A method of feeding . . . lactating sow sugar alcohol . . . the sugar alcohol comprising sorbitol and the . . . lactating sow ingesting at least about fifty grams of sugar alcohol per day . . ."

The claim was rejected as anticipated by U.S. Pat. No. Reissue 35,699 of Lange. The Board's analysis focused on whether the Lange reference disclosed the claim's requirement that the mother pig eat, "at least about fifty grams of sugar alcohol per day." The examiner argued that the Lange reference disclosed that the mother pig eat, "at least about fifty grams of sugar alcohol per day," referring to two different locations in the Lange reference, Example 6 and Claim 7. Example 6 is reproduced, in part, below. As can be seen, Example 6 discloses that, "sows in the test group received a supplement of 3% sorbitol," but there was not any disclosure of how much of this supplement was eaten by the sows.

[83] *Ex parte* De Rodas, Appeal No. 2010-005822, Ser. No. 10/349,743, February 10, 2011.

EXAMPLE 6

Transfer of FIl to new-born piglets after stimulation of FIL formation of sows which had received FIL-inducing feed. The levels of FIL in colostrum and in the blood of the piglets were assayed. The standard feed contained the amino acids lysine 0.09% and methionine 0.02%.

TABLE VIII

	Test	Control
Number of liters	5	5
Number of piglets	52	52
Diarrhea, % 1–7 days of age	19	35
Level of FIL, units/ml		
Piglets, blood at day 2	0.8	<0.1
Colostrium, day 2	0.7	<0.1

TABLE IX

	Test	Control
Number of sows	6	6
Level of FIL, units/ml		
Colostrum, day 2	0.8	<0.1

Tables VIII and IX show the content of FIL (mean) in colostrum 2 days after deliver. Table VIII also shows the FIL level in blood plasma of 2 days old piglets. The sows in the test group received a supplement of 3% sorbitol (Table VIII) or 3% sucrose plus 0.7% lysine (Table IX) from 7 days before until 6 days after the delivery; the piglets received colostrum only. The sows in the control group received a

Turning to Claim 7 of the Lange reference, it can be seen that this claim discloses an amount of sorbitol that is eaten per day by the sow (0.7-1.2 grams of sorbitol to the sow, per kilogram of body weight).

7. A process according to claim 1 which comprises daily feeding a sow a feed composition which will provide the animal per kilogram of body weight with 0.7–1.2 grams of at least one material selected from the group consisting of sorbitol and saccharose as well as 0.01–0.06 grams of lysine and/or 0.002–0.02 grams of methionine.

30

The Board complained about the examiner's use of two different locations of the Lange reference, writing that, "Thus, because the two portions of the Lange relied on by the examiner to meet the limitations of Claim 1 . . . are not part of a single . . . disclosure, we are not persuaded that Lange meets all of the features of Claim 1." The Board reversed, citing only *Net MoneyIn* and *In re Arkley* as the case law used as a basis for reversal.

III. PICKING AND CHOOSING FROM LISTS

The following PTAB opinions demonstrate that §102-rejections are sometimes based on selecting a chemical or other substance from a list of different chemicals or of different substances. These opinions include *Ex parte Abad*,[84] *Ex parte Farcet*,[85] *Ex parte Fleischer*,[86] *Ex parte Goldenberg*,[87] *Ex parte Goldstein*,[88] *Ex parte Kuhmann*,[89] and *Ex parte Walsh*,[90] as detailed below. In these opinions, the Board applied *Net MoneyIN* to reverse §102-rejections based on selecting a chemical or other substance from a list.

One of the goals of this article is to demonstrate that examiners sometimes use doctrines from the obviousness inquiry, when imposing a rejection under 35 U.S.C. § 102. Of course, when a doctrine from the obviousness inquiry is used in a §102-rejection, the attorney or agent should consider arguing that a *prima facie* case of anticipation had not been established. For this reason, this article describes some of the doctrines from the obviousness inquiry that might be mistakenly used by the examiner in imposing rejections under 35 U.S.C. §102.

Obviousness rejections are sometimes based on the examiner's behavior of selecting chemical or other substance from a list. The term "laundry list" is sometimes used by the attorneys and by the Federal Circuit to refer to lists, especially very lengthy lists, that reside in a prior art reference. Obviousness rejections with this basis, may be overcome by a small body of applicable case law, *In re O'Farrell*, 853 F.2d 894 (Fed. Cir. 1988), *Medichem S.A. v. Rolabo S.L.*, 437 F.3d 1157 (Fed. Cir. 2006), *Merck & Co., v. Biocraft Labs., Inc*., 874 F.2d 804 (Fed. Cir. 1989). A review article is available on laundry list-type arguments for

[84] *Ex parte* Abad, Appeal No. 2011-000555, Ser. No. 11/982,799, June 15, 2011.
[85] *Ex parte* Farcet, Appeal No. 2014-005898, Ser. No. 11/628,954, May 16, 2016.
[86] *Ex parte* Fleischer, Appeal No. 2014-008437, Ser. No. 13/094,965, July 22, 2016.
[87] *Ex parte* Goldenberg, Appeal No. 2011-0002484, Ser. No. 11/534,124, June 28, 2011.
[88] *Ex parte* Goldstein, Appeal No. 2010-006562, Ser. No. 10/691,928,
[89] *Ex parte* Kuhmann, Appeal No. 2016-000186, Ser. No. 13/639,765, June 19, 2017.
[90] *Ex parte* Walsh, Appeal No. 2017-002141, Ser. No. 13/698,412, September 26, 2017.

use in rebutting obviousness rejections.[91] Thus, it is the case that obviousness rejections are often based on selecting one chemical from a list, and it is the case that rebutting this type of obviousness rejection can be based on cases such as *In re O'Farrell* and *Medichem S.A. v. Rolabo S.L.*

Arguments relating to "laundry lists" can be used to rebut §103-rejections, as demonstrated by the cited law review article,[92] and can also be used to rebut §102-rejections, as demonstrated below.

1. *Ex parte Abad.*

Ex parte Abad[93] concerned a claim to a genetically modified seed. The seed was modified by adding a new gene to the seed's chromosome. Planting the genetically modified seed resulted in a plant with a chromosome containing the new gene. The claim required that the gene encoded a protein that improves plant growth. The claim required that the DNA sequence of the gene have the protein sequence of SEQ ID No. 481. This particular type of nomenclature (sequence identification numbers) is standard in the Patent Office for referring to DNA sequences and to polypeptide sequences. The Specification of the inventor's patent revealed that SEQ ID No. 481 was a gene that was discovered in a weed and isolated from that weed. The weed is Arabidopsis thaliana. The claim read:

> Claim 15. A transgenic seed for a crop plant, wherein the genome of said transgenic seed comprises a recombinant DNA which expresses a protein having amino acid sequence of at least 90% identity to SEQ ID No. 481, wherein transgenic plants grown from said seed express increased yield.

The claim was rejected as anticipated by US2006/0150283 of Alexandrov. The examiner observed that a polypeptide sequence disclosed by the Alexandrov reference was **identical to the polypeptide sequence (SEQ ID No. 481)** that was required by the claim. On this point, the examiner wrote, "Alexandrov discloses a method of producing a transgenic plant cell . . . comprising . . . a nucleic acid sequence . . . encoding a polypeptide (SEQ ID No. 66495) which has **100% sequence identity** to instant SEQ ID No. 481."[94]

To provide some background information using the example of polypeptides, the following two polypeptides have *identical sequences*:[95]

> **1st sequence:** Methionine-Serine-Tyrosine-Asparagine-Tyrosine-Valine-Valine-Threonine-Alanine
> **2nd sequence:** Methionine-Serine-Tyrosine-Asparagine-Tyrosine-Valine-Valine-Threonine-Alanine

[91] Tom Brody, *Categories of Anti-Obviousness Case Law: (1) Laundry Lists; (2) Redundant Advantages; and (3) Advantage Not Needed and Not Relevant*, 17 J. Marshall Rev. Intell. Prop. L. 1 (2018).

[92] Tom Brody, *Categories of Anti-Obviousness Case Law: (1) Laundry Lists; (2) Redundant Advantages; and (3) Advantage Not Needed and Not Relevant*, 17 J. Marshall Rev. Intell. Prop. L. 1 (2018).

[93] *Ex parte* Abad, Appeal No. 2011-000555, Ser. No. 11/982,799, June 15, 2011.

[94] Examiner's Answer, Ser. No. 11/982,700, June 25, 2010.

[95] The sequences are from a DNA repair protein that was cloned by the author. See, Brody T, Keeney S, and Linn S (1995) Human damage-specific DNA binding protein p48 subunit mRNA, GenBank Accession No. U18299.

In contrast, the following example is of two polypeptides that have *nonidentical sequences*:

> **1st sequence:** Methionine-Glycine-Tyrosine-Asparagine-Tyrosine-Valine-Valine-Threonine-Alanine
> **2nd sequence:** Methionine-Serine-Tyrosine-Asparagine-Tyrosine-Valine-Valine-Threonine-Alanine

The Board referred to the prior art's short list of different plants and to the prior art's huge list of different plant genes. The short list of different plants read: "fragments of the genome of corn, wheat, rice, soybean, Arabidopsis." The Board referred to para. 0528 of this short list in the Alexandrov reference, which reads, "Exemplified . . . DNA fragments of the invention represent fragments of the genome of corn, wheat, rice, soybean, or Arabidopsis." Regarding the huge list of genes, the Board states that this list was found in Alexandrov's para. 0009. A view of para. 0009 reveals that it reads, "over one hundred thousand gene, gene components." Para. 0009 is reproduced below:

> **[0009]** Applicants have isolated and identified over one hundred thousand genes, gene components and their products and thousands of promoters. Specific genes were isolated and/or characterized from *arabidopsis*, soybean, *maize*, wheat and rice. These species were selected because of their economic value and scientific importance and were deliberately chosen to include representatives of the evolutionary divergent dicotyledonous and monocotyledonous groups of the plant kingdom.

The Board described the examiner's behavior of picking and choosing as, "The examiner's reasoning . . . is that **if one chooses that DNA sequence** from the various . . . fragments of the genome of corn, wheat, rice, soybean, and Arabidopsis . . . or **from the . . . over one hundred thousand . . . gene components . . .** disclosed by Alexandrov . . . the result would be transgenic seed with the scope of Claim 15." (emphasis added)

The Board further emphasized the fact that the rejection was based on picking and choosing, writing, "The examiner's rejection relies on combining different teachings . . . to meet the limitations of Claim 15. The examiner has not pointed to any . . . disclosure in . . . Alexandrov . . . that actually expresses a protein of SEQ ID No. 481 . . . [i]n short, the examiner's rejection relies on "picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference,"" The Board reversed, and cited *In re Arkley* for its rule against "picking and choosing."

Ex parte Abad is truly exemplary in that three types of picking and choosing had been used by the examiner in alleging that the Alexandrov reference disclosed all of the elements of the claim:

- Choosing Arabidopsis from the short list of plants

- Choosing SEQ ID No. 481 from the long list of plant genes
- Choosing the short list paragraph and the long list paragraph out of the entire Alexandrov reference. The Alexandrov reference contained one thousand and thirty different paragraphs

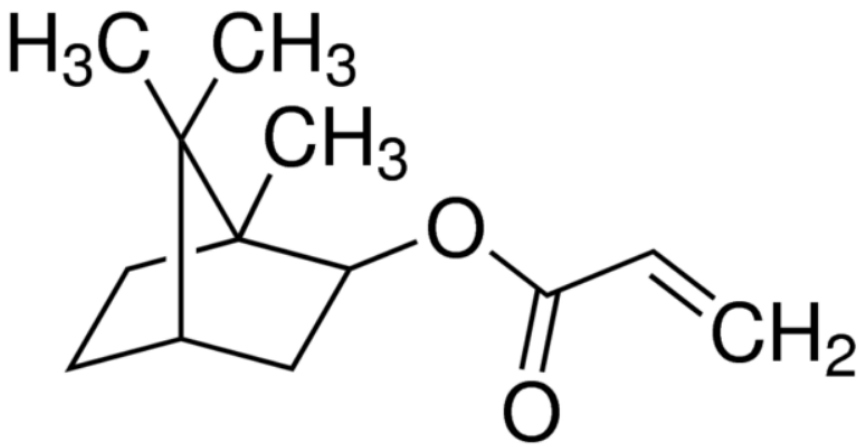
The following explains the nature of the Alexandrov reference's disclosure of SEQ ID No. 481 along with many other plant sequences. At the end of the patent's Specification and immediately before the claim set, is an explanation that all of the sequences can be accessed at a website that is maintained by the Patent Office.[96]

2. *Ex parte Farcet.*

Ex parte Farcet[97] shows a basis of rejection that involved "picking and choosing" from two different lists, and where picking and choosing was used to select a chemical from one list, while refraining from choosing any chemical from the other list. The opinion concerned a copolymer, where the claim required that one or both of the polymers in the copolymer contain at least two monomers from a group of five different monomers. The claim read (emphasis added):

> Claim 34. A **gradient copolymer** comprising at least two different monomers chosen from **isobornyl acrylate**, isobornyl methacrylate, isobutyl acrylate, isobutyl methacrylate, and **2-ethylhexyl acrylate**.

To provide an example of one of these monomers, structure of isobornyl acrylate is shown below:



a. Background information on copolymers. Copolymer is defined here, by way of diagrams showing how two monomers of two different chemical struc-

[96] http//seqdata.uspto.gov
[97] *Ex parte* Farcet, Appeal No. 2014-005898, Ser. No. 11/628,954, May 16, 2016.

tures can be strung together to form the copolymer.[98] The letter "A" represents one kind of monomer (one small molecule) and the letter "B" represents another kind of monomer (another small molecule). This identifies three different types of copolymers:

> Random copolymer can be: A-A-A-B-A-B-B-A-A-B-B-B-A-
> Alternating copolymer can be: A-B-A-B-A-B-A-B-A-B-A-B-
> Block copolymer can be: A-A-A-A-A-B-B-B-B-B-A-A-A-A-A-B-B-B-B-B-

The Specification of the inventor's patent application defines "gradient copolymer" as, "Gradient copolymers are copolymers exhibiting a change in the ratio of the various monomers all along the chain of the distribution in the polymeric chains . . . depends on the change, during synthesis, in the relative concentrations of the . . . monomers."[99]

b. The prior art. The claim was rejected as anticipated by US2003/0208012 of Mathew.

c. Picking and choosing from a list of monomers. A view of the Mathew reference reveals that para. 0042 discloses two of the monomers that are required by the claim, namely, **isobornyl acrylate** and **2-ethylhexyl acrylate**. Mathew's list in para. 0042, reproduced below, reveals that "isobornyl acrylate" and "2-ethylhexyl acrylate" occurs in list of about 26 different monomers, demonstrating that the examiner had to engage in "picking and choosing" from this list to select isobornyl acrylate and 2-ethylhexyl acrylate.

[0042] Specific monomers include the followings: acrylic acid and its salts, acrylates, methacrylic acid and its salts, methacrylates, acrylonitriles, styrenes, acrylamides, butadiene, isoprene or mixtures thereof. Representative examples include methyl acrylate, ethyl acrylate, propyl acrylate (all isomers), butyl acrylate (all isomers), 2-ethylhexyl acrylate, 2-hydroxyethyl acrylate, isobornyl acrylate, acrylic acid, benzyl acrylate, phenyl acrylate, acrylonitrile, styrene, N,N-dimethylaminoethyl methacrylate, methacrylamides, acrylamides, N-isopropyl acrylamide, methyl methacrylate etc.

d. Disclosure in Mathew reference of "gradient copolymer" occurs in a list. Para. 45 of Mathew, reproduced below, shows that "gradient polymers" occurs

[98] Glossary of Polymer Terms (2011) Technical Brief 2011. Volume 1. Particle Sciences Drug Development Services. Bethleham, PA.

[99] See, page 6, line 37 to page 7, line 18, of the Specification of Ser. No. 11/628,954, as filed on December 8, 2006.

in a list of five different types of copolymers, and demonstrates that the examiner had to engage in "picking and choosing" to select "gradient polymers" from this list:

> **[0045]** Using the present invention, the polymer obtained can be a homopolymer or a copolymer. Various copolymers with a well-defined structure can be obtained, including (1) block copolymers (two or more blocks) with narrow polydispersity, (2) graft copolymers with narrow polydispersity, (3) gradient copolymers, (4) star copolymers, and (5) hyperbranched copolymers. Various polymers with a terminal

e. Picking and choosing from the disclosure of homopolymers versus from the list of copolymers. The Board referred to the Mathew reference's disclosure many homopolymers and many copolymers, and complained that the examiner had engaged in "picking and choosing" to select **gradient copolymer** from the Mathew reference. Also, the Board complained that the examiner had engaged in "picking and choosing" to arrive at the monomers required by the claim.

The Board's complaint was, "Rather, we find, as Applicant contends, that in order to arrive at the claimed invention from Mathew's disclosure, one would have to . . . select a copolymer rather than a homopolymer, despite all of the examples being directed to a homopolymer (Mathew, paras. 58-74 (Examples 6-17), select a gradient copolymer from the list of copolymers . . . (Mathew para. 45), and . . . select the claimed monomers from the large list of monomers described by Mathew."

f. Reversal. The Board reversed, writing that, "The picking and choosing suggested by the examiner . . . is unsupported, where there is a lack of direction in Mathew to make any one of the selections noted above. *In re Arkley*, 455 F.2d 586, 587-88 (CCPA 1972). The opinion also cited *Net MoneyIN* for its rule that, "it is not enough that the prior art includes multiple, distinct teachings that . . . might somehow combine to achieve the claimed invention."

3. *Ex parte Fleischer.*

Ex parte Fleischer[100] provides the fact-pattern that involved picking and choosing a smaller subset from a larger set. In detail, the opinion discloses the situation where the prior art reference disclosed a large number of "rolls" while the claim required a small number of "rolls." The prior art reference disclosed that the number of rolls "includes at least 10 rolls" while, in contrast, the claim

[100] *Ex parte* Fleischer, Appeal No. 2014-008437, Ser. No. 13/094,965, July 22, 2016.

required, "wherein the total number of rolls . . . is less than ten." The rejection was on picking and choosing this small number of rolls from the prior art's large number of "at least 10 rolls."

The opinion concerned an "ink station" for a can decorating machine. The claim required that the ink station include:

- "an ink fountain"
- "a fountain roll . . . to receive ink from the ink fountain"
- "a distributor roll"
- "a ductor roll . . . to transfer said ink from the ink fountain"
- "a number of oscillator rolls"
- "a number of transfer rolls"
- "wherein the total number of rolls . . . is less than ten"

a. Nature of the prior art's disclosure of the claim element. The claim was rejected as anticipated by Applicant's Admitted Prior Art (AAPA). This AAPA took the form of writing and a figure in the Specification of the inventor's own patent application.[101] The alleged anticipating disclosure in the inventor's own Specification took the form of the writing, "the prior art ink station assembly . . . includes at least 10 rolls." A view of the inventor's Specification, as originally filed, reveals that it recites, "it will be appreciated that the roll configuration of the [present invention] . . . is improved compared to prior art ink station assemblies." The Specification went on to disclose that the present invention has, "a total of nine rolls . . . [t]his is one less roll than the prior art ink station . . . which . . . includes at least 10 rolls."[102]

b. Category of laundry list-type disclosure involving a set and subset. The opinion used the term "subset" to refer to the examiner's behavior of picking and choosing a smaller subset from the prior art's larger set. The Board wrote, "We find the Examiner erred by **selectively citing to only a subset** of the rolls shown in AAPA: the prior art does not show an ink station assembly as claimed, as the prior art ink station assembly explicitly has at least 10 rolls." (emphasis added)

c. The reversal. The Board reversed, citing *Net MoneyIN* as the only case law relevant to the reversal. The take-home lesson is that attorneys and agents should be vigilant for §102-rejections based on choosing a subset from the prior art's disclosure of a set, because of the likelihood that this kind of rejection can be overcome using an argument based on *Net MoneyIN*.

[101] See, Specification (page 6, lines 1218) of Ser. No. 13/094,965 as filed on April 27, 2011.
[102] See, Specification (page 6, lines 1218) of Ser. No. 13/094,965 as filed on April 27, 2011.

4. *Ex parte Goldenberg.*

Ex parte Goldenberg[103] concerned a claim to a method for treating an autoimmune disease, where treatment was with an antibody that binds to "CD20." CD20 is a protein that is naturally located on the surface of white blood cells. In addition to requiring administering this anti-CD20 antibody, the claim also required administering a second drug that could be either anti-TNFalpha or anti-IL-1.

As background information, autoimmune diseases include multiple sclerosis, lupus, rheumatoid arthritis, and psoriasis. Autoimmune diseases are more common in women than in men. For example, America's sweetheart Annette Funicello had multiple sclerosis, and pop-singer Selena Gomez has lupus. TNFalpha and IL-1 are naturally occurring proteins that reside in the bloodstream. TNFalpha and IL-1 are proteins of the immune system, and they are used to transmit signals from one part of the body to another. TNFalpha and IL-1 are in a class of proteins called, "cytokines."

The claim read:

> Claim 1. A method of treating an autoimmune disease **. . .** comprising administering **. . . anti-CD20 antibody** which binds to human CD20 and an **anti-TNFalpha antagonist** or **anti-IL-1 antagonist**. (emphasis added)

The claim was rejected as anticipated by WO95/09652 of Feldmann.

a. Nature of the antibodies required by the claim. The Board's analysis focused on Feldmann's disclosure of two of the claim elements, "anti-CD20 antibody" and "anti-TNFalpha antagonist." Note that "anti-CD20 antibody" is an antibody that binds to CD20, where the result of this binding is blocking of the biological activity of CD20. Also, note that an "anti-TNFalpha antagonist" can be an antibody that binds to TNFalpha, where this binding blocks the biological activity of TNFalpha. For these antibodies, the result of the binding and blocking is relief from the autoimmune disease.

b. Nature of the laundry list of antibodies in the prior art reference. The Board observed that the Feldmann reference discloses "anti-CD20 antibody." The disclosure of "anti-CD20 antibody" took the form of Feldmann's recitation of, "antibodies to B cells **. . .** such as CD19, 20, 21, 23 ," which can be seen in the excerpt reproduced below. The number "20" which occurs in this excerpt means "CD20," and therefore it can be seen that this entire phrase constitutes a disclosure of an "anti-CD20 antibody," as is required by the claim.

c. The inventor's rebuttal argument invoked the concept of laundry lists. As part of the inventor's argument that the Feldmann reference did not anticipate the claim, the inventor wrote that, "the Feldmann specification provides a **long laundry list of antibodies** under the subject of $CD4^+$ T cell inhibiting

[103] *Ex parte* Goldenberg, Appeal No. 2011-0002484, Ser. No. 11/534,124, June 28, 2011.

agents."[104] (emphasis added) This "long laundry list of antibodies" is reproduced below in its entirety (Feldmann's page 6, lines 7-17). As can be seen, this particular list included one of the antibodies required by the claim (anti-CD20 antibody). The list was:

> presenting cells (APC). CD4+ T cell inhibiting agents include antibodies to T cells or to their receptors, such as anti-CD4, anti-CD28, anti-CD52 (e.g., CAMPATH-1H) and anti-IL-2R; antibodies to APC or to their receptors, such as anti-class II, anti-ICAM-1, anti-LFA-3, and anti-LFA-1; peptides and small molecules blocking the T cell/APC interaction, including those which block the HLA class II groove, or block signal transduction in T-cell activation, such as cyclosporins, particularly cyclosporin A, or FK-506; and antibodies to B cells including CD5+ B cells, such as CD19, 20, 21, 23 and BB/7 or B1, ligands for CD28,

d. Separate disclosure, in the prior art, of antiTNFα antagonists. The Board referred to a location in the Feldmann reference that disclosed antiTNFα antagonists (page 6, lines 23-31). Although this location resides immediately below Feldmann's laundry list that discloses anti-CD20 antibody (page 6, lines 7-17), Feldmann fails to mention that this laundry list has any connection or relation to the paragraph (page 6, lines 23-31) that discloses anti-TNFα antagonists. Feldmann's disclosure of anti-TNFα antagonists takes this form:

> The term "TNF antagonist", as used herein, refers to an agent which blocks, diminishes, inhibits, or interferes with TNF activity, TNF synthesis, or TNF receptors, such as anti-TNF antibody; soluble TNF receptor (monomeric receptor and/or fusion proteins comprising the receptor, such as receptor/IgG fusion proteins, etc.); and other appropriate peptides or small molecules, such as pentoxyfilline or other phosphodiesterase inhibitors, and thalidomide.

e. Reversal (picking and choosing from long list; picking and choosing from unrelated locations). The Board identified two different forms of "picking and choosing" that is, from a long list, and from two unrelated locations in the prior art reference. The Board concluded, "Feldman teaches, at separate locations throughout the reference, each of the elements of the claims, including anti-TNFα antibody and an anti-CD20 antibody . . . [h]owever, Feldmann does not teach a single composition with each of the claimed elements, but requires selection . . . from groups of disclosed compounds . . . [a]s stated in *In re Arkley*, an anticipatory reference under 35 U.S.C. § 102 . . . [m]ust clearly . . . disclose the

[104] *Ex parte* Goldenberg, Appeal No. 2011-0002484, Ser. No. 11/534,124, June 28, 2011.

claimed compound . . . without any need for picking and choosing, and combining various **disclosures not directly related to each other** by the teachings of the cited reference." (emphasis added)

f. Take-home lesson from *Ex parte Goldenberg*. One take-home lesson from *Ex parte Goldenberg*, is that is can be productive to argue that two different disclosures are unrelated to each other, even if the two disclosures reside in adjacent paragraphs. This argument is available, providing that the prior art reference is totally silent as to a possible relation between the two paragraphs. In the Feldmann reference, there was not any disclosure that the information in the first paragraph (page 6, lines 7-17) had any relation to information in the next paragraph (page 6, lines 23-31).

5. *Ex parte Goldstein.*

Ex parte Goldstein[105] concerned a drug for treating fungal infections of the skin. The claim required:

- "an antifungal compound"
- "**a low to low-medium potency steroidal anti-inflammatory** causing minimal skin atrophy, striae, and hypopigmentation, in a concentration between 0.01 wt% and 5.0 wt%, and having higher potency than 1 wt % hydrocortisone"
- "a carrier"
- "wherein the composition does not cause the steroids to penetrate the skin and cause undesirable local side effects"

The claim was rejected as anticipated by U.S. Pat. No. 6,075,056 of Quigley. The Quigley reference (see, Quigley's abstract) disclosed the combination of an anti-fungal compound and an antiinflammatory steroid, as is required by the claim. Quigley's abstract reads, "stable topical formulations comprising an antfungal agent and an anti-inflammatory steroid are disclosed." A further view of the Quigley reference reveals that anti-fungals are disclosed at various locations in this reference, such as in Col. 1 (lines 40-43), Col. 2 (lines 30-48), Col. 3 (line 65) to Col. 4 (line 50), and so on.

But note that what the claim actually requires, is a drug that is, "a low to low-medium potency steroidal antiinflammatory."

The inventor's arguments focused on the fact that the examiner engaged in picking and choosing from among the many different anti-inflammatory drug listed in the Quigley reference in order to arrive at the low-potency steroid that was required by the claim.[106] Directly attacking the examiner's basis of rejection, the inventor argued that, "to arrive at formulations within the scope of

[105] *Ex parte* Goldstein, Appeal No. 2010-006562, Ser. No. 10/691,928, November 21, 2011.

[106] Appeal Brief, Ser. No. 10/691,928, November 13, 2009 (30 pages); Reply Brief, Ser. No. 10/691,928, February 8, 2010 (12 pages).

Claim 1 would require significant picking and choosing." The inventor's rebuttal, as shown in the Reply Brief, argued that:

- Quigley's disclosure of antifungal steroids takes the form of a laundry list
- Quigley's disclosure emphasizes the need for high-potency steroids (in contrast to the claim, which requires low-potency steroids)

Regarding the laundry list-type disclosure, the inventor argued that, "Quigley describes topical compositions useful in treating fungal diseases . . . steroids are provided in a **laundry list** of formulations . . . [t]he list of formulations . . . discloses . . . betamethasone . . . concentrate of 0.05%, which is lower . . . "[107] (emphasis added)

Regarding Quigley's disclosure of the need for high-potency steroids, the inventor pointed out that in the Quigley disclosure, "there is **no direction in Quigley . . . to select a low potency steroid** like 0.02% betamethasone . . . [r]ather, **Quigley directs one to increase the concentration of steroid . . .** [t]his is exemplified in Example 10, where Quigley discloses 0.064 wt % betamethasone . . . [t]he concentration of betamethasone . . . in the lotion of Example 10 is about three times the concentration of betamethasone . . . lotion 0.02%, classified in Quigley, as having a potency of 5." (emphasis added)

Quigley's disclosure of anti-fungal steroids (Col. 4, line 55 to Col. 5, line 51) is reproduced below in its entirety. The disclosure includes a table with seven sections. The seven sections list anti-inflammatory agents in order of potency (low potency to high potency). Recall that the claim requires a low-potency steroid. Quigley's disclosure consists of a table plus some comments before and after the table. The table lists fifty different chemicals, each in association with a specific concentration. The table with comments reads (this author added the bold and italics emphasis added to the writing, "***lowest potency in category 7***," as it occurred in this table):

> The topical compositions of the present invention include anti-inflammatory steroids. Such steroids are exemplified in, but not limited to, the following table:
>
> **1** Betamethasone dipropionate cream, ointment 0.05% (optimized vehicle); Clobetasol propionate cream, ointment 0.05% (optimized vehicle); Diflorasone diacetate ointment 0.05% (optimized vehicle); Halbetosal propionate cream, ointment 0.05%.
>
> **2** Amicinonide ointment 0.1%; Betamethasone dipropionate cream 0.05%; Betamethasone dipropionate ointment 0.05%; Desoximetasone cream, ointment 0.25%; Desoximetasone gel 0.05%; Diflorasone diacetate ointment 0.05%; Fluocinonide cream, gel, ointment (0.05%); Halcinonide 0.1% cream; Mometasone furoate ointment 0.1%; Triamcinolone acetonide ointment 0.5%.

[107] Reply Brief, Ser. No. 10/691,928, February 8, 2010 (12 pages).

3 Amicinonide cream, lotion 0.1%; Betamethasone benzoate gel 0.025%; Betamethasone 0.05%; Betamethasone dipropionate cream 0.05%; Betamethasone valerate ointment 0.1%;
Diflorasone diacetate cream 0.05%; Fluticasone propionate ointment, 0.005%; Fluocinonide cream 0.05%; Halocinonide ointment 0.1%; Triamcinolone acetate ointment 0.1%.

4 Betamethasone benzoate ointment 0.025%; Betamethasone valerate lotion 0.1%;
Desoximetasone cream 0.05%; Fluocinolone acetonide cream 0.2%; Fluocinolone acetonide ointment 0.025%; Flurandrenolide ointment 0.05%; Halcinonide cream 0.025%;
Hydrocortisone valerate ointment 0.2%; Mometasone furoate cream 0.1%; Triamcinolone acetonide ointment 0.1%.

5 Betamethasone benzoate cream 0.025%; Betamethasone dipropionate lotion 0.02%;
Betamethasone valerate cream 0.1%; Clocortalone cream 0.1%; Fluocinolone acetonide cream 0.025%; Fluocinolone acetonide oil 0.01%; Flurandrenolide cream 0.05%; Fluticasone propionate cream 0.05%; Hydrocortisone butyrate cream 0.1%; Hydrocortisone valerate cream 0.2%; Predincarbate 0.1% cream; Triamcinolone acetonide cream 0.25%.

6 Aclometasone dipropionate cream, ointment 0.05%; Betamethasone valerate lotion 0.1%; Desonide cream 0.05%; Fluocinolone acetonide cream solution 0.01%; Triamcinolone acetonide cream, lotion 0.1%.

7 Dexamethasone cream 0.1%; Hydrocortisone 0.5%, 1.0, 2.5%; Methylprednisolone 1%.

The table lists the steroids in decreasing potency, i.e. highest potency in category 1, **lowest potency in category 7**. The amount of steroid required for a therapeutically effective amount will vary depending upon its potency, i.e. the more potent the steroid the less needed, and vice versa. The total amount of steroid present may vary from about 0.001% to about 5%, preferably about 0.01-1%. Preferred anti-inflammatory steroids include betamethasone, betamethasone dipropionate, fluocinonide, fluocinolone acetonide, hydrocortisone, methylprednisolone, clobetasol, and beclomethasone.

To reiterate the elements of the claim, the claim required:

- Anti-fungal compound
- Low potency antiinflammatory steroid

- Carrier

Rather than contemplate Quigley's disclosure of each these three claim elements, the Board merely agreed with the inventor's arguments and reversed, writing, "We agree with Appellants that Quigley did not describe the claimed composition in the manner required to find anticipation under § 102(b), because Quigley provided multiple, distinct teachings of compositions."

To determine exactly what arguments the Board had agreed with, it is necessary to view how the inventor characterized the Quigley reference. The inventor's arguments only concerned the fact that the "low to low-medium potency steroidal anti-inflammatory" which was required by the claim, was buried in Quigley's laundry list.

A view of the Quigley reference reveals that Quigley's list of anti-inflammatory compounds disclosed many different carriers, including a "cream," "ointment," "oil," "lotion," and "gel." Thus, the need for picking and choosing a carrier was not an issue, because each steroid was disclosed as a combination with a carrier.

Also, a view of the Quigley reference reveals that at many locations, the Quigley reference disclosed the combination of an anti-fungal compound and a steroid. See, for example, Quigley's disclosures of, "mixture of an antifungal and a steroid," "deliver the antifungal agent and the steroid to the skin," "combinations of antifungals and steroids," "ointment is prepared by dissolving the antifungal and steroid," "solutions are prepared by dissolving the antifungal and steroid," and "comparison of antifungal/steroid mixture." Thus, it is not the case that any picking and choosing was needed to associate the claim's requirement for an antifungal compound with a steroid.

The only issue relating to "picking and choosing" was the need to pick and choose the "low to low-medium potency steroidal anti-inflammatory," from Quigley's laundry list. The Board reversed, writing, "We agree with Appellants that Quigley did not describe the claimed composition in the manner required to find anticipation under § 102(b), because Quigley provided multiple, distinct teachings of compositions, but not of a composition of steroid and antifungal as defined in Appellants' claims. See *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008)."

6. *Ex parte Kuhmann.*

One take-home lesson from this PTAB opinion is that a disclosure, in a prior art reference, that there is not any preference in a list for one chemical versus for another chemical, can be used as part of the rebuttal argument. The anticipating prior art reference in this PTAB opinion contained the following phrases that indicated that there was not any preference: "The film layer may in principle be a film of any type of material" and, "The polymer layer may in principle be any kind of polymer layer."

Ex parte Kuhmann[108] concerns a claim to a flexible pipe with an interior lining, where the interior lining has two types of layers. The first type of layer

[108] *Ex parte* Kuhmann, Appeal No. 2016-000186, Ser. No. 13/639,765, June 19, 2017.

(type a) needed to be made of these chemicals:

- polyarylene ether ketone,
- polyphenyl sulfone,
- polyphenylene sulfide, or
- a blend of polyarylene ether ketone, polyphenylene sulfide, and semiaromatic polyamide

The second type of layer (type b) needed to be made of a fluoropolymer.

The claim also required that the flexible pipe be operable in a range of high temperatures (130-200 degrees C). The claim further required that the pipe's interior lining be made of layers arranged as three layers, like this:

Type a layer/Type b layer (fluoropolymer in this middle layer)/Type a layer

The claim was rejected as anticipated by WO2005/028198 of Braad.

a. The Braad disclosures – film layer polymers (page 6, lines 1-26) and polymer layer polymers (page 12, lines 6-8). The Board's analysis focused on the Braad reference's disclosures of types of polymers making up the three layers. Braad's page 12 (lines 1-2) described a sandwich structure, in terms of a "film layer" and in terms of two "polymer layers." The Braad reference disclosed, "the film layer is sandwiched between two polymer layers."

The Braad reference's page 6 (lines 126) identified the polymers that can be used for the film layer. Page 6 (lines 1-26) takes the form of about 25 types of film layer polymers, including the "fluoropolymer" that is required by the claim for the middle layer. Braad's list of film layer polymers is reproduced below in its entirety:

Useful polymer materials for the film include inter alia polymer film comprising one or more of the polymer material selected from the group consisting of polyolefins, such as polyethylene and poly propylene;
polyamide, such as poly amide-imide, polyamide-11 (PA-11) ,polyamide-12 (PA-12) and polyamide-6 (PA-6);
polyimide (PI);
polyurethanes;
polyureas;
polyesters;
polyacetals;
polyethers, such as polyether sulphone (PES);
polyoxides;
polysulfides, such as polyphenylene sulphide (PPS);
polysulphones, such as polyarylsulphone (PAS);
polyacrylates;
polyethylene terephthalate (PET);
polyether-ether-ketones (PEEK);
polyvinyls;
polyacrylonitrils;
polyetherketoneketone (PEKK); and lymers of the preceding;
fluorous polymers such as polyvinylidene diflouride (PVDF), homopolymers and copolymers of vinylidene fluoride ("VF2 "), homopolymers and copolymers of trifluoroethylene ("VF3 "), copolymers and terpolymers comprising two or more different members selected from the group consisting of VF2, VF3, chlorotrifluoroethylene, tetrafluoroethylene, hexafluoropropene, and hexafluoroethylene.

Regarding the outside layers, Braad's page 12 (lines 6-8) stated that, "the polymer layers in the sandwich structure . . . are of a polymer, selected from the group specified above." Looking above this writing, one finds a list of polymers suitable for the "polymer layer" (not "film layer") where the list is on page 4 (lines 21-35) to page 5 (lines 1-11) of Braad. There are about 25 different polymers in this list, including "polyphenylene sulphide," as is required by the claim. Braad's list of polymers for the "polymer layer" is reproduced, in part, below:

Examples of useful polymers for the polymer layers include the following:

polyolefins, such as polyethylene and poly propylene;
polyamide, such as poly amide-imide, polyamide-11 (PA-11) and polyamide-
12 (PA-12);
polyimide (PI);
polyurethanes;
polyureas;
polyesters;
polyacetals;
polyethers, such as polyether sulphone (PES);
polyoxides;
polysulfides, such as polyphenylene sulphide (PPS);
polysulphones, such as polyarylsulphone (PAS);
polyacrylates;

b. Inventor's argument that the rejection was based on picking and choosing. The inventor argued that, "Braad teaches the ordinary artisan to pick and choose from a broad listing without any guidance, direction, or distinction."[109] In making this argument, the inventor reproduced Braad's list of polymers for the polymer layer (Braad's page 4 (line 21) to page 5 (line 11)) and reproduced Braad's list of polymers for the film layer (Braad's page 5 (line 33) to page 6 (line 30)). In addition, the inventor observed that, for each of these lists, Braad disclosed that, "The **film layer** may in principle be a film of any type of material" and that, "The **polymer layer** may in principle be any kind of polymer layer"

c. Reversal. The Board agreed with the inventor's argument and reversed, writing that, "Because some picking, choosing, and combining various disclosures from the prior art . . . would be required to arrive at a pipe . . . within the scope of Claim 1, we find that Braad does not describe every limitation . . . as required under 35 U.S.C. § 102(b). *Net MoneyIN, Inc. v. VeriSign*, Inc., 545 F.3d 1359, 1371 (Fed. Cir. 2008)."

In addition to providing the take-home lesson that a successful rebuttal based on *Net MoneyIN* can be based on the disclosure, in the prior art, of a claim element residing in a list, this opinion also reveals that a successful rebuttal can also make use of the argument that there is not any preference for any particular type of composition in the long list. This statement of no preference may a form such as, "The film layer may in principle be a film of any type of material," or such as, "The polymer layer may in principle be any kind of polymer layer."[110]

[109] Reply Brief, Ser. No. 639,765, September 16, 2015.
[110] *Ex parte* Kuhmann, Appeal No. 2016-000186, Ser. No. 13/639,765, June 19, 2017.

In asserting a rebuttal, the terms "may" and "any type" have increased importance. The word "may" indicates there is no preference. The phrase "any type" also indicates that there is no preference.

7. *Ex parte Lizzi.*

Ex parte Lizzi[111] is unique in that the inquiry under § 102 concerned the prior art's disclosure of a number that was required by the claim. This opinion should settle any doubt, as to whether an inquiry under *Net MoneyIN* is applicable where an examiner's behavior in "picking and choosing" numbers (numerical values) from a prior art reference can be used as basis for imposing a §102-rejection. *Ex parte Lizzi* discloses that *Net MoneyIN* can, in fact, be used to rebut a rejection where the examiner had used "picking and choosing," to select a number from a prior art reference, as part of a §102-rejection.

The numbers were a values for concentration and temperature. The claims were to methods for extracting, obtaining, or preserving nucleic acids from a biological sample. The claims required adding bromelain to the biological sample. Bromelain is an enzyme from pineapple. Bromelain catalyzes the hydrolysis of peptide bonds in polypeptides, where the result is the digestion of the polypeptide.

a. Rejection of Claim 3. Claim 3 and Claim 11 were rejected as anticipated by US2005/0214926 of Zielinski.

Claim 3 depends from Claim 1. Claim 3 has a claim element requiring that bromelain be used in a specific concentration range (emphasis added).

> Claim 1. A method for obtaining **. . .** nucleic acids from a biological sample comprising:
> combining bromelain with a biological sample; and
> extracting nucleic acids from the sample,
> wherein the sample contains a bacterial cell or virus.

> Claim 3. The method of Claim 1, wherein the amount of bromelain used is **between 0.01 U/mL and 100 U/mL**.

b. Prior art disclosed concentration of proteinase K, but was silent on concentration of bromelain. The term "U/mL" means units per milliliter. Regarding concentration of bromelain, the Board reiterated the inventor's argument that, "Zielenski never indicates a concentration of proteolytic enzyme that could be used **. . .** Zielenski does not teach **. . .** details regarding the units of bromelain necessary for the lysis buffer of Zielenski, but instead teaches only units for proteinase K **. . .** see *In re Arkley*, 455 F.2d [586, 587-588 (CCPA 1972)] ("combining various disclosures not directly related to each other **. . .** has no place in the making of a 102, anticipation rejection.")."

[111] *Ex parte* Lizzi, Appeal No. 2011-012625, Ser. No. 11/832,508, September 25, 2012.

The Board referred to Zielenski's para. 0040 which disclosed a proteinase K concentration range ("between 0.1 U/mL and 10 U/mL") that, in the examiner's opinion, anticipated the claim's requirement for a concentration range ("between 0.01 U/mL and 100 U/mL"). Zielenski's para. 0040 is reproduced below:

> **[0040]** It is highly preferred that the lysis buffer of step (a) contains proteinase K. Preferably, the activity of proteinase K in the mixture of step (b) is between 0.1 U/ml and 10 U/ml. It is more preferred that the activity of proteinase K in the mixture of step (b) is between 1 U/ml and 6 U/ml. It is even more preferred that the activity of proteinase K in the mixture of step (b) is between 2 U/ml and 4 U/ml. It is even more preferred that the activity of proteinase K in the mixture of step (b) is about 3 U/ml. In this regard it is understood that the recited activity values of proteinase K reflect activity values determined as described in Example 1.

As stated above, the Board reversed, citing *In re Arkley*.

c. Rejection of Claim 11. Claim 11 requires that bromelain be used at a specific temperature. Claim 11 is shown below (emphasis added):

> Claim 11. A method for extracting nucleic acids from a biological sample to be used in a nucleic acid-based diagnostic assay, comprising:
> combining the sample with bromelain at **room temperature**;
> extracting nucleic acids from the sample; and
> subjecting the sample to a nucleic acid-based diagnostic assay.

The Board reiterated the inventor's argument that, "there is no disclosure in Zielenski of combining any specific enzyme with a sample at room temperature to extract a nucleic acid." Further regarding temperature, the Board stated that, "There is no single example . . . of incubating bromelain at room temperature . . . [i]nstead, a list of desired proteases is provided . . . and a list of **desireable temperatures** is provided." (emphasis added)

The Board referred to Zielenski's para. 0054, which disclosed, "It is preferred that the mixture . . . is incubated . . . at **a temperature between 20 degrees C and 75 degrees C**." (emphasis added) The Board referred to this recitation of a temperature range as, "a list of desirable temperatures" (even though it was a range and not in any way a list). The Board reversed, writing that, "A claim is not anticipated . . . when such independent picking and choosing is required to arrive at the claimed invention. See *In re Arkley*."

The following concerns the semantics behind the Board's notion that the recitation of "a temperature between 20 degrees C and 75 degrees C" consti-

tutes a "list." In this author's opinion, the only way that the disclosure in Zielenski's para. 0054 could be considered a list, is for the interpretation where the list consists of these two temperatures (of only two different temperatures): 20 degrees C and 75 degrees C.

Now, assuming that the Board was thinking that Zielenski's para. 0054 disclosed this list of two temperatures, the following argument could have been made to establish a *prima facie* case of invalidity under 35 U.S.C. § 102. A rejection the claim under 35 U.S.C. § 102, would still have required "picking and choosing" between these two temperatures (20 degrees and 75 degrees), in order to arrive at a temperature corresponding to the temperature required by the claim (the claim required, "room temperature"). Biochemistry publications usually use the term "room temperature" without defining the precise temperature, however it is generally held that room temperature means "23 degrees C," and in fact, some publications expressly state that room temperature is 23 degrees C.[112] Thus, in the hypothetical where the examiner had alleged that Zielenski's disclosure of "23 degrees C" constituted a disclosure of the claim's requirement for "room temperature," this would have established a reasonable *prima facie* case of anticipation, in this author's opinion.

8. *Ex parte Walsh.*

Ex parte Walsh[113] provides the fact-pattern where all of the elements in the rejected claim were located in the same location in the cited prior art reference. This particular location in the prior art reference contained a huge list of organisms, which actually took the form of a huge list of microorganisms followed by a huge list of plants. One of the elements of the claim ("*Brassica* plant") resided in the huge list of plants.

The claim was to a Brassica plant genetically engineered to include two genes, a gene encoding PUFA synthase and a gene encoding PPTase. In the claim, the term "PUFA" refers to polyunsaturated fatty acids. The term "PUFA synthase" refers to an enzyme that is used to synthesize PUFAs. PPTase is another enzyme that is involved in synthesizing PUFAs. Also, "EPA" is a type of fatty acid known as "eicosapentaenoic acid." The claim read (emphasis added):

> Claim 69. A genetically modified ***Brassica*** **plant** or part thereof, comprising:
>
> (i) a polynucleotide encoding a polypeptide of a **polyunsaturated fatty acid (PUFA) synthase** system that produces at least one PUFA, wherein the polypeptide is selected from the group consisting of SEQ ID NO:l, SEQ ID NO:2, and SEQ ID NO:3; and
>
> (ii) **a polynucleotide encoding a phosphopantetheinyl transferase (PPTase)** that transfers a phosphopantetheinyl cofactor to a PUFA synthase system ACP domain, wherein the plant or part

[112] White et al., *Evaporation versus iced gastric lavage treatment of heatstroke: Comparative efficacy in a canine model*, 15 Crit. Care Med. 748-750 (1987); Sitsapesan et al., *Sheep cardiac sarcoplasmic reticulum calcium-release channels: modification of conductance and gating by temperature*, J. Physiol. 434:469-488 (1991); Sato et al., *Human Skin Flora as a Potential Source of Epidural Abscess*, 85 Anesthesiology 1276, 1277 (Dec. 1996).

[113] *Ex parte* Walsh, Appeal No. 2017-002141, Ser. No. 13/698,412, September 26, 2017.

> thereof comprises an oil comprising 0.01% to 5% by weight of eicosapentaenoic acid (EPA).

The claim was rejected as anticipated by WO2007/106905 of Metz.

a. Complaint from the Board about residence of a claim term in a long list. The Board referred to the residence of the claim term, "*Brassica*," in a huge list, and complained that, "Metz teaches that Brassica plants may be used . . . but Metz also teaches using many other plants, as well as many microorganisms . . . Metz does not link the expression of a polypeptide of the PUFA synthase system and a PPTase in Brassica plants with the production of EPA."

The disclosure of Brassica plants took the form of two lists of organisms, where one list was about microorganissms (pages 77-80 of Metz) and where the other list was about plants (pages 80-82 of Metz). Next to each list was a disclosure of useful genes for genetically modifying the organism. The gene lists included a comment about, "all genes associated with the PUFA PKS system," where the Summary of the Invention section of the Metz reference identified PPTase as part of this PUFA PKS system. Thus, the issue of laundry lists in this opinion was about "picking and choosing" the claim element "Brassica," and the issue was not about "picking and choosing" PUFA synthase or PPTase.

b. Complaint from the Board about lack of guidance from the prior art for picking and choosing the claim element. The Board further complained that, "Thus, Metz does not provide a clear disclosure of Appellants' claimed Brassica plant without requiring one . . . to pick and choose among many alternatives."

c. Nature of the prior art's laundry list. The Board referred to pages 77-81 of the Metz reference. A view of this part of the Metz reference reveals that it contains a list of organisms suitable for genetic engineering, and that the organisms can be engineered to express PUFA synthase and PPTase. Page 77 discloses enzymes used to synthesize polyunsaturated fatty acids (PUFAs), and states that a "genetically modified microorganism can include . . . a genome which is modified . . . such that the desired result is . . . increased PUFA." The list of organisms includes a list of microorganisms (pages 77-80 of Metz) and, shortly after that, a list of plants (pages 80-82 of Metz). The Metz reference does not provide any guidance or instruction for selecting "Brassica" out of the two lists of organisms.

This list of microorganisms is reproduced, in part, below:

> Examples of suitable host microorganisms for genetic modification include, but are not limited to, yeast including Saccharomyces cerevisiae, Saccharomyces carlsbergensis, or other yeast such as Candida, Kluyveromyces, or other fungi, for example, filamentous fungi such as Aspergillus, Neurospora, Penicillium, etc. Bacterial cells also may be used as hosts. These include, but are not limited

> to, Escherichia coli, which can be useful in fermentation processes. Alternatively, and only by way of example, a host such as a Lactobacillus species or Bacillus species can be used as a host.

Page 80 discloses discloses enzymes used to synthesize polyunsaturated fatty acids (PUFAs), and states that, "Another embodiment of the present invention relates to a genetically modified plant, wherein the plant has been genetically modified to **. . .** express a PUFA PKS system, including a PPTase." This is followed by a list of plants. The list of plants, which includes Brassica, is reproduced below:

> Preferred plants to genetically modify according to the present invention (i.e., plant host cells) include, but are not limited to any higher plants, including both dicotyledonous and monocotyledonous plants, and particularly consumable plants, including crop plants and especially plants used for their oils. Such plants can include, but are not limited to, for example: canola, soybeans, rapeseed, linseed, corn, safflowers, sunflowers and tobacco. Thus, any plant species or plant cell may be selected. Particular cells used herein, and plants grown or derived therefrom, include, but are not limited to, cells obtainable from **canola (Brassica rapa L.)**; soybean (Glycine max); **rapeseed (Brassica spp.)**; linseed/flax (Linum usitatissimum); maize (corn) (Zea mays); safflower (Carthamus tinctorius); sunflower (Helianthus annum); tobacco (Nicotiana tabacum); Arabidopsis thaliana, Brazil nut (Betholettia excelsa); castor bean (Riccinus communis); coconut (Cocus nucifera); coriander (Coriandrum sativum); cotton (Gossypium spp.); groundnut (Arachis hypogaea); jojoba (Simmondsia chinensis); **mustard** (**Brassica spp.** and Sinapis alba); oil palm (Elaeis guineeis); olive (Olea eurpaea); rice (Oryza sativa); squash (Cucurbita maxima); barley (Hordeum vulgare); wheat (Traeticum aestivum); and duckweed (Lemnaceae sp.). (emphasis added)

d. The reversal. The Board reversed, citing *Net MoneyIN* for its rule that, "In an anticipation rejection **. . .** the reference must **. . .** disclose the claimed invention **. . .** without any need for picking, choosing, and combining various disclosures not directly related to each other." *Ex parte Walsh* demonstrates that *Net MoneyIN* can be effectively used in rebuttal arguments that complain about laundry list-type disclosures. In short, the above opinion provides a typical and exemplary case of using a laundry list-type argument that a prior art reference did not anticipate a particular claim element.

IV. ARRANGEMENT OF PARTS OF THE PRIOR ART DEVICE IS DIFFERENT FROM ARRANGEMENT REQUIRED BY THE CLAIM

This concerns the application of *Net MoneyIN*, as a basis for reversal where the fact-pattern is that the arrangement of parts of the prior art device is not the same as the arrangement of parts required by the claim. Opinions where the Board reversed because the arrangement of parts in the prior art device was not the same as that required by the claim include, *Ex parte Lambert*,[114] *Ex parte Awo*,[115] *Ex parte Bennett*,[116] *Ex parte Denner*,[117] *Ex parte Drosihn*,[118] *Ex parte Franic*[119] (not described in this article), *Ex parte Navia*,[120] *Ex parte Neuman*,[121] and *Ex parte Sareyka*.[122]

Rebuttal arguments that compare the arrangement of parts in a prior art device with the arrangement of parts required by the claim are facilitated, where the prior art reference includes figures, and where the inventor's Specification includes figures, and where the figures illustrate how structures in a device are arranged, with respect to each other.

As a general proposition, comparing arrangement of parts in a figure in the prior art reference with the arrangement of parts in a figure in the inventor's Specification, can help establish if (or if not) the prior art's figure has parts that are arranged in the same way as required by the claim. Keep in mind, that the metes and bounds of the intellectual property are defined by the claims, and not by the figures. What this means is the following:

- In contemplating the disclosure in a prior art reference, the presence of figures in the prior art reference can be the best friend and closest ally of an attorney or agent wanting to establish that the arrangement in the prior art device fails to correspond to an arrangement required by the claim.

- Keeping in mind the fact that the intellectual property is defined by the claims, and not by any figures, it is the case that a rebuttal argument that the claim requires a specific "arrangement" may be strengthened by referring to a figure in the inventor's Specification. In this situation, a rebuttal that provides a side-by-side comparison of the prior art's figure and the inventor's figure, can help establish that the prior art's arrangement is NOT the same as that required by the inventor's claim.

[114] *Ex parte* Lambert, Appeal No. 2011-011826, Ser. No. 11/550,792, March 13, 2014.
[115] *Ex parte* Aow, Appeal No. US2008-0086804, Ser. No. 11/793,100, February 9, 2018.
[116] *Ex parte* Bennett, Appeal No. 2016-008371, Ser. No. 12/511,462, November 17, 2017.
[117] *Ex parte* Denner, Appeal No. 2016-000086, Ser. No. 11/476,001, July 11, 2017.
[118] *Ex parte* Drosihn, Appeal No. 2012-010774, Ser. No. 12/330,738, October 31, 2014.
[119] *Ex parte* Franic, Appeal No. 2012-012697, Ser. No. 10/547,022, June 23, 2015.
[120] *Ex parte* Navia, Appeal No. 2002/0002401, Ser. No. 10/850,508, January 24, 2013.
[121] *Ex parte* Lambert, Appeal No. 2014-004493, Ser. No. 12/319,606, June 27, 2016.
[122] *Ex parte* Sareyka, Appeal No. 2014-003609, Ser. No. 13/694,393, May 11, 2016.

1. *Ex parte Lambert.*

Ex parte Lambert is the first of the opinions to be discussed in this part of the article because *Ex parte Lambert* includes an inquiry into: (1) Whether the arrangement of parts in the prior art device is the same as the arrangement required by the claim, as well as the more typical type of inquiry, which asks (2) Whether information in different locations in the prior art reference concern the same embodiment or different embodiments. In this way, *Ex parte Lambert* provides a bigger picture of options for employing *Net MoneyIN* as a basis for rebuttal, than most other opinions.

Ex parte Lambert[123] concerns a claim to a system that included an electric circuit, a bus host controller, and a bus port. The claim included structural elements ("circuit," "bus host controller," "bus port") and a claim element requiring a particular arrangement ("disposed between"). The use of **bold font** in the claim illustrates how the "circuit" must be disposed between two different structures (emphasis added):

> Claim 1. An information handling system comprising **. . . a circuit disposed between the serial communication bus host controller** and the downstream facing host computer serial communication **bus port**,
>
> the circuit operable to disable the downstream facing host computer serial communication bus port from detecting presence of a peripheral device directly coupled to the serial communication bus port.

The claim was rejected as anticipated by U.S. Pat. No. 6,279,060 of Luke.

a. Nature of the claim element requiring an arrangement. The Board focused on the claim element reading, "the circuit operable to disable the downstream facing host computer serial communication bus port from detecting presence of a peripheral device," and on the fact that this circuit was required by the claim to be "disposed between" two other structures.

b. The Board's 2-part inquiry under *Net MoneyIN*, as demonstrated by the opening words of the opinion. The opening words of the opinion demonstrated that the Board had applied the inquiry under *Net MoneyIN* to two different fact-patterns, each of which resided in the prior art reference. These two fact-patterns are illustrated by these two questions:

- Does the prior art reference describe a device where the parts of the device are arranged in the same way as the arrangement required by the claim?
- Does the prior art reference's disclosure all of the elements of the claim in one embodiment, or in a form dispersed into multiple embodiments?

[123] *Ex parte* Lambert, Appeal No. 2011-011826, Ser. No. 11/550,792, March 13, 2014.

The fact that the Board broke down the usual *NetMoneyIN* inquiry into two parts is demonstrated by the following excerpt from *Ex parte Lambert*:

> *Principal Issues on Appeal*
>
> Has the Examiner erred in rejecting claims 1-4 and 6-21 as being anticipated or obvious because:
>
> (1) Luke fails to disclose the specific arrangement of a host computer and circuitry for disabling a downstream facing serial communication bus port from detecting the presence of a peripheral device, as recited in independent claims 1, 7, and 14; and/or
>
> (2) the Examiner has improperly combined multiple different embodiments of Luke to meet the limitations recited in claims 1, 7, and 14, resulting in the relied upon portions of Luke not being arranged as recited in claims 1, 7, and 14?

c. The Board's 2-part inquiry under *Net MoneyIN*, as demonstrated by the Board's conclusion. The Board's conclusion also demonstrates that the Board had applied the inquiry under *Net MoneyIN* to two different fact-patterns, each of which resided in the prior art reference.

The Board concluded, "We concur with Appellants' conclusion that the examiner erred in finding that Luke . . . teaches . . . the *specific arrangement* of a host computer and circuitry . . . [i]n addition, we are constrained by the record before us to find that the examiner erred in rejecting claims . . . as being anticipated by Luke, based on the examiner's reliance on a **plurality of different and mutually exclusive embodiments** to support the anticipation rejection." (emphasis added)

The fact that the Board's analysis compared the arrangement of parts in the prior art device with the arrangement required by the claim, is further demonstrated by the Board's statement that, "Luke's serial disconnect bus 96, USB port 92, bridge logic 102, tri-state buffers 122/124, bridge 152, USB host 154, and host computer 150 are **not arranged or combined in the same way** as set forth in independent Claim 1." (emphasis added)

d. Rule of law regarding disclosure the elements of the claimed invention "arranged as in the claim." The relevant part of *Net MoneyIN* at 1370, which refers to the object itself, and which was cited by the Board in *Ex parte Lambert*, is reproduced below. The writing that is **highlighted in bold** refers to the comparison of the prior art device with the claim (and does not refer to the prior

art's disclosure of the claim by way of two or more embodiments in the prior art reference):

> For example, in *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452 (Fed.Cir.1984), we reviewed a district court's determination that a patent directed to a hydraulic scrap shearing machine was anticipated by a prior patent directed to a method for shearing spent nuclear fuel bundles. Because the district court had "treated the claims as mere catalogs of separate parts, in disregard of the part-to-part relationships set forth in the claims and that give the claims their meaning," we reversed. *Id*. at 1459. Although the prior art reference could be said to contain all of the elements of the claimed invention, it did not anticipate under 35 U.S.C. § 102 because it "**disclose[d] an entirely different device**, **composed of parts distinct from those of the claimed invention**, and operating in a different way to process different material differently." *Id*. at 1458. The reference thus was deficient because it did not **disclose the elements of the claimed invention "arranged as in the claim"** as required by 35 U.S.C. § 102. *Id.* (emphasis added)

e. Take-home lessons. *Ex parte Lambert* reveals use of an aggressive rebuttal strategy that includes both of these approaches:

- To argue that the prior art reference discloses all of the claim elements, not in any one embodiment, but instead in two or more different embodiments
- To argue that the arrangement of parts of the prior art device is not the same as the arrangement of parts that is required by the claim.

2. *Ex parte Awo.*

Ex parte Awo[124] illustrates the issue where a structure described by a prior art reference has parts arranged differently than corresponding parts that are required by the claim. This opinion concerned a potty-training device with a seat and a leg rest. The claim element that describes an arrangement of structural elements is, "located beneath," where this claim element is found in, "first pair of surfaces is located beneath a respective thigh" and "second pair of surfaces is located beneath respective shin." Each of these pairs of surfaces were part of a leg rest, as is evident from Claim 24.

Claim 24 read (emphasis added):

> "Claim 24. A potty-training device, the device comprising:
>
> a body including a toilet seat, the toilet seat comprising an opening through which a user may urinate or defecate, the opening lying on a first plane;

[124] *Ex parte* Aow, Appeal No. US2008-0086804, Ser. No. 11/793,100, February 9, 2018.

a **leg rest** attached to the body and extending approximately from the opening towards a front side of the body,

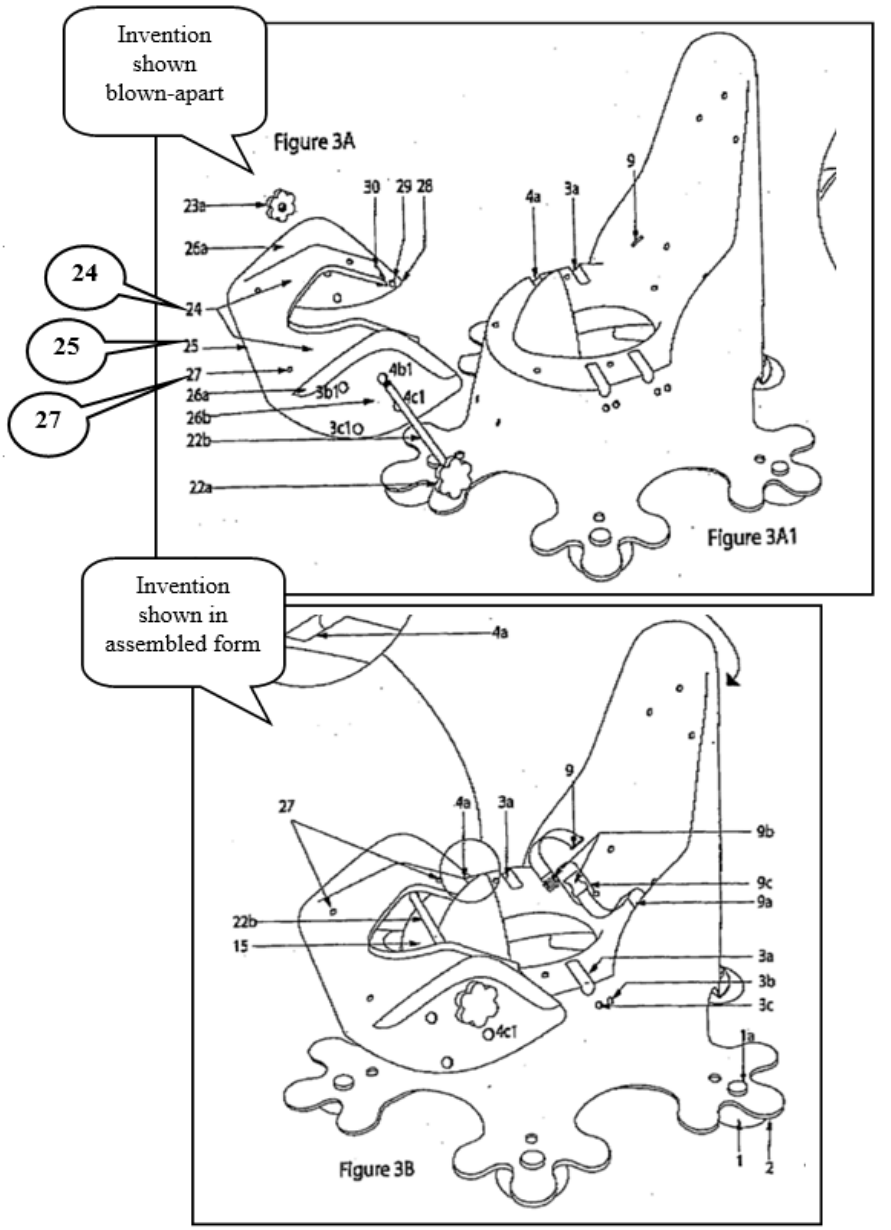
the leg rest comprising a first pair of surfaces and a second pair of surfaces, each of the surfaces of the first pair of surfaces being joined to a respective one of the surfaces of the second pair of surfaces by a bend,

the leg rest being sized such that each of the first pair of surfaces is located beneath a respective thigh of the user and each of the second pair of surfaces is located beneath a respective shin of the user when the user is seated on the device with their buttocks located above the opening;

wherein each of the surfaces of the first pair of surfaces lies in a plane that extends at a positive angle with respect to the first plane as measured from where the **leg rest** is attached to the body to the respective bend . . . ." (emphasis added)

a. Figures showing the inventor's chair with a leg rest (24). FIG. 3A from the inventor's patent Specification shows a view of the leg rest and that, "It consists of two curved moulded leg support platform (24) designed to fit the lower half of the infant's . . . thighs and shins which are held together by a central joining plate (25). The leg support platforms have holes (27) suitable for receiving the rubber studs of the . . . cushion."[125] FIG. 3A shows a blownapart drawing of the inventor's toilet seat. FIG. 3B shows the same toilet seat, but in the assembled form (not blown-apart). FIG. 3A and FIG. 3B are shown below:

[125]Drawings, Ser. No. 11/793,100, June 15, 2007.



The inventor's specification, as originally filed, disclosed that structure (24) is a "plastic leg support platform 24, designed to fit the . . . infant's/toddler's thighs and shins . . . [t]his provides a . . . support area to accommodate the varying sized thighs and shins of the infants."[126]

The claim was rejected as anticipated by U.S. Pat. No. 2,662,229 of

[126]Int. Publication No. WO2006/0066316 of Aow. Toilet Training, Bathing, and Toileting Devices for Infants, Toddlers, and PreSchoolers, submitted to USPTO on June 15, 2007. Quotation from page 5 (lines 2530).

Wenkstern.

b. Comparing the alleged "leg rest" of the prior art with the inventor's "leg rest." The Wenkstern device is a nursery chair. The inventor's argument focused on comparing the **position of the claimed leg rest** and what was alleged to be a corresponding leg rest disclosed by the Wenkstern reference. A view of the inventor's FIG. 3A reveals that structure (24) discloses the claimed "leg rest," while a view of Wenkstern's "first plane" and "second plane" discloses what the examiner alleged to be the corresponding "leg rest" in the prior art chair (see, Wenkstern's FIG. 1 and FIG. 6).

c. It is self-evident that the alleged "leg rest" of the prior art is not arranged as in the inventor's "leg rest." At this point in this commentary, it should be self-evident that what the examiner had alleged to be Wenkstern's "leg rest" did not occupy the same position in Wenkstern's chair, as the inventor's leg rest in the inventor's chair, and at this point, it should also be self-evident that the Wenkstern's alleged "leg rest" was not arranged in the same way as the arrangement required by the claim (the claim required the arrangement where, "the leg rest being sized such that each of the first pair of surfaces is located beneath a respective thigh of the user and each of the second pair of surfaces is located beneath a respective shin of the user").

d. Figures showing the prior art chair with the alleged "leg rest." An outside view of the Wenkstern chair is shown below (shown at left). A cutaway version of the Wenkstern chair is also shown (shown at right).[127] The examiner alleged that certain surfaces that existed in the Wenkstern chair anticipated the part of the claim reading:

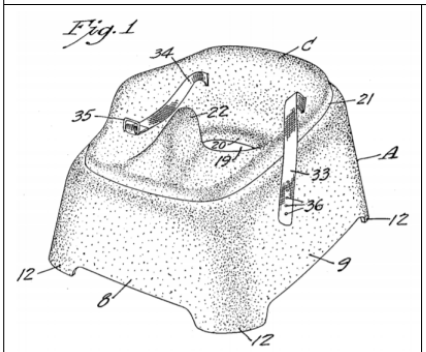
> [T]he leg rest comprising a first pair of surfaces and a second pair of surfaces . . . the leg rest being sized such that each of the first pair of surfaces is **located beneath** a respective thigh of the user . . . .

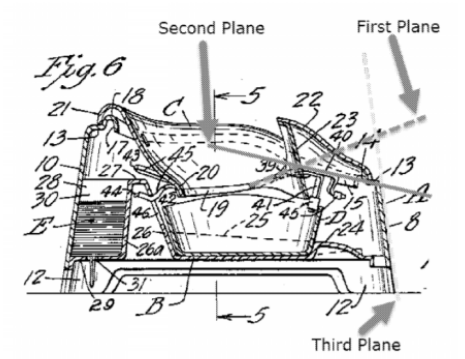
The examiner referred to Wenkstern's FIG. 6, and the examiner drew arrows on FIG. 6 which indicated a "First Plane" and a "Second Plane" that were alleged to correspond to (to anticipate) the "leg rest" of the claim.

e. The prior art's alleged "leg rest" cannot function as a leg rest, and is not arranged as in the inventor's claim. But the examiner was confused. The examiner was confused because the "First Plane" and "Second Plane" refer to structures that are actually internal (not external) to the Wenkstern's nursery chair, and thus cannot possibly serve as a "leg rest" (unless the infant had curled up in the chair with its legs folded under it's buttocks). The Board pointed out that the "First Plane" and "Second Plane" shown in the examiner's annotated Figure 6 of Wenksterm refer to structures in the Wenkstern chair that are actually internal to the potty device, and, therefore, cannot comprise parts that serve as a "leg rest."

[127] Examiner's Answer, Ser. No. 11/793,100, December 15, 2016.

THE WENKSTERN PRIOR ART NURSERY CHAIR





f. Reversal based on *Net MoneyIN*. The Board reversed, citing only *Net MoneyIN* as the case law relevant to the reversal. In the Board's words, "This evidences that Wenkstern does not disclose all of the limitations claimed, as arranged or combined in the same way as recited in the claim. *See Net MoneyIN, Inc.* v. *VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008)."

3. *Ex parte Bennett*.

Ex parte Bennett[128] discloses the situation where a structure described by the prior art reference has parts that are arranged differently than the arrangement of parts required by the claim. The opinion concerned a medical device for closing wounds, for example, wounds that are intentionally created during surgery to allow the surgeon to gain access to internal tissues in the patient's body. The medical device provides an alternative for closing wounds that is less cumbersome than using sutures.

The claim is shown below. The bold font indicates the claims requirements for arrangements, that is, "attached to" and "positioned on" (emphasis added):

> Claim 1. A medical device for wound closure, the medical device comprising:
>
> an elongate body having a distal portion and a proximal portion, and
>
> a plurality of barbs extending from a surface thereof;
>
> **a foam structure attached to the distal portion of the elongate body** such that the foam structure is disposed at a distal-most end of the medical device;
>
> an inner member moveably positioned on the elongate body proximal of the foam structure and configured to engage a first portion of tissue; and
>
> **an outer member moveably positioned on the elongate body** proximal of the inner member,

[128] *Ex parte* Bennett, Appeal No. 2016-008371, Ser. No. 12/511,462, November 17, 2017.

> the inner member having a smaller diameter than the outer member and being positioned between a portion of the outer member and the distal portion of the elongate body,
>
> the outer member configured to engage a second portion of tissue located radially outward of the inner member and radially adjacent the first portion of tissue when the inner member engages the first portion of tissue.

The claim was rejected as anticipated by U.S. Pat. No. 5,700,277 of Nash.

a. Claim terms that identify arrangement of parts. The Board's analysis focused on two of the terms in the claim, "attached on" and "positioned on." Neither of these terms is a structural element. Neither of these terms is a functional element. Generally, functional elements are identifiable because they include the one of the terms, "capable of," "configured for," and "adapted to."[129] Instead, the terms "attached on" and "positioned on" identify how the structural elements in the claim are arranged, with respect to each other. Thus, at this point, it might be noted that there exist at least three types of claim elements – structural elements, functional elements, and elements that describe arrangements of structures. The Board's interest in the claim terms "attached" and "positioned" is shown by the Board's observation that:

> Claim 1 recites that the foam structure is "attached" to the elongate body "such that the foam structure is disposed at a distal-most end of the medical device," while the inner member and outer member are "moveably positioned" on the elongate body.

b. Comparing arrangements of parts in Nash reference with arrangement of parts required by the claim. The Board commented on the arrangements disclosed by the Nash reference and the arrangement required by the claim, and observed that some parts were arranged in the same way (comparing Nash with the claim), while other parts were arranged differently (also, comparing Nash with the claim). Regarding nonsimilar arrangements, the Board observed that:

> However, **the Examiner has not shown** that Nash's foam structure is "attached" to the elongate body in the manner required by the claim. Nor has the Examiner shown that the **foam structure** is disposed at either *end* of the elongate body—whether distal or proximal. Nor, for that matter, has the Examiner established that Nash's **outer member** is moveably positioned on the elongate body, as also required by claim 1.

The following table (see, Table 1), as well as figures reproduced from the Nash reference (FIG. 6) and from the inventor's patent application (FIG. 1) disclose the correspondence between the Nash structures and the claimed structures.

[129] Sean Burke, *"Adapted To" after* Aspex, 98 J. Pat. & Trademark Off. Soc'y 594 (2016).

The reproduction of both of these figures permits comparison of the arrangements, "attached to" and "positioned on." In other words, where the figures are shown side-by-side, as they are below, one can determine if the parts are "attached" in both figures in the same way, in both figures, and one can see if the parts are "positioned on" in the same way, in both figures.

Regarding the location of the foam structure in the Nash reference, the inventor correctly argued that, "Nash has not been shown to have disclosed **. . .** a foam structure attached to a distal portion of an elongate body such that **the foam structure is disposed at a distalmost end of the medical device.**"[130] (emphasis in original) Please note the claim's requirement for, "a foam structure attached to the distal portion of the elongate body."

As one can see, the Nash figure shows that the foam structure is NOT located at an end of the elongated body, as is required by the claim. Thus, it can be seen that one particular structure of the Nash device is not arranged as in the claim. This author points out that this distinction, without any further arguments, can effectively remove Nash as an anticipating reference against the claim under the rule of *Net MoneyIN*.

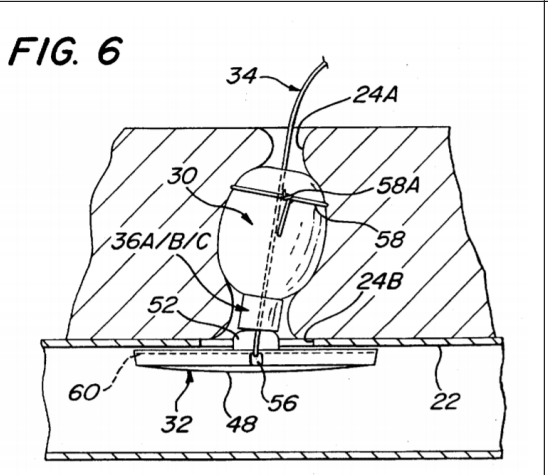
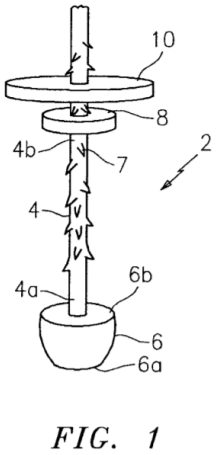
The Board also determined that, "Nor, for that matter, has the Examiner established that Nash's **outer member** is moveably positioned on the elongate body, as also required by claim 1." However, in this author's opinion, Nash's figure seems not to provide any evidence on whether Nash's outer member is, or is not, moveably positioned.

c. Reversal. The Board reversed. In reversing, the only case law cited as a basis for reversal was *Net MoneyIN* and *Richardson v. Suzuki Motor Co., Ltd.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). *Richardson v. Suzuki Motor* at 1236 sets forth the same rule as *Net MoneyIN*, in its recitation that, "Every element of the claimed invention must be literally present, arranged as in the claim."

Table 1. Correspondence of structures in FIG. 6 of prior art Nash reference and in FIG. 1 of the inventor's Specification, as originally filed.

Nash reference	**Inventor's patent application**
Elongate body (34). Nash calls structure (34) a "filament"	Elongate body (4)
Barbs (102)	Barbs (7)
Foam structure (30)	Foam structure (6)
Outer member (32). Nash calls structure (32) an "anchor member"	Outer member (10)
Inner member (36a/b/c)	Inner member (8)

[130] Appeal Brief, Ser. No. 12/511,462, February 1, 2016 (page 5 of 19 pages).

Figure in Nash prior art reference	Figure in inventor's specification
	

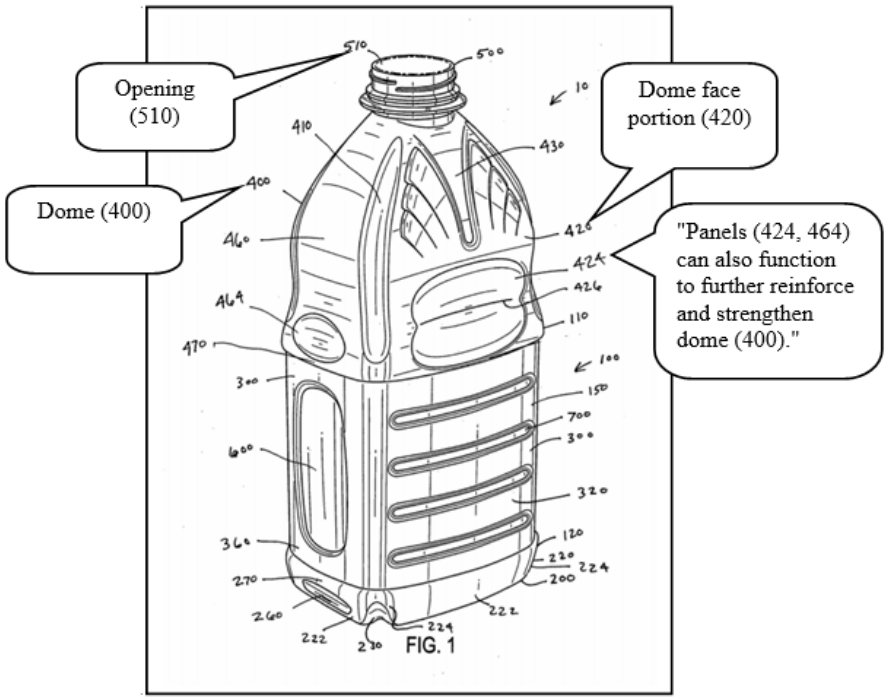
4. *Ex parte Denner.*

Ex parte Denner[131] reveals the fact-pattern where parts in a structure described by the prior art reference are arranged differently than the arrangement required by the claim. The claim was to a blow molded plastic container. The container had a rectangular crosssection with rounded edges, where the upper half was like a dome and where the dome also had the rectangular cross-section. On top of the dome was a round opening with screw threads. The claim required these elements:

- "body section having a non-circular crosssectional shape"
- "dome extending upwardly from the body section"
- "dome includes a plurality of dome face portions defining corners . . . each dome face portion further including a panel"

The issue relating to arrangement was whether the panels were in the dome portion of the container (claimed container) or in the waist portion of the container (prior art container). A figure in the inventor's patent application reveals that the panels are in the dome portion. The inventor's patent application[132] included a drawing showing the rectangular cross-section, dome (400), round opening on top (510), and panels (424,464). These panels are located on the dome (400) (see below):

[131] *Ex parte* Denner, Appeal No. 2016-000086, Ser. No. 11/476,001, July 11, 2017.
[132] Drawings for patent applications, Ser. No. 11/476,011, filed June 28, 2006.



The claim was rejected as anticipated by U.S. Pat. No. 7,455,189 of Lane. Regarding the alleged correspondence between the panels of the prior art Lane container and the panels of the claimed container, the Board observed that the claimed dome has panels while, in contrast, the panels of the Lane container are in the waist portion (and not in any dome). In the Board's words, "the examiner relies on Lane to teach . . . a container . . . including a dome (16) and body (18) with ribs . . . where . . . the dome has face and end portions (14,15) . . . that include panels (202,216) . . . [t]he **examiner considers the waist portion (200) of Lane as being part of the dome**, since it lies above the sidewall (18) or body section having the horizontal ribs." Thus, the rejection was based on the incorrect allegation that the panels of the prior art container were located in the prior art container's dome.

The Board concluded that the panels and the dome of the Lane container were not "arranged or combined in the same way as recited in the claim." The Board reversed and concluded, "Regarding anticipation, we find the position taken by the Examiner to be unsupported . . . we do not agree with the examiner that Lane discloses . . . each **dome face portion further including a panel** proximate the body section," as recited in claim 39 . . . unless a reference discloses . . . all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102. *Net MoneyIN, Inc., v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008)."

5. *Ex parte Drosihn.*

Ex parte Drosihn[133] (described below) has the same fact pattern as *Ex parte Lambert*[134] (described above) in that in *Ex parte Drosihn*, an issue was that the structure described by the prior art reference has parts that are arranged differently than the arrangement required by the claim.

The opinion concerned a type of glove for wearing when using a cell phone or pad-type computer that employs touch-screen technologies, where the touch-screen employs capacitive or resistive buttons, instead of mechanical buttons. Capacitive touch-sensing requires electrical conduction between the user's fingers and the screen (or between a charge-holding glove and the screen). The invention was intended for use during cold weather, when the user prefers to wear gloves.

a. Background on the various gloves disclosed in the Specification. In one embodiment of the invention, the end of a "finger receptacle (80)" has an opening (81) through which an index finger can extend for touching an "interactive screen" and transmitting a signal. With touching, an electric charge is transferred from a conductive layer of material in the glove, to a computer screen or pad.

In another embodiment, the invention has a "conductive member (1552)" (see, FIG. 36) that is built into a "finger receptacle (1550)," where moving the "conductive member (1552)" allows the user to input a signal to the electronic device. In yet another embodiment, the invention has "tactility components (100) and (110)" in locations where the wearer of the inventive glove typically touches a computer screen. The "tactility components" can be made of silicon gel.

b. The claim. The claim required (emphasis added):

- "A hand covering comprising . . . a palm region, a cuff region, and . . . a finger receptacle"
- "a conductive member . . . coupled to the finger receptacle . . . configured to transfer a charge from a user wearing the hand covering to a capacitive-type touch-sensing interface on an electronic device"
- "the conductive member being configured to **extend though** the opening in the finger receptacle"
- "an insert configured to extend through the opening in the finger receptacle . . . the insert engaging an inner surface of . . . layer of flexible conductive fabric"

Please note the phrase "extend through," which defines the arrangement of two parts, the conducive member and the opening in the finger receptacle.

[133] *Ex parte* Drosihn, Appeal No. 2012-010774, Ser. No. 12/330,738, October 31, 2014.
[134] *Ex parte* Lambert, Appeal No. 2011-011826, Ser. No. 11/550,792, March 13, 2014.

c. The rejection. The claim was rejected as anticipated by US2005/0231471 of Mallard. The Board reiterated the examiner's basis of rejection, that is, how structures of the Mallard reference allegedly corresponded to elements in the claim. Mallard's FIG. 4 and the closest corresponding figures of the inventor (FIGS. 25 and 26) are shown below. Generally speaking, comparing arrangement of parts in a figure in the prior art reference with the arrangement of parts in a figure in the inventor's Specification, can help establish if (or if not) the prior art's figure has parts that are arranged in the same way as required by the claim.

The structures in the inventor's figures, according to para. 0089 of the inventor's Specification as originally filed, are as follows:

- conductive member (1170)
- hand covering (1100)
- outer surface (1124)
- projection (1130) that includes conductive member (1170)
- insert (1180)

d. Basis for reversal. The decision hinged on the fact that the parts of the Mallard device were not arranged as the corresponding parts in the claim. The Board observed that the way of arrangement in the Mallard device was, "disposed entirely outside the finger receptacle" while, in contrast, the way of arrangement in the claim was, "configured to extend through the opening in the finger receptacle."

In contrast to the Mallard device, the claim did not require that the corresponding part be disposed entirely outside, and it did not even require that the corresponding part be disposed partially outside, and in fact – all that was required was that the part be capable of ("configured to") extending partly or possibly entirely outside. The claim term, "configured to" roughly means, capable of.[135]

The Board determined that the parts of the Mallard device are not arranged as in the claim, and reversed the rejection, writing:

> Appellant then argues that "if the pointer end (21a) . . . of Mallard . . . is taken to be 'a conductive member,' the conductive member cannot be described as 'configured to extend through the opening in the finger receptacle' as recited in claim 1. Rather, the pointer end (21a) is configured to be disposed entirely outside the finger receptacle." . . . We agree.

In a nutshell, Mallard's "pointer end (21a)" was disposed entirely outside the finger receptacle while, in contrast, the corresponding structure in the claim (conductive member (1170)) was merely configured to extend through the finger receptacle. To be convinced how the Board detected this difference in the

[135]Sean Burke, *"Adapted To" after* Aspex, 98 J. Pat. & Trademark Off. Soc'y 594 (2016).

Mallard's arrangement of the "pointer end (21a)" and the inventor's "conductive member (1170)," this author suggests contemplating the following figures. The Board reversed, citing *Net MoneyIN* as the only case law supporting the holding.

FIG. 4 of Mallard reference

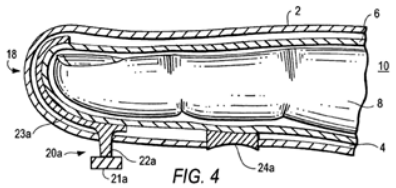


FIG. 4

FIG. 25 of the inventor's patent

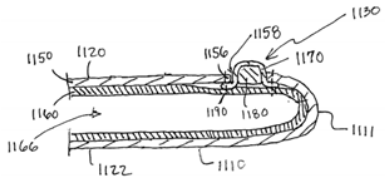


Fig. 25

FIG. 26 of the inventor's patent

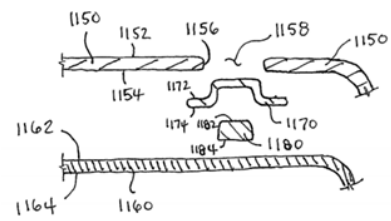


Fig. 26

e. Conclusion. *Ex parte Drosihn* demonstrates that a §102-rejection can be reversed, based solely on the rule of *Net MoneyIN*, under the fact-pattern where the arrangement of parts in the prior art device is differs from the arrangement of corresponding parts, as required by the claim. Other cases from the Board that set forth the same application of *Net MoneyIN* include, *Ex Parte Aow*,[136] *Ex parte Bennett*,[137] *Ex parte Lambert*,[138] *Ex parte Neuman*,[139] and *Ex parte Sareyka*.[140]

The take-home lesson from *Ex parte Drosihn* and these other cases is that, in drafting a rebuttal argument, the attorney or agent should consider taking the following steps:

- Confirm (or argue against) the examiner's allegation that the prior art reference discloses all of the structural elements of the claim.
- Confirm (or argue against) that the examiner's allegation that the prior art reference discloses all of the functional elements of the claim. A word of caution is that, it is unfortunately typical of U.S. patent examiners

[136] *Ex parte* Aow, Appeal No. US2008-0086804, Ser. No. 11/793,100, February 9, 2018.
[137] *Ex parte* Bennett, Appeal No. 2016-008371, Ser. No. 12/511,462, November 17, 2017.
[138] *Ex parte* Lambert, Appeal No. 2011-011826, Ser. No. 11/550,792, March 13, 2014.
[139] *Ex parte* Lambert, Appeal No. 2014-004493, Ser. No. 12/319,606, June 27, 2016.
[140] *Ex parte* Sareyka, Appeal No. 2014-003609, Ser. No. 13/694,393, May 11, 2016.

and also of European patent examiners, to dismiss functional elements as lacking patentable weight.[141]

- Determine if the examiner had considered and evaluated the patentable weight all terms of arrangement that are recited in the claim, when imposing the §102-rejection. If even one word of arrangement, from the claim, that was ignored or misinterpreted by the examiner, this provides an avenue for rebutting the §102-rejection.

6. *Ex parte Navia.*

Ex parte Navia[142] concerned a medical device for heart surgery. The opinion reveals the fact-pattern where the structure described by the prior art reference has parts that are arranged differently than the parts, as required by the claim. The device is used to implant an annuloplasty ring into a heart valve. The claim read as follows. The claim elements relating to hooks are shown in bold (emphasis added):

> Claim 1. An annuloplasty ring for repairing a cardiac valve . . . comprising:
>
> an expandable support member having oppositely disposed proximal and distal end portions and a main body portion between said end portions . . . and each of said wing members including at least one **fixation hook member**,
>
> said at least one **fixation hook member extending distally** between said wing member and a location laterally adjacent said main body portion when said at least one fixation hook member is embedded into a cardiac wall and the annulus of the cardiac valve to secure said annuloplasty ring in the annulus.

The Board's analysis concerned these issues:

- **Two locations in the prior art reference disclosing two distinct embodiments.** *Ex parte Navia* concerned the fact that the examiner had taken parts from two distinct embodiments of the prior art reference as a basis for disclosing elements in the claim.
- **Need to distinguish arrangement of parts in the prior art structure from arrangement of parts required by the claim.** *Ex parte Navia* concerned the fact that the "fixation hook" of the claim extended distally while, in contrast, the "hook members (42)" of the prior art reference extend in the proximal direction.
- **Need to distinguish arrangement of parts in the prior art structure from arrangement of parts required by the claim (continued).** In *Ex parte Navia*, the Board detailed how the McGuckin reference described its

[141] Tom Brody, *Functional Elements in Patent Claims, as Construed by the Patent Trial and Appeal Board (PTAB)*, 13 J. Marshall Rev. Intell. Prop. L. 251 (2014).

[142] *Ex parte* Navia, Appeal No. 2002/0002401, Ser. No. 10/850,508, January 24, 2013.

> "hook members (42)." In the Board's words, "The hook members (42) in FIG. 1 of McGuckin do not extend "distally," that is, in a direction from . . . proximal . . . towards . . . distal." In contrast to the non-distal direction of McGuckin's hook members, the Board observed that one of the inventor's figures (FIG. 6) revealed that inventor's hook extended distally. Referring to the inventor's FIG. 6, the Board stated, "As illustrated in FIG. 6, the letter A indicates the distal direction and the letter B indicates the proximal direction" (see, Specification, Col. 5, lines 12).

The claim was rejected as anticipated by US2002/0002401 of McGuckin.

a. Basis of rejection involved combining structures from two different embodiments. Regarding the examiner's use of information from two distinct embodiments (FIGS. 17 and FIGS. 811 of the McGuckin reference), the Board observed that McGuckin states that, "FIGS. 1-7 illustrate a first embodiment of the vascular device . . . and FIGS. 811 illustrate a second embodiment" (see, para. 0073 of McGuckin).

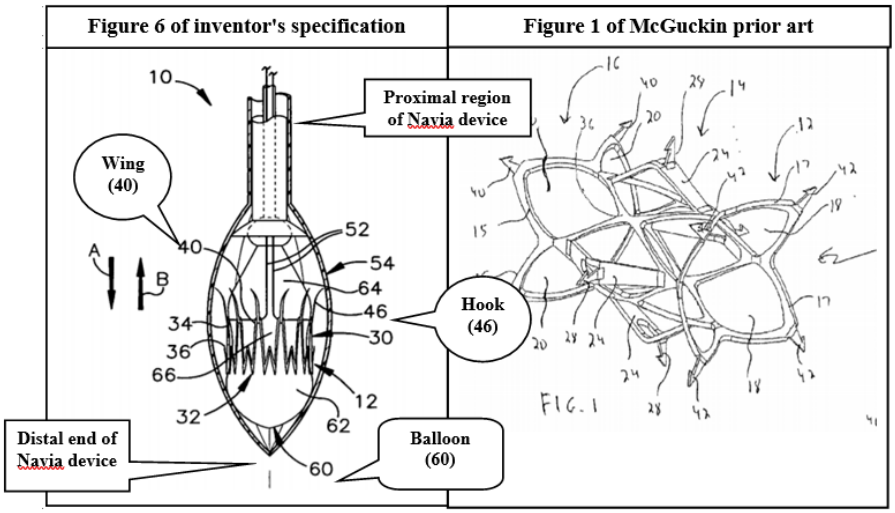
b. Rejection was based on the mistaken perception that the prior art disclosed the claim's requirement that a hook extend in distal direction. The main focus on any anticipation analysis is the claim. The claim required, "fixation hook member extending distally." This requirement is actually part of a larger requirement, stating that the hook member extended distally, when the hook was embedded in the heart. Thus, the best starting point in this anticipation analysis is the claim element reading:

> [S]aid at least one **fixation hook member extending distally** between said wing member and a location laterally adjacent said main body portion **when said at least one fixation hook member is embedded into a cardiac wall** and the annulus of the cardiac valve to secure said annuloplasty ring in the annulus.

The Board then turned to the McGuckin reference, and determined that it stated that the McGuckin hook members arguably extended in a perpendicular direction, or perhaps alternatively, in a proximal direction. Regarding the interpretations that McGuckin's hooks could be viewed as extending in a perpendicular direction or in a proximal direction (but NOT in a distal direction), the Board wrote:

> Applying the proper interpretation of "extending distally," **the hook members (42) in Figure 1 of McGuckin do not extend "distally"** (i.e., in a direction from the proximal portion (12) toward the distal portion (16)). **Rather, the hook members (42) in McGuckin appear to extend generally perpendicular** to a "distal" direction. See figs. 18-20. McGuckin specifically states that "vessel **engaging members (42) extend outwardly and proximally** from the framework of each of the four cells (17) at the proximal portion (12) of the device (10)." (emphasis added)

At this point in the analysis, the Board arrived at its holding and reversed, citing *Net MoneyIN*. But in this author's opinion, it might be of interest to see why the claim required that the hook members extend in the distal direction, even though the inventor's FIG. 1 discloses that the hook members (46) seem to extend in the proximal direction (opposite the direction required by the claim). The answer to this contradiction is that the claim refers to the direction of the hook members (46) when the hook members are embedded in the heart tissue, and that the inventor's Specification explains how the "hook members (46) swing downward in the distal direction A, and embedded into the cardiac wall (70)," when a constraining wire is released.



c. Construing of the claim's requirement that hooks extend distally by consulting inventor's FIG. 6 and by consulting the Specification's disclosure that the hooks swing "distally" when constraining wire is released. The inventor's FIG. 6, shown above, reveals that hook members (46) are pulled in the proximal direction, where this pulling is by constraining wire (52). The inventor's Specification describes how release of the constraining wire (52) allows the hook members (46) to spring out in what is called a "distal" movement resulting in the hook members (46) becoming embedded in the heart (the "cardiac wall (70)"). To this end, the Specification discloses that, "The constraining wire (52) is then released, which allows the main body portion (36) and the wing members (40) of the support member (30) to spring back to their convex shape . . . [a]s the wing members (40) bend radially outward, **the hook members (46) swing downward in the distal direction A**, and embed into the cardiac wall (70) . . . the embedded hook members (46) thus extend distally from the wing members (40) into the cardiac wall (70)."[143] This excerpt from

[143]See Navia's patent application Ser. No. 10/850,508 as eventually issued as U.S. Pat. No. 8,512,403 of Navia (Col. 9, lines 411).

the inventor's Specification refers to direction "B" as being the proximal and to direction "A" as being distal. Thus, even though FIG. 6 (reproduced above) shows the **hook members (46) extending to the proximal direction**, the claim requires that when embedded in the cardiac tissue, the hook members (46) must extend radially. Consistent with the claim's requirement, the Specification states that when the constraining wire (52) is released, **the hook members (46) swing in the distal direction A**.

d. Board determined that prior art's hooks are not distally oriented, but instead could be either characterized as extending perpendicular to the device or extending in proximal direction. As is self-evident from McGuckin's FIG. 1, the hook members (42) are located on the proximal portion end (12) of the McGuckin devices. Also, as might be self-evident from McGuckin's figure, the hook members (42) appear to tilt in the proximal direction (and not to the distal (16) direction). In the Board's opinion, McGuckin's hook members (42) actually extend more in a perpendicular direction, rather than towards the proximal portion end (12) or towards the distal portion end (16). In the Board's own words, the McGuckin's hook members (42) do not extend distally, but instead extend in a perpendicular direction, where in fact, McGuckin states that the hook members (42) "extend outwardly and proximally." The relevant excerpt from the opinion is in the footnote.[144]

The take-home lessons from this opinion include:

- **Need to determine if the claim is to a static device or, in contrast, to a device when in use.** When construing a claim element requiring a particular arrangement of parts in the claimed device, the attorney or agent should scrutinize the claim and determine if this particular arrangement occurs when the device is not being used or, in contrast, if this particular arrangement is assumed only when the device is being used.

- **Situation where the claim identifies an arrangement of parts, when the claimed device is in use.** If the arrangement required by the claim is assumed only when the device is in use, the attorney or agent should determine if this arrangement is assumed only in one particular step in a multi-step method of use.

- **Need to detect claim terms that define an interval of time where a first arrangement occurs followed by assuming a second arrangement.** Terms referring to a**ss**uming a particular arrangement during an action. In this opinion, the claim read, "fixation hook member extending distally between said wing member and a location laterally adjacent said main body portion **when** said at least one fixation hook member is embedded into a cardiac wall." (emphasis added) Proper claim construction

[144] "Applying the proper interpretation of "extending distally," **the hook members (42) in Figure 1 of McGuckin do not extend "distally"** (i.e., in a direction from the proximal portion (12) toward the distal portion (16)). **Rather, the hook members (42) in McGuckin appear to extend generally perpendicular** to a "distal" direction. See figs. 18-20. McGuckin specifically states that "vessel **engaging members (42) extend outwardly and proximally** from the framework of each of the four cells (17) at the proximal portion (12) of the device (10)."" (emphasis added)

followed by drafting the rebuttal requires recognition that the claim does not require a static arrangement, but instead requires an arrangement that is assumed at a specified time. This specified time is designated by the claim term, "when."

- **Ambiguity of the claim term "when."** In this author's patent prosecution experience, the claim term "when" can have two different interpretations. The first, is that "when" refers to a condition precedent. Here, the term "when" means in the time frame starting from a given action and extending into perpetuity. The second meaning is that "when" refers only to the short time frame when an action or event is taking place, and does not encompass the time frame after the action or event has been concluded. This author recommends avoiding the claim term "when" in order to avoid this ambiguity, and in order to avoid disputes with the patent examiner.

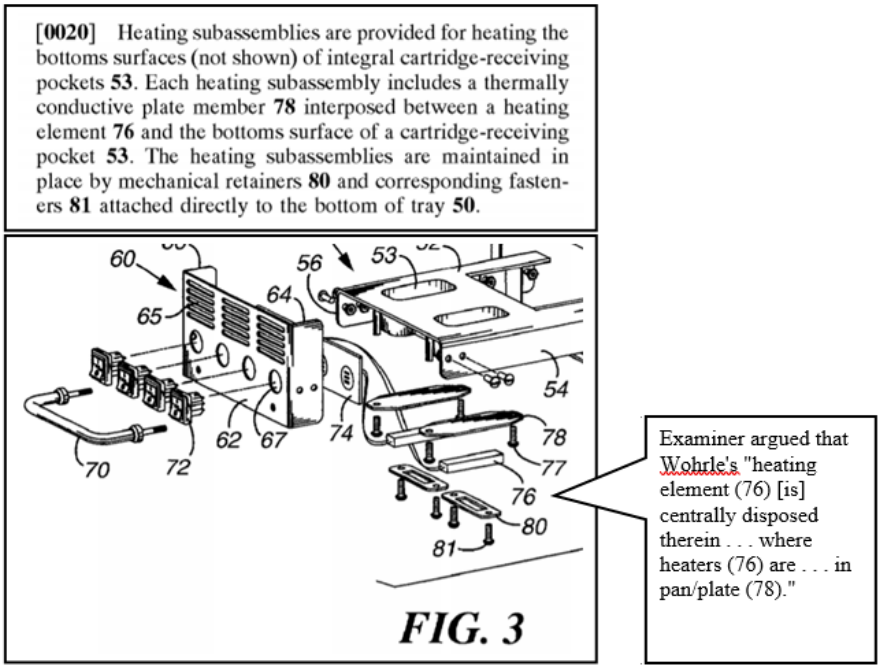
7. *Ex parte Neumann.*

In *Ex parte Neumann*[145] the issue revolved around the words of arrangement, "on" and "therein." The cited prior art reference disclosed a device where one structure was "on" another structure while, in contrast, the claim required a device where one structure was "therein" another structure. The opinion concerned a fragrance dispenser where the claims required (emphasis added):

- A housing
- Heating pans in the housing
- "Each of the **. . .** heating pans includes a corresponding **heating element centrally disposed therein**"
- A controller in the housing, where the controller adjusts the power sent to each heating element
- Reservoirs containing a fragrance, heatable by the heating elements

The claim was rejected as anticipated by US2002/0048530 of Wohrle. Wohrle's para. 0020 and Wohrle's FIG. 3 are reproduced below. Wohrle's para. 0020 describes the relationship between heating element (76) and conductive plates (78).

[145] *Ex parte* Neumann, Appeal No. 2014-004493, Ser. No. 12/319,606, June 23, 2016.



a. The examiner's perception of the prior art's arrangement. The goal of the examiner was to allege that the Wohrle reference disclosed the same structures, and in the same arrangement, as required by the claim. To reiterate, the claim required, "heating pans includes a corresponding heating element centrally disposed therein." The examiner's view was that Wohrle discloses, "heating element (76) centrally disposed therein . . . where heaters (76) are centrally located by (80/81) in pan/plate (78)." The examiner's perception was that heater (76) was "in" pan/plate (78).

b. The inventor's perception of the prior art's arrangement. In contrast, the inventor argued that Wohrle's heater (76) was not disposed within any heating pans. To this end, the inventor argued that, "the heating elements (76) of Wohrle are disposed **between** the conductive plates (78) and the mechanical retainers (80)," and that "therefore . . . the heating elements are not disposed **within** any . . . heating pans." (emphasis added)

c. Reversal. The Board reversed, writing that, "we are persuaded by Appellants that, 'it cannot be argued that an object disposed on or by another object is the same thing as an object disposed within another object because to do so would ignore the claim limitation "therein." . . . [t]hus, we agree that Wohrle does not disclose heating elements centrally disclosed within heating pans and

find the determination made by the Examiner to be an arbitrary (and therefore an unreasonable) interpretation of the disclosure in Wohrle."

The opinion concluded by citing only *Net MoneyIN* as the applicable case law, writing, "unless a reference discloses . . . not only all of the limitations claimed but also all of the limitations arranged . . . in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102. *Net MoneyIN, Inc., v. VeriSign, Inc*., 545 F.3d 1359, 1371 (Fed. Cir. 2008)."

8. *Ex parte Sareyka.*

In *Ex parte Sareyka*,[146] the failure of the prior art to disclose a device with parts arranged as in the claim is disclosed by the Board's comment, "the examiner does not . . . explain how Kreidt [the Kreidt reference] discloses a first tooth and a second tooth arranged relative to clear surface areas, as required by . . . Claim 1."

An excerpt from Claim 1, showing this required arrangement, is shown below. The invention related to suspended ceilings that hang from structural ceilings, and to connectors for the metal beams that form the grids in such suspended ceilings. This is the meaning of "tooth." The claimed connector is made of steel, with sharp, pointed teeth. The teeth are used for pinching into beams, using hand pliers. Claim 1 read (**emphasis** added):

> Claim 1. In a saddle connector capable of being secured to a steel bulb of a steel beam in a grid of a suspended ceiling . . . a **first clear surface area** on the first opposing side wall and a **first tooth** in the second opposing side wall that is **opposite the first clear surface area . . .** a **second tooth** in the first opposing side wall that is **opposite the second clear surface area** such that the **first tooth** and the **second tooth** are staggered along the opposing first and opposing second side walls . . . .

The claim was rejected as anticipated by U.S. Pat. No. 6,101,780 of Kreidt. The examiner based the rejection on Kreidt's disclosure of a first tooth and a second tooth, corresponding to the claim's first tooth and second tooth, and on Kreidt's disclosure of plates (11) and (13), corresponding to the claim's first clear surface and second clear surface. The examiner alleged that Kreidt's anchors (50) were equivalent to the "first tooth" and "second tooth" that are required by the claim. Fortunately for the inventor, the Board detected the following discrepancy between the Kreidt reference and the claim:

- **Kreidt disclosed tooth opposite tooth.** The Kreidt reference disclosed an arrangement where a first tooth is opposite another tooth on the opposing wall;

- **Claim required tooth opposite clear surface area.** In contrast to the Kreidt reference, the claim required an arrangement where, "a first tooth

[146] *Ex parte* Sareyka, Appeal No. 2014-003609, Ser. No. 13/694,393, May 11, 2016.

> in the second opposing side wall that is opposite the first clear surface area . . . a second tooth in the first opposing side wall that is opposite the second clear surface area."

To this end, the Board complained that the arrangement disclosed by the Kreidt reference was not the same as the arrangement required by the claim, writing (emphasis added):

> [T]he Examiner considers . . . upper middle anchor . . . to be Kreidt's first tooth and a staggered anchor . . . to be Kreidt's second tooth . . . the Examiner considers "the areas around the teeth" to the clear surface areas on Kreidt's plates . . . however, **Kreidt's first tooth . . . is "opposite" another tooth** on the opposing side wall . . . not an "area around the teeth" . . . [l]ikewise, **Kreidt's second tooth . . . is "opposite" another tooth** on the opposing side wall . . . not an "area around the teeth." . . . [a]s such, the Examiner does not adequately explain how Kreidt discloses a first tooth and a second tooth arranged relative to clear surface areas as required by claim 1.

The Board reversed. The only case law cited by the Board was *Net MoneyIN*.

V. FUNCTIONAL ELEMENT DIFFERENT IN PRIOR ART THAN IN CLAIM

In claims, a functional element is sometimes associated with a structural element, where the functional element serves to define the shape, size, chemical composition, or other features of the structural element.[147] This definition of shape, size, or chemical composition results from the fact that the functional element requires that the claim scope covers only structures that are capable of performing that function. An appropriate definition of the role of functional elements is provided by *In re Benson*, which stated, "Sometimes, as here, a material is as well defined by its intended use as by its dimensions or other physical characteristics, and in this case we know of no reason why the limitation in terms of use should not be placed in the claims and given meaning in their interpretation."[148]

The importance of evaluating the patentable weight of functional elements is vital, in view of the occasional practice of examiners to dismiss functional elements as being merely an "intended use" and of having no patentable weight. Also, the importance of evaluating the patentable weight of functional elements is even more emphasized, in view of the occasional behavior by examiners and the Board in citing archaic case law that is dismissive of functional elements.[149]

[147] Tom Brody, *Functional Elements in Patent Claims, as Construed by the Patent Trial and Appeal Board (PTAB)*, 13 J. Marshall Rev. Intell. Prop. L. 251 (2014); Tom Brody, *Functional Elements Can Ensure Allowance of Genus Claims*, 90 J. Pat. & Trademark Off. Soc'y 621 (2008).

[148] *In re* Benson, 418 F.2d 1251, 1254 (C.C.P.A. 1969).

[149] Archaic case law that dismisses functional elements includes, *In re* Otto, 312 F.2d 937, 941 (C.C.P.A. 1963); *In*

The following opinions reveal how validity analysis that focuses on function can be used to overcome rejections for anticipation, where the rebuttal is based on *Net MoneyIN*.

1. *Ex parte Gale.*

Ex parte Gale[150] concerned a claim with the structural element, "a controller" and where this structural element was associated with a 60-word functional element. The structural element with its associated functional element took the form (emphasis added):

> a controller configured to modulate a command for the accessory load such that **the auxilliary battery discharges and outputs** to the accessory load a discharge current having, in addition to a current component for driving the accessory load, an alternating current (AC) component, variable based on a temperature of the auxiliary battery, to cause the temperature of the auxiliary battery to increase.

What is emphasized in bold is the function of the auxilliary battery in discharging and outputting. The claim was rejected as anticipated by U.S. Pat. No. 5,362,942 of Vanderslice.

The Board's analysis hinged on comparing one word in the functional element ("outputs") with the closest corresponding language in the prior art reference that defines the same function. The closest corresponding language in the Vanderslice reference related, not to any "output," but instead to an "input." In detail, the claim required an "output" where a "battery discharges and outputs . . . a discharge current having . . . an alternating current (AC) component."

In contrast, the "input" that was described by the Vanderslice reference was, "FIG. 3 illustrates . . . AC heater power supply . . . is a . . . high current AC voltage source . . . AC heater power supply . . . thus heats battery." The issue is summarized by the bulletpoints:

- Claims require that a battery outputs a current;
- Venderslice reference requires an input of current to a battery.

The Board reversed, citing only *Net MoneyIN* as case law supporting the reversal, writing that, "For a prior art reference to anticipate a claim, it must disclose all of the limitations of the claim 'arranged . . . in the same way as in the claim.' *Net MoneyIN, Inc. v. VeriSign, Inc.*, . . . [i]n the instant case, Vanderslice's battery receives AC current as an ***input*** to the battery to cause the battery temperature to increase. In contrast, Claim 1 requires the . . . battery to ***output*** an AC component an AC component to cause the battery temperature to decrease . . . [t]hus, the elements of Vanderslice are not 'arranged in the same way as in the claim.'" (emphasis in original)

re Rishoi, 197 F.2d 342, 345 (C.C.P.A. 1952); *In re* Young, 75 F.2d 996, 998 (C.C.P.A. 1935); *In re* Smith, 36 F.2d 302, 303 (C.C.P.A. 1929).

[150] *Ex parte* Gale, Appeal No 2015-007628, Ser. No. 13/618,300, July 18, 2017.

In this author's opinion, the Board could instead have cited only *Verdegaal Bros. v. Union Oil Co. of California*,[151] as case law supporting the reversal. Where the issue is anticipation of a functional element, it is conceivable that citing *Net MoneyIN* may enhance the persuasive appeal of rebuttal arguments, in view of the fact that in claims with a functional element, it is essentially always the case that the claim is "arranged" so that the functional element occurs immediately after the structural element, and because the rule of *Net MoneyIN* requires that the prior art disclosure be "arranged . . . in the same way as in the claim."

2. *Ex parte Penzes*.

Ex parte Penzes[152] teaches that when drafting a rebuttal against a §102-rejection, the attorney or agent must not overlook whether the cited prior art reference discloses all of the functional elements that are in the claim. The opinion concerned a claim relating to a platform for supporting workmen performing aerial tasks, for example, when supported by a boom. In particular, the claim related to the need to support a hose filled with a liquid, when the workmen needed to use the hose. The claim was to a clamp to attach the hose to the platform. Please note that the claim included a function element taking the form of the word, "movable." The claim read (emphasis added):

> Claim 1. Apparatus for securing the working end of an elongated flexible conductor to an elevated work platform comprising,
>
> a locking C clamp having **first and second movable opposed jaws**, each having inner and outer edge portions and where **each jaw** includes a tip end,
>
> a work contacting pad attached to the inner edge of the tip end of **each of said jaws**,
>
> rigid adapter means for interconnecting two sections of a flexible conductor, said adapter means attached to the outside edge portion of the first clamping jaw.

The claim was rejected as anticipated by U.S. Pat. No. 5,626,320 of Burrell.

a. The examiner dismissed the patentable weight of the functional element. A view of the examiner's basis for rejecting the claim reveals that he was not interested in assessing the patentable weight of the functional element, "moveable." On this point, the examiner dismissively and incorrectly argued that, "claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function."[153] The examiner had failed to understand that if a claim includes a structural element coupled with a functional element, the functional element can further define the shape, size, and chemical makeup of the structure. Turning to the Burrell reference, the examiner argued that, "Furthermore, the opposed jaws defined by elements (20) and (30)

[151] Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628 (Fed. Cir. 1987). See also, Manual of Patent Examining Procedure (MPEP) §2131. Anticipation, 9th ed., Revision of January 2018.

[152] *Ex parte* Penzes, Appeal No. 2016-007181, Ser. No. 13/538,058, July 25, 2017.

[153] Examiner's Answer, Ser. No. 13/538,058, June 23, 2016.

of Burrell . . . are moveable . . . towards one another, and . . . away from one another."

b. The Board determined that the prior art device was not capable of the function. The Board reversed, solely because "elements (20) and (30) of Burrell" are not movable." The opinion stated, "We agree with Appellant . . . that that because Element (20) is not moveable, a person . . . would not recognize Element (20) as a moveable jaw, as claimed . . . [t]he prior art reference, in order to anticipate under 35 U.S.C. § 102, must not only disclose all elements of the claim within the four comers of the document, but must also disclose those elements "arranged as in the claim."

c. Reversal. The Board reversed the §102-rejection, citing only *Net MoneyIN* as the applicable case law. In this author's opinion, the Board could have ignored the rule of *Net MoneyIN* and instead have cited *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987) (See, MPEP §2131. Anticipation) in conjunction with another case, *In re Benson*, 418 F.2d 1251 (CCPA 1969). *Net MoneyIN* seems especially applicable to claim construction of claims with a functional element, because claims with a functional element have a special arrangement. The special arrangement is that a functional element is typically recited immediately after the structural element.

3. *Ex parte Van Maanen.*

Ex parte Van Maanen[154] concerned a component of an automobile engine for a hybrid vehicle. Hybrid vehicles use engines that can be driven by either gasoline or by a battery. The Board's analysis focused on a functional element in a claim. The associated structural element read, "a first ball check valve" and "a second ball check valve." The "functional elements" can be identified by the word "allows" (in conjunction with the wording that follows), and by the word "prevents" (in conjunction with the wording that follows). The relevant excerpt from the claim (Claim 22) reads (emphasis added):

> a first ball check valve that, in response to a first belt load acting on said first tensioner, **allows fluid flow** through said first ball check valve from said first fluid cavity to said second fluid cavity at a first time and **prevents fluid flow** through said first ball check valve from said first fluid cavity to said second fluid cavity at a second time that is different from the first time, and a second ball check valve that, in response to a second belt load acting on said second tensioner, **allows fluid flow** through said second ball check valve from said second fluid cavity to said first fluid cavity at a third time and **prevents fluid flow** through said second ball check valve from said second fluid cavity to said first fluid cavity at a fourth time that is different from the third time.

[154] *Ex parte* Van Maanen, Appeal No. 2015-004449, Ser. No. 12/113,420, May 26, 2017.

The claim was rejected as anticipated by U.S. Pat. No. 5,152,261 of Butterfield. The opinion reiterated the examiner's basis for rejecting the claim, writing that, "The examiner finds that Butterfield anticipates Claim 22 by disclosing . . . first and second ball check valves capable of allowing and preventing fluid flow from one cavity to the others."

The inventor argued that the Butterfield did not disclose the same functional element as required by the claim, because ***the Butterfield device required that the same direction of flow occur at all times*** while, in contrast, ***the claim required the ability to change direction of flow***, depending on the time. Regarding the failure of the prior art to disclose the same functional element as in the claim, the inventor argued that, "Butterfield does not show . . . a ball check valve that allows and prevents fluid flow . . . at different times. Instead, Butterfield discloses the check valves . . . which always permit flow in one direction . . . and always block the return flow in the opposite direction," referring to Butterfield's FIGS. 3 and 4 and to Col. 4, lines 5865.

The issue in *Ex parte Van Maanen* was not that the examiner refused to acknowledge the patentable weight of the functional element. Instead, the issue was that the examiner had overlooked the fact that the function possessed by the prior art device was different from that required by the claim. The Board reversed, citing only *Net MoneyIN* as the case law supporting the reversal.

VI. SEQUENCE OF STEPS IN METHODS CLAIMS

The following opinions, *Ex parte Farnan*,[155] *Ex parte Farries*,[156] and *Ex parte Poghosyan*,[157] concern methods claims, where a claim element required an ordering of steps in the claim, that is, where one step must be performed before another step. These two opinions demonstrate the application of *Net MoneyIN*, where the rule about, "arranged . . . in the same way as recited in the claim," can be used to refer to an arrangement taking the form of a sequence of consecutive steps.

The case law relevant to steps in methods claims includes, *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 13691370 (Fed. Cir. 2003), which provides a, "test for determining if the steps of a method claim that do not otherwise recite an order, must nonetheless be performed in the order in which they are written." This test is that, "First, we look to the claim language to determine if, as a matter of logic or grammar, they must be performed in the order written . . . [i]f not, we next look to the rest of the specification to determine whether it . . . directly or implicitly requires such a narrow construction . . . [i]f not, the sequence in which such steps are written is not a requirement."

[155] *Ex parte* Farnan, Appeal No. 2014-008349, Ser. No. 13/022,105, September 14, 2016.
[156] *Ex parte* Farries, Appeal No. 2015-001484, Ser. No. 13/392,570, September 1, 2016.
[157] *Ex parte* Poghosyan, Appeal No. 2016-008342, Ser. No. 13/853,321, April 21, 2017.

1. *Ex parte Farnan*.

Ex parte Farnan[158] concerned a medical device that included these parts:

- a cannula
- a shaft ("insertion device") that can be shoved through the lumen of the cannula
- a balloon ("expandable member") where the tip of the shaft is coupled to the balloon

The claim was a method claim, and it required the steps of:

- "Inserting an insertion device [the shaft] into the lumen of the . . . cannula, wherein . . . tip of the insertion device protrudes beyond . . . distal . . . portion of the inflow cannula"
- "Expanding the expandable member [the balloon] to . . . secure the . . . inflow cannula to the insertion device"
- "Inserting the tip of the insertion device [the shaft] and the distal end . . . of the inflow cannula into the chamber of the heart by pushing the insertion device through . . . the heart while the inflow cannula is . . . secured to the insertion device."

The claim was rejected as anticipated by U.S. Pat. No. 6,669,708 of Nissenbaum.

a. Relationship between the claim elements, balloon, insertion device, and inflow catheter. The Specification of the inventor's patent application states that the purpose of inflating the balloon is to secure the insertion device to the inflow cannula. To this end, para. 0034 of the Specification, as originally filed, discloses that the "inflatable member (224)" is a balloon that can be inflated to secure the "insertion device (200)" to the "inflow cannula (12)." Para. 0034 states that, "the inflatable member (224) inflated . . . which . . . secures the insertion device (200) to inflow cannula (12)."[159]

b. The inventor's Specification required the step of securing to occur during the step of insertion. The Board reiterated the inventor's characterization of the claim, in that the claim required that, "inflow cannula is . . . secured to the insertion device **during** insertion into biologic tissue." (emphasis in original)

c. In contrast to the claim, the prior art disclosed first, the step of insertion, followed by the step of securing. The Board wrote, "We agree with Appellants that Nissenbaum does not disclose . . . the step of 'inserting the tip of the insertion device and the . . . inflow cannula into the chamber of the heart by

[158] *Ex parte* Farnan, Appeal No. 2014-008349, Ser. No. 13/022,105, September 14, 2016.
[159] Specification, Ser. No. 13/022,105, as originally filed on February 7, 2011.

pushing . . . **while** the inflow cannula is . . . secured to the insertion device.'" (emphasis in original)

Further emphasizing the distinction between the Nissenbaum reference, which required balloon inflation after inserting the device, and the claim, which required "pushing the insertion device through . . . the heart . . **while the inflow cannula is** . . . **secured to the insertion device**" (emphasis added), the Board observed that, the structures cited by the examiner are not . . . secured to each other at the time the device penetrates the . . . heart . . . [i]nstead, as illustrated in [Nissenbaum], expandable member (40) of Nissenbaum is inflated . . . only after the device has already been inserted."

d. Reversal. The Board concluded that, "the examiner has not . . . rebutted Appellants' contention that, in Nissenbaum, 'the balloon appliance (40) is inflating only **after** the perforator instrument (10) . . . have been inserted through the wall (102).'" (emphasis in original)

The Board reversed, citing *Net MoneyIN* as the only case law serving as a basis for the holding. The take-home lesson as follows. Where the claim is a methods claim, and where the cited prior art reference describes a similar method with the same structures and with the same functions as required by the claimed method, a useful rebuttal strategy is to argue that the ordering of steps in the prior art method and in the claimed method are not the same.

2. *Ex parte Farries*.

Ex parte Farries[160] concerned a method for treating cancer with a drug. The drug took the form of a virus that was genetically engineered to express a new gene, where the new gene encodes thymidine kinase. The goal for giving the cancer patients a virus that produces this enzyme (thymidine kinase) is that the enzyme is required to increase anti-cancer activity of a second drug that is also given to the cancer patient.

The claim required three steps, which involved "determining," "confirming," and "administering" (emphasis added):

> Claim 19. A method of treating cancer in a human . . . comprising:
>
> a. **Determining** the level of immunity against a viral vector,
>
> b. **Confirming** said human has a measurable . . . immunity against said vector, and
>
> c. **Administering** to said human said viral vector.

The claim was rejected as anticipated by U.S. Pat. No.6,579,855 to Yla-Herttuala.

a. Disclosure of the prior art. The examiner observed that the Yla-Herttuala reference disclosed the following steps, each of which corresponded to one of

[160] *Ex parte* Farries, Appeal No. 2015-001484, Ser. No. 13/392,570, September 1, 2016.

the claim elements. The examiner alleges that the reference, "teaches **determining** and **confirming** a . . . level of immunity against a viral vector (column 5, lines 48-50 of Yla-Herttuala) . . . teaches **administering** the viral vector to the patients (column 3, lines 30-34 of Yla-Herttuala)." (emphasis added)

A view of Col. 5 (lines 48-50) of the Yla-Herttuala reference reveals that it reads: "Adenovirus antibodies increased remarkably in 3 of 7 adenovirus/tk-treated patients." The letters "tk" refers to the thymidine kinase gene that was genetically engineered to be part of the adenovirus genome. The Yla-Herttuala reference (Col. 3, lines 30-34) reveals that, "adenoviruses . . . were injected into the wall of the tumor . . . with 30-70 injections/patient."

b. Silence in the prior art reference to disclose the order of steps required by the claim. The Board did not dispute the examiner's finding that the Yla-Herttuala reference disclosed all of the elements of the methods claim. Instead, the Board observed that the claim, "first requires confirmation at step "b" that patient has a measurable level of immunity against the vector" before "continuing the method to step "c," that is, administering the viral vector."

Turning to the Yla-Herttuala reference, and to the fact that this reference is silent regarding any particular order for carrying out the steps, the Board wrote, "Because the process disclosed by Yla-Herttuala does not so restrict its viral vector adminstration step, it does not disclose the claimed method."

c. The reversal. The Board reversed, and cited only *Net MoneyIN* as the case law supporting reversal, writing, "we find that Yla-Herttuala does not anticipate . . . because Yla-Hertuala does not perform the steps . . . in the same way as recited in Claim 19. See *Net MoneyIN, Inc. v. VeriSign, Inc*. . . . . unless a prior art reference discloses . . . all of the limitations arranged in the same way as recited in the claim, it cannot . . . anticipate under 35 U.S.C. § 102."

Ex parte Farries provides the application of *Net MoneyIN*, where the rule about, "arranged . . . in the same way as recited in the claim," refers to an arrangement as a sequence of consecutive steps. The Board in *Ex parte Farries* was careful to explain why the claim required that the steps be carried out in a specific order. This explanation, was needed in order to justify reversal of the §102-rejection.

3. *Ex parte Poghosyan*.

Ex parte Poghosyan[161] concerned a methods claim or, more accurately, a claim to a computer system, where the claim required that the computer be able to perform a series of sequential steps.

The claim was to a computer sytem that included a computer-readable media, and a routine that analyzes digitally-encoded data output from:

(1) A system monitoring tool and stored in the computer-readable media, where the analysis and storage is performed by

(2) Identifying output data as **qualified data** or corrupted data,

[161] *Ex parte* Poghosyan, Appeal No. 2016-008342, Ser. No. 13/853,321, April 21, 2017.

(3) Identifying and sorting the **qualified data** into **categorized data**,
(4) Calculating normalcy bounds for the **categorized data**,
and storing the categorized data and normalcy bounds in the computer-readable data.

The claim was rejected as anticipated by US2008/0270071 of Marvasti.

a. Alleged correspondence between prior art's paragraphs with claim elements. In reproducing the claim, the Board added the numbers **(1)**, **(2)**, **(3)**, and **(4)** to keep track of these claim elements and to refer to corresponding locations in the prior art reference that disclosed these claim elements. The opinion explained that claim elements **(1)**, **(2)**, **(3)**, and **(4)** had been alleged, by the examiner, to be disclosed by the following paragraphs in the prior art reference:

> Claim element **(1)** disclosed by para. 0008
> Claim element **(2)** disclosed by para. 0030
> Claim element **(3)** disclosed by para. 0067
> Claim element **(4)** disclosed by paras. 0037-0041

b. Regarding the claim's requirement that one step be performed on data identified by the previous step in the claim. The opinion focused on claim elements **(2)**, **(3)**, and **(4)**, and scrutinized the fact that claim element **(2)** required the existence of "qualified data," the fact that claim element **(3)** required that an action be performed on the "qualified data" from the previous step (performed not on any type of "qualified data" but performed on the "qualified data" from the previous step), the fact that claim element **(3)** also required the existence of "categorized data," and the fact that claim element **(4)** required that an action be performed on the "categorized data" (performed not on any type of "categorized data" but performed on the "categorized data" from the previous step).

c. The prior art reference was silent regarding the performance of a step on data identified by a previous step. Taking a look at the Board's analysis, for example, of the claim's requirement that the system first identify and sort qualified data into categorized data, followed by calculating normalcy bounds for those categorized data, the Board wrote:

> However, the descriptions in paragraphs [0030], [0067], [0039], and [0041] do not follow the operations described by these elements. For example, the description in paragraph [0067] describes how the thresholds introduced in paragraph [0030] are determined, but paragraph [0067] does not describe a subsequent operation of sorting the data described in paragraph [0030] into categories.

d. The examiner's notion that the paragraphs in the prior art reference adequately disclosed performance of a step on data identified by a previous

step. The footnote reproduces the examiner's argument, as set forth in the Final Rejection,[162] that Marvasti's para. 0030 disclosed a type of data, and that Marvasti's para. 0067 disclosed the sorting of this data into categorized data.[163] As shown by the excerpt in the footnote, for each of the excerpts from the Marvasti reference, the examiner had typed the claim element that was allegedly disclosed by Marvasti's excerpt. The claim element is indicated in the excerpt, by highlighting in **bold font** one term in each claim element.

e. Reversal. The Board reversed, citing only *Net MoneyIN* as the relevant case law. In reversing, the opinion wrote, "Because the Examiner has not fully developed the record to establish how the **antecedent basis data relationships** required by contested limitations **(1)**, **(2)**, **(3)**, and **(4)** are disclosed by Marvasti, we find speculation would be required to affirm the Examiner on this record." (emphasis in original) Because of the lack of "antecedent basis" for the indicated paragraphs in the Marvasti reference, the Board characterized these paragraphs as "disparate," writing, " We note Appellants . . . cite to *Net MoneyIN, Inc.* v. *VeriSign, Inc.* . . . in support.Because the examiner cites to disparate paragraphs 3 in Marvasti in support of the anticipation rejection of contested limitations **(2)**, **(3)**, and **(4)**, we agree that *Net MoneyIN* is on point."

VII. RELATEDNESS OF DIFFERENT LOCATIONS IN THE PRIOR ART REFERENCE AS A BASIS FOR REJECTION; LACK OF A RELATEDNESS AS A BASIS FOR REVERSAL

Ex parte Charan,[164] *Ex parte Fiandaca*,[165] *Ex parte Mohan*,[166] *Ex parte Webster*,[167] and *Ex parte Zebedee*[168] focused on the issue of, "relatedness." *Net MoneyIN* provides the rule that:

> Thus, it is not enough that the prior art reference discloses . . . multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention. *See Arkley*, 455 F.2d at 587 ("[T]he [prior art] reference must clearly and unequivocally disclose the

[162] Final Rejection, U.S. Ser. No. 13/853,321, July 30, 2015.

[163] In the Final Rejection, the examiner argued: "The examiner . . . would like to point out to paragraph [0030] wherein Marvasti discloses "identifying abnormal events in complex systems" (that is, identifying output data as **qualified data . . .**). Further, note paragraph [0067], wherein Marvasti discloses screening the data and removing anomalous data points corresponding to abnormal events (that is, identifying the **qualified data**). Paragraph [0067] discloses, "After all data is screened, the data corresponding to each timeslot for all historical periods is **aggregated** . . ." Identifying and removing abnormal events (that is, corrupted data) and aggregating the remaining data (that is, the **qualified data**) based on timeslot correspondence (that is, sorting and **categorizing data** based on time) as disclosed by Marvasti reads on the above limitation as recited in Claim 1."

[164] *Ex parte* Charan, Appeal No. 2011010319, Ser. No. 11/529,128, December 11, 2012.

[165] *Ex parte* Fiandaca, Appeal No. 2010-006135, Ser. No. 11/607,816, August 16, 2018.

[166] *Ex parte* Mohan, Appeal No. 2014-008922, Ser. No. 12/495,617, June 1, 2016.

[167] *Ex parte* Webster, Appeal No. 2011-013348, Ser. No. 11/900,779, November 30, 2012.

[168] *Ex parte* Zebedee, Appeal No. 2010-006014, Ser. No. 12/077,046, October 8, 2010.

> claimed [invention] or direct those skilled in the art to the [invention] without *any* need for picking, choosing, and combining **various disclosures not directly related to each other** by the teachings of the cited reference.").[169]

This rule is relatively pro-inventor.

A footnote in the *Net MoneyIN* opinion contains further guidance on relatedness, where this particular footnote was reproduced by the Board in *Ex parte Fiandaca*.[170] The Board in *Ex parte Fiandaca* used this footnote as a basis for affirming the rejection. The footnote provides a rule that is relatively anti-inventor. The footnote in *Net MoneyIN* reads:

> *Glaxo Group Ltd. v. Apotex, Inc*., 376 F.3d 1339, 1348 (Fed. Cir. 2004) . . . states [that] . . . "Apotex is of course correct that anticipation requires that all limitations of the claimed invention are described in a single reference, rather than a single example in the reference." This does not say what VeriSign wishes it did, nor could it. This language, when read in context, stands for the unremarkable proposition that courts are not constrained to proceed example-by-example when reviewing an allegedly anticipating prior art reference. Rather, the court must, while looking at the reference as a whole, conclude whether or not that reference discloses all elements of the claimed invention arranged as in the claim.[171]

The author chose to reproduce the footnote from *Net MoneyIN* because it was invoked by the Board in various opinions, for example, in *Ex parte Charan*,[172] *Ex parte Fiandaca*,[173] and *Ex parte Webster*.[174]

Relatedness analysis finds a basis in *Net MoneyIN* which provides the rule, "Thus, it is not enough that the prior art reference discloses . . . multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention. *See Arkley*, 455 F.2d at 587 ('The prior art reference must . . . disclose the claimed invention . . . without any need for picking, choosing, and combining **various disclosures not directly related to each other** by the teachings of the cited reference.')."[175]

In this author's opinion, all applications of the rule of *Net MoneyIN* could include a statement on relatedness, where the rebuttal argument asserts that the two locations relied upon by the examiner in imposing the §102-rejection were not related to each other. Of course, if two locations disclose information, where one is labeled, "A first embodiment" and the other is labeled, "A second embodiment," then there is not much need to move a step further and argue that the first embodiment and second embodiment are not related to each other.

[169] *Net MoneyIN*, 545 F.3d at 1371 (**emphasis** added).
[170] *Ex parte* Fiandaca, Appeal No. 2010-006135, Ser. No. 11/607,816, August 16, 2018.
[171] *Net MoneyIN*, 545 F.3d at 1369, n.5.
[172] *Ex parte* Charan, Appeal No. 2011-010319, Ser. No. 11/529,128, December 11, 2012.
[173] *Ex parte* Fiandaca, Appeal No. 2010-006135, Ser. No. 11/607,816, August 16, 2018.
[174] *Ex parte* Webster, Appeal No. 2011-013348, Ser. No. 11/900,779, November 30, 2012.
[175] *Net MoneyIN*, 545 F.3d at 1371 (**emphasis** added).

1. *Ex parte Charan.*

Ex parte Charan[176] provides one of the best examples where an inventor's rebuttal argument failed. The argument failed because the information disclosed by various locations in the prior art reference were all related to each other, and because none of locations could be argued as providing information that was incompatible with or non-combinable with information from another of the locations. The opinion concerned an aerosol drug for treating bacterial infections. The claim required that the drug be for treating infections by Gram-negative bacteria. One type of drug for treating Gram-negative bacteria, for example, is "amikacin."[177]

The claim read:

> Claim 1. A unit dose container containing an aqueous composition for aerosolization, comprising:
> anti-Gram-negative antibiotic **. . .** being present in the unit dose container at an amount from about 400 mg to about 750 mg, and
> a concentration from about 40 mg/mL to about 200 mg/mL.

The claim was rejected as anticipated by U.S. Pat. No. 6,576,224 of Osbakken.

a. Rule of law applied by the Board. The Board acknowledged the fact that the inventor's rebuttal argument was based on *Net MoneyIN*'s rule against, "picking, choosing, and combining various disclosures not directly related to each other." On the other hand, the Board turned to a footnote (footnote 5) in *Net MoneyIN*, where the Board had reiterated one of the arguments of the case, and added its own thoughts on this argument. The argument had cited another case from the Federal Circuit, *Glaxo Group Ltd. v. Apotex, Inc.*, 376 F.3d 1339 (Fed. Cir. 2004). The Board reiterated the rule of *Glaxo v. Apotex*, *supra*, which was that the anticipation inquiry is, "not constrained to proceed example-by-example when reviewing an allegedly anticipating prior art reference. Rather, the [reviewer] must, while **looking at the reference as a whole**, conclude whether or not the reference discloses all elements of the claimed invention arranged as in the claim."[178]

b. Locations in prior art reference corresponding to claim elements. Turning to the Osbakken reference, the Board observed that the §102-rejection was based on disclosures of the following claim elements at the following locations (see, Table 1):

[176] *Ex parte* Charan, Appeal No. 2011010319, Ser. No. 11/529,128, December 11, 2012.
[177] Ramirez et al., *Amikacin: Uses, Resistance, and Prospects for Inhibition*, 22 Molecules 2267 (2017) (DOI:10.3390).
[178] *Net MoneyIN*, 545 F.3d at 1369, n.5 (**emphasis** added).

Table 1. Disclosures of elements of Claim 1 by information in various locations in U.S. Pat. No. 6,576,224 of Osbakken

Claim element	**Location in the Osbakken reference**	**Writing at that location that anticipates the claim element**
"anti-Gram-negative antibiotic"	Table 1. Agents and Dosages	"Amikacin . . . 50500 mg" (Please note that amikacin is an "anti-Gram-negative antibiotic. Thus, the word "amikacin" anticipates the claim element: "anti-Gram-negative antibiotic.)
"unit dose container containing an aqueous composition for aerosolization"	Col. 7 (lines 46-55)	"compositions . . . will be formulated as a solution in a unit dose . . . for aerosol administration"
"unit dose . . . from about 400 mg to about 750 mg"	Table 1. Agents and Dosages	"Amikacin . . . 50-500 mg" (Please note that the dose of 500 mg anticipates the claim element: "from about 400 mg to about 750 mg")
" a concentration from about 40 mg/mL to about 200 mg/mL"	Col. 7 (lines 46-55) and Table 1. Please note that Col. 7 (lines 46-55) expressly refers to Table 1.	The disclosure in Col. 7 (lines 46-55) that refers to Table 1 reads, "medications to be used . . . are listed in Table 1." Table 1 discloses an **amount**, "500 mg" which, when taking into account the **volume** of "4 mL" that is disclosed in Col. 9 (lines 17-22), results in a **concentration** ([500 mg]/[4 mL] = 125 mg/mL. The concentration of 125 mg/mL anticipates the claim element, "about 40 mg/mL to about 200 mg/mL"

c. Analysis of locations in the prior art reference according the Board's typical procedures. In the ***Ex parte Charan*** opinion, the Board refrained from embarking on its usual analysis of the nature of locations in the prior art reference. For example, the Board refrained from making any observations on whether one location was called, "first embodiment" and another was called, "second embodiment," and refrained from exploring the possibility that two different locations were incompatible with each other. Instead, the opinion observed that:

> Here, Osbakken teaches that appropriate medications may be found in Table 1, and they may be formulated as a solution in a unit dose vial . . . Osbakken then goes on to teach that the volume may be from 0.5 to 6.0 mls, with a preferred range between 2.5 to 3.5

> mls . . . [t]hus, as found by the Examiner, when 500 mg of amikacin (which is encompassed by the unit dose amount of about 400 mg to about 750 mg of claim 1) is dissolved in 3.5 mls, a concentration of 142.85 mg/ml is obtained . . . [t]hat finding of the examiner is not a picking and choosing of distinct teachings.

d. Information in the cited locations in the prior are reference are directed to a common purpose. In other words, the Board was stating that the locations used in asserting the §102-rejection all fit together in the same coherent way as instructions on different pages of a recipe book, for a complicated recipe. For example, for a bread recipe, the recipe will have **separate modules** on how to separate the egg white from the yolk, how to dissolve dried yeast and activate it, and how to preheat the oven and test its temperature. But all of these **separate modules** are used to support a common purpose.

Viewing the titles of the sections in the Osbakken reference, Col. 7 (lines 46-55) is under the heading, "General Description." Thus, it is self-evident that this heading does not impose any distinction therein from information in other locations. Also, Col. 9 (lines 17-22) resides under the heading, "General Preparation of a Unit Dose and Production of Aerosol." This author suggest that this disclosure is like a module in a recipe book that describes how to perform one of the techniques needed for the recipe. Also, the recitation in Col. 7 (lines 46-55) that refers to Table 1 reads, serves to connect the information in Col. 7 to the information in Table 1.

e. Analogy of the Osbakken disclosure with the disclosure in a recipe book. This concerns the location of Osbakken that refers to another location, by its recitation in Col. 7 (lines 46-55), "medications to be used . . . are listed in Table 1". An analogy can be found in a recipe for bread.[179] On page of the recipe book has location with a recipe for "Zopf. Swiss Braided Loaf," while another location on the same page has a recipe for "Variation. Vienna Bread." These two recipes are related to each other and are not distinct entities, as is evident from the recitation in the "Variation. Vienna Bread" recipe that refers to the Zopf recipe and that reads, "Make one quantity Zopf dough up to step 5." To conclude, the attorney or agent might want to keep the example of the Osbakken reference in mind, and also to keep the example of page with the Zopf recipe and Vienna Bread recipe in mind, when performing quality control on a draft argument that is based on *Net MoneyIN.*

f. Reversal. The Board reversed. This author suggests that attorneys and agents drafting a rebuttal that makes use of *Net MoneyIN* utilize *Ex parte Charan* as a quality control tool. Here, the attorney or agent completing a draft rebuttal argument should compare the details of the argument with the situation in *Ex parte Charan*. If the details of the argument are similar to that found in *Ex parte Charan*, that is, where the different locations in the prior art reference are related

[179] Treuille and Ferrigno, Bread (Dorling Kindersley, Ltd. London, England 2007), page 117.

to each other, or are directed to a common purpose, then the attorney or agent should consider abandoning that argument.

2. *Ex parte Fiandaca*.

The following opinion discloses how relatedness of information from two different locations in a prior art can be established, thus justifying the basis of a §102-rejection. As shown below, relatedness of information from paras. 0014 and 0015 was shown, because para. 0015 follows immediately after para. 0014. Also, as shown below, relatedness of para. 0077 to para. 0015, was shown because para. 0077 simply provides further details on the embodiment of para. 0015 (and not relating to a different embodiment).

Ex parte Fiandaca[180] is distinguished by the fact that the inventor's rebuttal argument was at the weak end of the spectrum. The argument that the rejection rested on combining information from different locations in the prior art reference, but without any attempt to argue that the locations belonged to different "examples," without any attempt to argue that the locations belonged to different "embodiments," and without any attempt to argue that the information from the different locations were not combinable.

The claim was rejected as anticipated by US2004/0115692 of Linder. The Board focused on para. 0008, para. 0014, para. 0015, and para. 0077, of the Linder reference. The claim was to a method for detecting a microorganism. The microorganism was detected by releasing the DNA (the chromosome) from the microorganism, and mixing this DNA with a chemical reagent (a probe) that binds to this DNA. By binding to the microorganism's DNA, the lab technician is able to determine if the microorganism is present or is not present.

The claim required that the probe was a "Peptide Nucleic Acid" (PNA) probe. The claim also required that the mixture of this probe with the microorganism's DNA be carried out in a solution of alcohol. Thus, the rejection was based on combining information from various locations in the Linder reference that disclosed a PNA probe, disclosed incubating in alcohol, or that disclosed that this alcohol can be at a concentration of "40% to 60%." The claim read:

> Claim 41. A method for detecting the presence of a microorganism in a sample, comprising:
>
> a) combining the sample with an aqueous alcoholic solution containing **peptide nucleic acid (PNA) probes** specific for the microorganism and labeled with **a detectable label**, wherein the aqueous **alcoholic solution** comprises **. . . about 40% to about 60% . . . methanol . . .**
>
> b) incubating the combined solution **. . .** and,
>
> c) detecting whether or not the PNA probes are bound to DNA or RNA of the microorganism in the sample.

a. Claim elements disclosed by the prior art reference. The claim elements shown in **bold font** find a corresponding disclosure in the emphasized (**bold**

[180] *Ex parte* Fiandaca, Appeal No. 2010-006135, Ser. No. 11/607,816, August 16, 2018.

font) parts of Linder's para. 0014, para. 0015, and para. 0077, as shown below. Linder's "sensor molecule" is equivalent to the claim's requirement for, "peptide nucleic acid (PNA) probes specific for the microorganism and labeled with a detectable label." Linder's para. 0015 discloses the claim's requirement for "alcoholic solution," while Linder's para. 0077 discloses the claim's requirement for methanol at a concentration of "about 40% to about 60%."

The Board relied on Linder's paras. 0008 and 0014 for their disclosures of the claim's requirements for performing probebased assays in an alcohol solution, and on Linder's para. 0015 for its disclosure of using peptide nucleic acid (PNA) probes in an alcohol solution for hybridization assays to test the presence of microorganisms. Also, the Board relied on Linder's para. 0077 for its disclosure of "40% to 60% alcohol."

b. Locations in the prior art reference. Linder's para. 0014, para. 0015, and para. 0077, are reproduced below:

> [0014] The inventors have advantageously discovered that incorporation of a **sensor molecule** into an alcohol-containing preservative solution allows for the performance of multiple cytological procedures in one solution, thereby decreasing the number of steps and the amount of time required to process a sample and increasing the number of assays which can be performed on a given sample in a given time period.
>
> "[0015] For example, a FISH procedure, which is cumbersome and requires multiple steps and manipulations, can be simplified if **performed within an alcoholic . . . solution** such as PreservCyt containing a sensor such as **a PNA probe to detect the nucleic acid target . . .**
>
> [0077] In one embodiment of the invention, the **alcohol** is present at a level sufficient for fixing and preserving the sample component of interest, and **may be present in an amount greater than about 40% and less than about 60%,** and may be about 45% or more, and may be about 55% or less . . . [f]or this embodiment, the solution contains approximately 50% **methanol**, by solution.

c. Reasons why the grounds for the §102-rejection, which relied on various locations in the prior art reference, were not reversible under *Net MoneyIN*. *Net MoneyIN*, 545 F.3d at 1370 provides the rule that:

> Although the prior art reference could be said to contain all of the elements of the claimed invention, it did not anticipate . . . because it . . . disclosed [a] . . . device, composed of parts distinct from those of the claimed invention, and operating in a different way to process different material differently . . . [t]he reference thus was deficient because it did not disclose the elements of the claimed invention "arranged as in the claim" as required by 35 U.S.C. § 102.

The Board explained why the Linder reference disclosed the claim elements, in a way that was "arranged as in the claim," because of the fact that Linder's para. 0015 occurred immediately after Linder's para. 0014. On this point, the Board wrote that, "Thus, given Linder's discussion that its invention is advantageous because it incorporated a sensor into an alcoholic solution, **immediately followed** by a discussion about **. . .** process using PNA probes and a methanol-containing preservative solution." (emphasis added)

Moreover, although not stated by the Board, it is self-evident that the information in Linder's para. 0077 represents a further development of information from Linder's para. 0015 (and does not in any way represent an embodiment separate from para. 0015). To repeat, para. 0015 states that Linder's method uses alcohol, while para. 0077 states that the alcohol can be at 40% to 60%, and that the alcohol can be methanol.

The take-home lesson from this opinion, is that rebuttal arguments that invoke *Net MoneyIN* need to disclose why information from two different locations in the prior art reference are not related to each other. Non-relatedness can be established where one location is named, "first embodiment" and the other location is named, "second embodiment." A more vigorous argument for non-relatedness is at hand where the first embodiment contains a chemical, structure, or some other substance, that does not exist in the second embodiment, or where it can be argued that the two embodiments are incompatible with each other.

3. *Ex parte Mohan.*

Ex parte Mohan,[181] described at an earlier point in this article, also concerns an opinion from the Board, where the focus was a relatedness inquiry. In *Ex parte Mohan*, the Board established that information from two remote locations was arguably related, because the first location disclosed a concept and because the second location disclosed a working example of that same concept. As a result of the Board's relatedness inquiry, the Board affirmed the rejection.

4. *Ex parte Weber.*

Ex parte Weber[182] concerned a claim to a medical device taking the form of a stent. The claim was as follows (emphasis added):

> Claim 1. A medical device comprising at least one **composite region**,
>
> said composite region **. . .** wherein said medical device comprises a **stent** having two ends, an interior surface and an **exterior surface**,
>
> wherein said **composite region comprises a first layer** comprising **. . .** a **therapeutic agent . . .** wherein **the first layer is disposed over at least a portion of the exterior surface of the stent**.

The claim was rejected as anticipated by US2006/0136042 of Holman.

[181] *Ex parte* Mohan, Appeal No. 2014-008922, Ser. No. 12/495,617, June 1, 2016.
[182] *Ex parte* Weber, Appeal No. 2011-013348, Ser. No. 11/900,779, November 30, 2012.

a. Prior art reference did not expressly disclose the disputed claim element. The issue is whether the Holman reference disclosed the claim element requiring that a therapeutic agent be disposed over the exterior surface of the stent. In imposing the rejection, the examiner referred to various locations of the Holman reference, including, Holman's paras. 0010, 0017, 0021, 0060, 00650066, and FIGS. 9 and 11. If one reviews the Holman reference, it will be self-evident that there does not exist any disclosure that the exterior surface of any stent has any therapeutic agent (drug) disposed on it. On this point, the inventor argued, "these portions of Holman do not identify which **. . .** surfaces of the stent are covered, whereas the claims **. . .** require that **. . .** the therapeutic agent is disposed over **. . .** the exterior surface of the stent."[183]

b. Various compatible locations in prior art reference, when pieced together, disclosed the disputed claim element. A view of the Holman reference, together with observations from the Board, reveals that the Holman reference reasonably discloses the claim element that requires, " a stent having **. . .** an exterior surface **. . .** comprises a first layer comprising **. . .** a therapeutic agent **. . .** wherein the first layer is disposed over at least a portion of the exterior surface of the stent."

All of the elements in this excerpt from the claim are disclosed by the Holman reference, when taking into account, as a whole, information from the following locations:

- **Para**. **0016**
- **Para**. **0066**
- **FIG**. **9**
- **Combination of Claim 4 and Claim 11**

These locations in the Holman reference disclose the following:

- **Para**. **0016.** Para. 0016 discloses that a therapeutic agent can be applied to the stent, in its writing that, "[0016] In at least one embodiment of the invention, a therapeutic agent may be applied to the stent **. . .** [t]he agent may be on the surface of the stent . . ." Regarding this recitation of "surface" which, as can be seen, failed to set forth any distinction between "interior surface" or "exterior surface," the reasoning of the Board appeared to be as follows. The reasoning of the Board appeared to be that, because the Holman reference did not exclude applying any coating to the exterior surface, it can be concluded that para. 0016 constituted a disclosure that the exterior surface can be coated with a therapeutic agent (thereby, disclosing the claim element requiring coating the exterior surface with a therapeutic agent).
- **Para**. **0066.** Para. 0066 discloses that where the Holman stent has a polymer, the therapeutic agent can be mingled within the polymer. Para. 0066

[183] Reply Brief Under 37 C.F.R. §41.41, July 22, 2011.

reads, "Where the therapeutic agent includes a polymer agent, the polymer agent may be a polystyrene-polyisobutylene-polystyrene triblock copolymer (SIBS) . . ."

- **FIG. 9.** FIG. 9 discloses that the stent framework (50) has a polymer (SIBS sheet (65)), and that this polymer (65) has both exterior and interior surfaces. The Board scrutinized Holman's FIG. 9 and observed that, "we find that figure 9 shows the SIBS sheet (65) on both exterior and interior surfaces of the [stent] framework **. . .** [u]pon our review of Holman, we do not find any language excluding the exterior surface of the stent from among the potential surfaces to be coated with the therapeutic agent."

- **Combination of** Claim **4 and** Claim **11.** This author determined that the combination of Holman's Claim 4 and Claim 11 constitutes a disclosure of the external surface of the stent being coated with a polymer (the SIBS polymer). Holman's Claim 4 reads, "The stent of Claim 1, the expandable **framework having an interior and an exterior**, wherein the at least one carbon nanotube sheet is disposed about the **exterior of the expandable framework**." Holman's Claim 11 reads, "The stent of claim 1 wherein a **SIBS sheet is used in affixing** at least one carbon nanotube sheet **to the framework**." In other words, the combination of these two claims discloses the claim element "composite region comprises a first layer comprising **. . .** a therapeutic agent **. . .** wherein the first layer is disposed over at least a portion of the exterior surface of the stent," because the combination a polymer (SIBS) is used to affix a nanotube sheet to the stent framework, thereby resulting in the polymer being disposed over the exterior surface of the stent framework. Holman's para. 0066 discloses that the SIBS polymer can include a therapeutic agent. Also, Holman's FIG. 9 shows the nanotube sheet and the stent framework, with the SIBS polymer in between.

The opinion reproduced Holman's FIG. 9. FIG. 9 discloses the structures, SIBS sheet polymer (65), nanosheets (40), and stent framework (50).

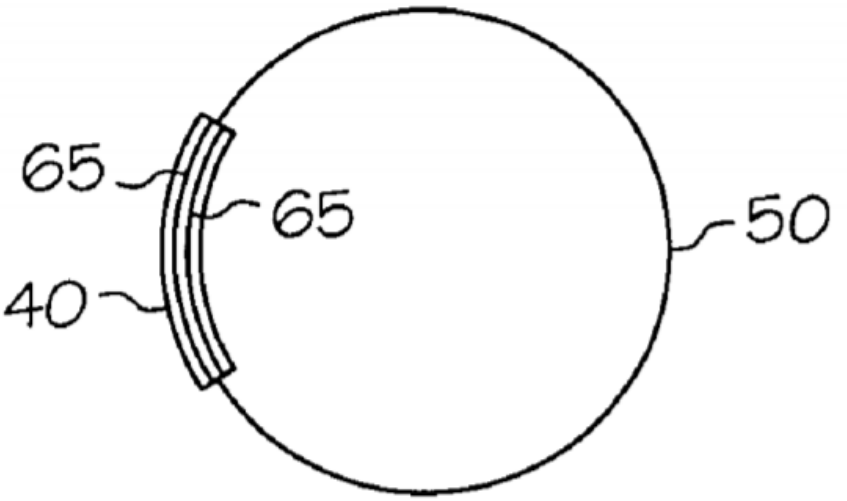


FIG. 9

The Board reversed, on the basis that the polymer (SIBS sheet) has an exterior surface and an interior surface. Thus, because Holman's para. 0066 discloses that a therapeutic agent includes a polymer, and because Holman's FIG. 9 discloses that the polymer has an exterior surface and an interior surface, the Board determined that this constitute a disclosure of what was required by the claim, namely, a stent with an exterior surface where the exterior surface contained a therapeutic agent.

c. Rule of law relating to the "reference as a whole." The Board set forth the applicable rule of law, writing that:

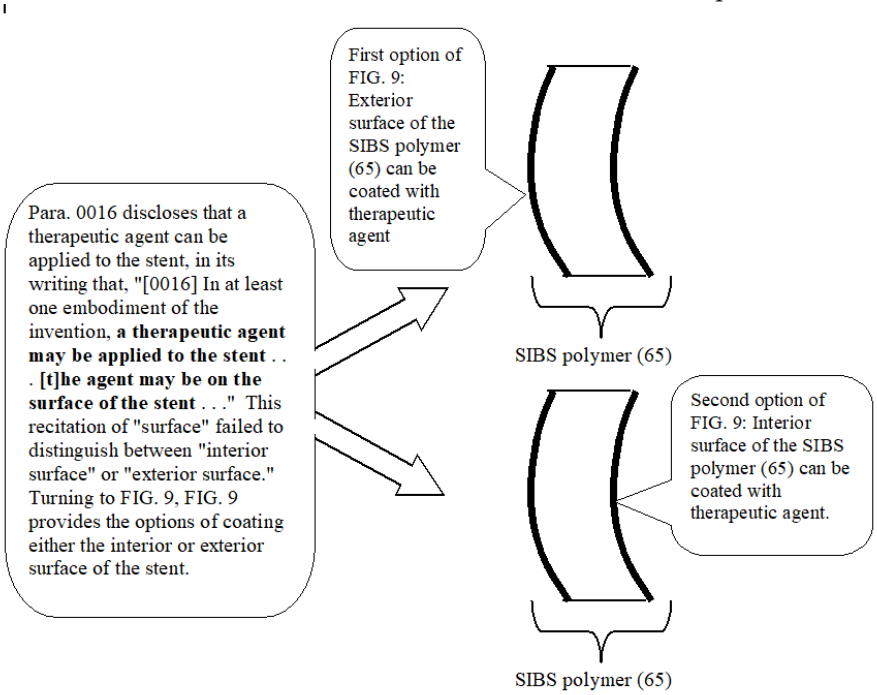
> [R]eview requires . . . looking at the reference as a whole . . . and concluding whether or not that reference discloses all elements of the claimed invention arranged as in the claim . . . [h]ere, we find that the examiner has combined disclosures that are, "directly related to each other" by Holman's teaching . . . [t]hus we agree with the examiner that Holman, as a whole, anticipated the claimed invention.

The Board reversed, citing *Net MoneyIN*, further stating that the applicable rule of law:

> Determining whether a prior art reference anticipates . . . is "not constrained to proceed examplebyexample . . ." *Net MoneyIN, Inc. v. VeriSign*, Inc. 545 F.3d 1359, 1369, footnote 5 (Fed. Cir. 2008). Rather such review requires "looking at the reference as a whole, and concluding whether or not that reference discloses all elements of the claimed invention arranged as in the claim." Here, we find that the Examiner has combined disclosures that are directly related to each other.

d. Take-home lesson regarding prior art disclosures taking the form of one or more options. The unique take-home lesson from this opinion is that anticipation can be found where a prior art reference discloses a claim element by way of one or more options. In this situation, taking one option, can disclose a particular claim element, while taking the other option, is silent regarding the claim element.

The following diagram is based on the Holman reference, which disclose two options. Although neither of these two options is disclosed by any one location in the Holman reference, the combination of para. 0066 and FIG. 9, when taken together, discloses the options. Thus, the attorney or agent drafting a rebuttal argument that makes use of *Net MoneyIN*, should consider scrutinizing the prior art reference to see if, "looking at the reference as a whole . . . whether or not that reference discloses all elements of the claimed invention," and where the disclosure of all the claim elements is obscured and made less apparent because the disclosure takes the form of a series of one or more options.



5. *Ex parte Zebedee.*

Ex parte Zebedee[184] concerned a claim to a method for detecting the response of patients to hepatitis C virus (HCV) infections. The method detected whether the patient was infected with HCV by measuring response of the patient's immune system to the virus, and where the claimed method detected the materialization in the patient's bloodstream of antibodies against HCV.

In *Ex parte Zebedee*, the Board contemplated different locations in the prior art reference where the locations did not have different names, such as different names like, Example 1 and Example 2, or Example 1 and Table 5, or Background Information and Figure 5. Instead, the Board contemplated the different locations and engaged in a relatedness analysis. The fact that the Board conducted a relatedness analysis is demonstrated by the Board's statements regarding, "disparate disclosures" and "disclosures which, in our view, are not sufficiently related."

a. The claim. The claim required the following steps, and where the steps were performed on "a body fluid sample":

- **Initiating the reaction.** The step of "initiating an immunoreaction by contacting a body fluid sample with . . . pure and isolated HCV capsid antigen." This type of "immunoreaction" involves binding of the anti-HCV antibody present in the body fluid sample with the HCV capsid antigen. If the body fluid sample does not contain any antiHCV antibody, then immunoreaction cannot occur.

- **Maintaining the reaction.** The step of "maintaining said immunoreaction for a time period sufficient for allowing antibodies against the HCV capsid antigen to immunoreact . . . to form an immunoreaction product." The term "immunoreact" refers simply to the binding of any antiHCV antibody to the HCV capsid antigen to form a stable complex (an antibody/antigen complex).

- **Detecting.** The step of "detecting the presence of said immunoreaction product." The product is the antibody/antigen complex.

The claim used the abbreviation "NANBV" as a term that encompasses hepatitis C viruses (HCV). For ease in reading, this author replaced "NANBV" with "HCV."

b. Examiner's understanding of the nature of the prior art's disclosure. The claim was rejected as anticipated in view of U.S. Pat. No. 5,350,671 of Houghton. In imposing the §102-rejection, the examiner alleged that the Houghton reference disclosed all the elements of the claim, including, "pure and isolated HCV capsid antigen." In contrast to the examiner's position, the inventor argued that the Houghton reference only disclosed, "a crude, rather than purified capsid preparation." Houghton's disclosure of crude capsid

[184] *Ex parte* Zebedee, Appeal No. 2010-006014, Ser. No. 12/077,046, October 8, 2010.

preparation is at Columns 82-83 of the Houghton reference. Please note that the claim required "pure HCV capsid antigen," and that it did not require "crude" HCV capsid antigen.

The examiner attempted to justify his basis for the §102-rejection by pointing to another part of the Houghton reference (Col. 26), that actually disclose pure HCV antigens for use in immunoassays. The relevant excerpts from Houghton's Col. 26 is shown below. This excerpt discloses a "pure and isolated HCV capsid antigen" in view of the fact that the excerpt recites:

- "HCV polypeptides" (col. 26, lines 13-14). To provide scientific background information, the term "HCV polypeptides" is generally understood to mean HCV polypeptides that are pure and isolated.
- "Expression vectors encoding antigenically active regions" (col. 26, lines 13-14). This constitutes a disclosure of "pure and isolated," as is required by the claim, because in order to manufacture "expression vectors encoding antigenically active regions" you need to have HCV polypeptides that are pure and isolated.
- "These antigenically active regions may be derived from coat or envelope antigens" (Col. 26, lines 14-16). Because of the word, "derived," this particular disclosure constitutes a disclosure of polypeptides that were purified and isolated.

Houghton's also referred to, "Such polypeptides can be used as diagnostics" (Col. 26, line 58, of Houghton). This phrase was used in the examiner's basis of rejection to justify combining all of the information in Houghton's Col. 26 with the information in another part of the Houghton reference (Cols. 82-83), in order to arrive at an anticipating disclosure that discloses all of the elements of the claim. In other words, this phrase was used as a basis for arguing that the disclosures in Col. 26 (line 58) and Cols. 82-83), were all part of one embodiment.

c. Board's understanding of the nature of the prior art's disclosure. A turning point in the Board's analysis occurred where the Board reiterated an admission made by the examiner. The examiner had admitted that, "while each of the limitations is **not necessarily disclosed in the same part of the specification**, each of the limitations is disclosed." (emphasis added) Inspired by this admission, the Board referred to Houghton's Cols. 82-83, which disclosed details of the immunoassays for HCV capsid protein, and where the immunoassay used a patient's bodily fluid. Also, the Board referred to Houghton's Col. 26, which disclosed pure HCV capsid antigen, and that the pure HCV capsid antigen "can be used as diagnostics."

d. The reversal. The Board reversed, based on the fact that the rejection had been based on combining disclosures from two separate locations in the Houghton reference, thus requiring picking and choosing to arrive at all of the elements of the claim. In reversing the rejection, the Board complained that,

"Nor has the examiner explained how this section of Houghton [Col. 26] necessarily described the use of that purified capsid antigen in antiHCV antibody detecting assays." Emphasizing this point, the Board complained that, "the **disparate disclosures** relied upon by the examiner lack direct relation to each other. Also, the Board complained that, "the examiner has relied on disclosures which, in our view, are **not sufficiently related** to describe." (emphasis added)

The Board based its reversal on *Net MoneyIN* and *In re Arkley*.

This author points out the following, additional distinction, between the nature of the information disclosed in two different locations of the Houghton reference. The examiner's basis of rejection was based on combining disclosures from two different locations in a prior art reference, where first location took the form of **background information** and the second location took the form of a **working example**. Column 26 takes the form of background information, because the writing is in the present tense (not past tense) and because the writing cites publications that provide guidance for laboratory methods. In contrast to the disclosure of Col. 26, Columns 82-83 take the form of a working embodiment of the Houghton invention. As can be seen, the narratives in Cols. 82-82 are in the past tense (not present tense).

VIII. CASE LAW ON PICKING AND CHOOSING, AS IT APPLIES TO §102-REJECTIONS IS DISTINCT FROM CASE LAW ON PICKING AND CHOOSING, AS IT APPLIES TO OBVIOUSNESS REJECTIONS.

Doctrines from the obviousness inquiry sometimes materialize in rejections for anticipation. In other words, in rejections under 35 U.S.C. § 102, and that are based on only one prior art reference, the examiner allows doctrines associated with the obviousness inquiry to creep into the rejection under 35 U.S.C. § 102. For example, when imposing §102-rejections based on "picking and choosing" information from separate locations in one particular prior art reference, patent examiners sometimes attempt to justify this type of "picking and choosing" on doctrines that belong to the obviousness inquiry.

This inappropriate invocation of obviousness doctrines is found in:

- *Ex parte Flood*[185]
- *Ex parte Sun*[186]
- *Ex parte Tannenbaum.*[187]
- *Ex parte Wittorf*[188]

[185] *Ex parte* Flood, Appeal. No. 2017-004571, Ser. No. 14/270,949, October 23, 2017.
[186] *Ex parte* Sun, Appeal No. 2015003994, Ser. No. 12/861,844, September 6, 2016.
[187] *Ex parte* Tanenbaum, Ser. No. 13/311,675, May 25, 2016.
[188] *Ex parte* Wittorf, Appeal No. 2014-006268, Ser. No. 11/919,958, February 19, 2016.

Also disclosed below, is an account of laundry list doctrine, and the separate bodies of Federal Circuit case law that apply to laundry list-type arguments used to overcome rejections under 35 U.S.C. § 102 and to overcome rejections under 35 U.S.C. § 103.

If any rejection under 35 U.S.C. § 102 had relied on any doctrines from the obviousness inquiry, the attorney or agent should consider drafting a rebuttal argument that a *prima facie* case of anticipation had not been properly asserted and that the rejection should be withdrawn.

1. *Ex parte Flood.*

Ex parte Flood[189] concerned a system for transmitting a signal and for switching from one wireless communication channel to another. The claim required a "plurality of frequencies." The claim's requirement for an "adaptive frequency hopping scheme" made use of this "plurality of frequencies." The claim is reproduced, in part, below (emphasis added):

> Claim 1. A system, comprising: a first device and a second device configured to communicate over a selected wireless communication channel selected from a band of channels or over a selected set of channels used in an **adaptive frequency hopping scheme**;
>
> the first device configured to transmit a probe signal that has a **plurality of frequencies** contained within the band of channels;
>
> the second device configured to determine a signal strength of the probe signal for each of a **plurality of potential communication channels** within the band of channels;
>
> and the first and second devices configured to switch to another wireless communication channel or set of channels based at least in part on the signal strength of the probe signal for each of a **plurality of potential wireless communication channels**.

The claim was rejected as anticipated by US2008/0180273 of Kyle.

In the Appeal Brief, the inventor argued, "The rejection . . . [is] relying on two separate systems: a first one is described in its Background section as a wireline probe, and the other one is distinguished from the wireline probe . . . [t]he process described in the Background of Kyle reference is different from the process described in the detailed description, e.g., paras. 0044-0047, and the Kyle reference itself distinguishes them as . . . 'without use of a wireline probe.'"[190] As is evident from this argument the inventor was making use of the rule of *Net MoneyIN* and *In re Arkley*, though the inventor had failed to cite either case.

A view of the Examiner's Answer, reveals that the examiner chose to ignore the rule of *Net MoneyIN* and *In re Arkley*. The examiner ignored this rule by writing in **bold typing**, "**Applicant is reminded that a rejection is made in light of the entire reference cited by the Examiner.**"[191] A bit later on in

[189] *Ex parte* Flood, Appeal. No. 2017-004571, Ser. No. 14/270,949, October 23, 2017.
[190] Appeal Brief, Ser. No. 14/270,949, October 23, 2017.
[191] Examiner's Answer, Ser. No. 14/270,949, November 30, 2016.

the same Examiner's Answer, the examiner argued that, "First, MPEP §2141.02 (VI) states: A prior art reference must be considered in its entirety, that is, as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, (Fed. Cir. 1983)."

An explanation is at hand that accounts for the examiner's behavior in ignoring the inventor's arguments. The first explanation is that, in drafting the rebuttal argument, the inventor forgot to cite *Net MoneyIN* or *In re Arkley*. The second explanation is that the examiner was not certain of the fact that one body of case law applies to §102-rejections while a distinct body of case law applies to §103-rejections. The examiner had cited a section from the MPEP relating to obviousness, and the examiner had cited case law on obviousness rejections. MPEP §2141.02 and *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, *supra*, concern the obviousness inquiry.

Turning to the Board's opinion, the Board reiterated the examiner's remark that concerned obviousness (and did not concern anticipation), writing that, " The Examiner states that 'a rejection is made in light of the entire reference.'" But more important, is that the Board reiterated and agreed with the inventor's argument, and reversed the rejection. In reversing the rejection, the Board invoked the rule of *In re Arkley*, writing:

> However, although "[s]uch picking and choosing [among embodiments disclosed in a reference] may be entirely proper in the making of a §103, obviousness rejection . . . it has no place in the making of a §102, anticipation rejection." *Arkley,* 455 F.2d at 587-88. Accordingly, the Examiner's reference to the disparate features within Kyle's mutually exclusive embodiments falls short of proving that such features are necessarily used together.

In addition to basing its reversal on *In re Arkley*, the Board cited *Net MoneyIN*, writing that, "In an anticipation rejection, 'it is not enough that the prior art reference . . . includes multiple, distinct teachings that an . . . artisan might somehow combine to achieve the claimed invention.' *Net MoneyIN, Inc.* v. *VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008)."

The take-home lessons from *Ex parte Flood* are as follows:

- The opinion discloses the most typical fact-pattern that is reversed under *Net MoneyIN*, namely, where the §102-rejection had been based either on combining information from two distinct locations in one prior art reference.
- The opinion illustrates that rebuttal arguments can be ineffective where the rebuttal argument fails to cite *Net MoneyIN* or *In re Arkley*.
- The opinion illustrates the take-home lesson that the case law on anticipation includes the concepts "picking and choosing" and laundry list-type disclosures, and that the case law on obviousness also includes the concepts "picking and choosing" and laundry list-type disclosures.

- For anticipation, the relevant case law on "picking and choosing" is *Net MoneyIN* and *In re Arkley*, while for obviousness, the relevant case law on "picking and choosing" is *In re Wesslau*[192] and *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, *supra*.[193]

2. *Ex parte Sun.*

Ex parte Sun[194] concerned a "holographic storage medium." This medium was made of layers that included a recording layer (120), substrate layer (130), reflection layer (110), a layer that could be a dichroic film or an air gap (140), and a quarter wave plate (150).[195] The substrate layer, for example, was made of polymethylmethacrylate (PMMA) and the recording layer was made of a photopolymer that includes PMMA.

The claim was:

> "Claim 1. A collinear holographic storage medium comprising:
> a plurality of layers; and
> a recording layer sandwiched between the layers,
> *wherein the* ***actual linear thermal expansion coefficient*** *of the recording layer is substantially the same as the* ***instinct linear thermal expansion coefficient*** *[CTE] of the recording layer,*
> the **actual linear thermal expansion coefficient** [CTE] of the recording layer is the linear thermal expansion coefficient measured when the recording layer is sandwiched between the layers, and
> the **instinct linear thermal expansion coefficient** [CTE] of the recording layer is the linear thermal expansion coefficient measured when the recording layer is not sandwiched between the layers."

The claim was rejected as anticipated by U.S. Pat. No. 7,236,277 of Kawano.

The terms, "thermal expansion coefficient" (TEC) and "coefficient of thermal expansion" (CTE) are used interchangeably, though CTE appears to be the more prevalent term.[196] According to the PTAB opinion, "The Specification discloses that the actual linear thermal expansion coefficient . . . can be controlled to be . . . the same as the linear thermal expansion coefficient . . . by . . . using the same materials . . . for example, polymethmethacrylate for the substrates and for the recording layer." The above disclosure from the Specification, apparently, is what had inspired the examiner to impose an obviousness-style rejection. This obviousness-style rejection is described below.

The main issue in the Board's analysis was the claim element requiring that the value for the, "actual linear thermal expansion coefficient," **be the same as** the value for the, "instinct linear thermal expansion coefficient." On this point,

[192] *In re* Wesslau, 353 F.2d 238, 241 (1965).

[193] W.L. Gore and Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1552 (Fed. Cir. 1983).

[194] *Ex parte* Sun, Appeal No. 2015003994, Ser. No. 12/861,844, September 6, 2016.

[195] See, Specification of U.S. Ser. No. 12/861,844 as originally filed on August 24, 2010.

[196] Mitrokhin et al., *Theoretical and experimental study of the thermal expansion coefficient of the Ni_3Al alloy*, 98 J. Phys.: Conf. Ser. 062036 (13th International Conference on Liquid and Amorphous Metals 2008).

the Board reiterated the inventor's rebuttal argument, where this argument referred to the claim's requirement for an **actual linear thermal expansion coefficient** and an **instinct linear thermal expansion coefficient**. As observed by the Board:

> Appellants further argue that **. . .** Kawano' s disclosure that the substrates and recording layer may be made of PMMA materials does not amount to a teaching that the **actual** and **instinct** linear thermal expansion coefficients of Kawano' s recording layer are substantially the same, because Kawano fails to disclose that the substrate material and the recording layer material are the same PMMA material.

Thus, it can be seen the challenge to the examiner was to argue how the Kawano reference disclosed the **actual linear thermal expansion coefficient** had the same value as the **instinct linear thermal expansion coefficient**. The Board reiterated the examiner's basis for the §102-rejection (emphasis added):

> The Examiner further finds [s]ince the cited Kawano et al reference *does not* teach specifically to use *different* PMMA materials with *different* CTE values for the recording layer and for the pair of substrates, it is **. . . reasonable to one skilled in the art to have used the *same* PMMA material with *same* CTE value** for both the recording layer and the substrates **simply for the reasons to ease the step of manufacturing** the recording medium.

The Board reiterated other features of the examiner's basis for the §102-rejection (emphasis added):

> The Examiner further finds it **is really a common knowledge in the art** to match the linear thermal expansion coefficients of adjacent layers of a multilayer structure since by doing so, the adjacent layers will have essentially the *same* thermal expansion rate that will **eliminate the unwanted distortion** of the multilayer structure due to the different expansion of the adjacent layer under thermal influence.

Please note the examiner's further use of concepts typical of the obviousness inquiry, in the writings:

- "it is **. . .** reasonable to one skilled in the art **. . .** simply for the reasons to ease the step of manufacturing."
- "it is really a common knowledge in the art to **. . .** eliminate the unwanted distortion."

A rationale to combine references is required under *In re Kahn.*[197] *In re Kahn* held that obviousness rejections must be accompanied by an assertion of a "rationale" for combining the prior art references. According to the *KSR* decision,

[197] *In re* Kahn, 441 F.3d 977 (Fed. Cir. 2006).

In re Kahn held that "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir.2006) (cited with approval in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)).

Following the *KSR* decision,[198] the Patent Office issued a set of Guidelines[199] for examining patents, which require the examiner to identify a rationales for alleging *prima facie* obviousness. The USPTO's list of rationales appears in the footnote.[200]

Turning to the USPTO's Guidelines, it can be seen that one of these is similar to the examiner's allegation that the claims were anticipated by the Kawano reference. This similar rational is, "(C) Use of known technique to improve similar devices (methods, or products) in the same way."

The examiner's allegation of anticipation further resembles a typical obviousness rejection, in that the examiner wrote things relating to an advantage ("ease the step of manufacturing;" "eliminate the unwanted distortion"). The fact that obviousness rejections are almost always based on some sort of advantage that occurs when modifying one of the cited prior art references is disclosed by the cited law review article.[201]

The Board reversed, citing only *Net MoneyIN* as the relevant case law. Each of these excerpts resembles arguments from a typical rebuttal against an obviousness rejection. Neither excerpt resembles a typical rebuttal against a §102-rejection. *Ex parte Sun* provides yet another lesson that attorneys and agents to be vigilant for allegations of anticipation that invoke doctrines from the obviousness inquiry.

The take-home lesson is that when obviousness doctrines are invoked in the way documented by the *Ex parte Sun* opinion, the attorney or agent should consider arguing that: (1) Obviousness doctrines are not permitted when invoking a rejection under 35 U.S.C. § 102, and (2) Rejections under 35 U.S.C. § 102 can be properly asserted only when they comply with the case law of anticipation.

3. *Ex parte Tannenbaum.*

Ex parte Tannenbaum[202]is described in detail at an earlier point in this article. The material from *Ex parte Tannenbaum* relating to obviousness is reit-

[198] *KSR International Co. v. Teleflex, Inc*, 127 S. Ct. 1727, 1740 (2007).

[199] Examination Guidelines for Determining Obviousness under 35 U.S.C. 103 In View of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.* (Federal Register, Vol. 72, No. 195, pages 57,526-57,535).

[200] (A) Combining prior art elements according to known methods to yield predictable results; (B) Simple substitution of one known element for another to obtain predictable results; (C) Use of known technique to improve similar devices (methods, or products) in the same way; (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (E) "Obvious to try" - choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art; (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

[201] Tom Brody, *Obviousness in Patents following the U.S. Supreme Court's Decision*, KSR International Co. v. Teleflex, Inc., 92 J. Pat. & Trademark Off. Soc'y 26 (2010).

[202] *Ex parte* Tanenbaum, Ser. No. 13/311,675, May 25, 2016.

erated below, for the reader's convenience. In imposing the §102-rejection, the examiner's comment, "discloses the claimed invention and **one of ordinary skill . . . would have known that treatment of diabetic ulcers was intended**,'" invokes the obviousness doctrine of "common sense." According to the MPEP,[203] "More recently [in *DyStar Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356, 1366 (Fed. Cir. 2006)], we explained that use of common sense does not require a "specific hint or suggestion in a particular reference," only a reasoned explanation that avoids conclusory generalizations."

Alternatively, it could be argued that this statement takes the form of a conclusory rationale. The cited law review article provides several examples of rationales to combine, as set forth by various obviousness rejections, that take the form of a conclusory rationale.[204] In other words, where the examiner asserts a rationale that is merely conclusory, it still invokes the obviousness inquiry (and is thus irrelevant to §102-rejections). Thus, whether a statement from the examiner is an assertion of: (1) A motivation to combine; (2) The rationale of "common sense;" or (3) A conclusionary rationale, this author contends that the examiner's statement invokes the obviousness inquiry.

4. *Ex parte Wittorf.*

Ex parte Wittorf[205] reveals that a fine line that can exist between different bits of information in a prior art reference that are each labeled as "an embodiment," and the question of whether each of these constitutes the same embodiment or separate embodiments. In *Ex parte Wittorf,* the examiner had argued that the prior art's use of the term "embodiment" did not identify any information as belonging to a distinct embodiment. This opinion also discloses the situation where the examiner had used doctrines from the obviousness inquiry as a basis for imposing an anticipation rejection.

Ex parte Wittorf concerned toffee gum. The claim required:

- a "sweetener"
- "wherein said toffee gum is free of elastomers"
- "an antisoaking agent selected from the group consisting of tobacco powder and nicotine"

The claim was rejected as anticipated by WO2004/028267 of Andersen.

a. How the reference disclosed all the limitations of the claim. The Board observe that, "The examiner cites Example 8 of Anderson as meeting all claim limitations except for the "antismoking agent" . . . Andersen's embodiments that include an antismoking agent lack . . . the "free of elastomers" element of

[203] Manual of Patent Examining Procedure (MPEP) §2141. Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 (Rev. August 2017).

[204] Tom Brody, *Rebutting Obviousness Rejections by Way of Anti-Obviousness Case Law*, 99 J. Pat. & Trademark Off. Soc'y 192 (2017).

[205] *Ex parte* Wittorf, Appeal No. 2014-006268, Ser. No. 11/919,958, February 19, 2016.

Claim 1 . . . [t]he examiner does not identify any one Anderson embodiment that has both an antismoking agent selected from tobacco powder and nicotine and is "free of elastomers" as required by Claim 1."

b. The Board's account of how the examiner discounted the ability of the prior art's phrase, "in an embodiment," to refer to a particular embodiment. The Board then focused on the examiner's attempt to discount the Andersen reference's use of the word "embodiment" in different locations of the Andersen reference to actually mean different embodiments. To this end, the Board wrote that, "Although the examiner finds that Anderson appears to utilize the phrase "in an embodiment" in a loose manner referring to characteristics "in an embodiment" **could** be general rather than limited to a specific embodiment . . . the examiner has not established that Anderson discloses all the limitations of Claim 1 arranged as required by Claim 1." (emphasis in original)

c. In the examiner's own words, how the examiner discounted the ability of the prior art's phrase, "in an embodiment," to refer to a particular embodiment. Now, turning to the Examiner's Answer,[206] it can be seen that the examiner had argued that the word "embodiment," as used in the Andersen reference was just an arbitrary word that did not really refer to different embodiments. To this end, the examiner argued that, "Andersen . . . utilize "In an embodiment . . . " to detail virtually every individual ingredient that may be present in the chewing gum."[207]

d. Examiner used doctrines associated with the obviousness inquiry to justify "picking and choosing" from different locations in the prior art reference, and to justify the rejection for anticipation. The examiner invoked the obviousness inquiry in order to justify "picking and choosing" as a basis for imposing the §102-rejection. On this point, the examiner argued that, "To argue that an 'embodiment' comprising active ingredients cannot be combined with an "embodiment' comprising . . . sweeteners, is completely baseless where **chewing gums are well known** to comprise many different ingredients, nearly all of which are described by Andersen . . . as 'embodiments.'"[208] (emphasis added) The examiner's use of the phrase "are well known" invokes the obviousness inquiry, because it fits into the list of rationales published by the USPTO, as shown in the footnote.[209] The rationale shown in bold font, in the

[206] Examiner's Answer, Ser. No. 11/919,958, February 20, 2014 (19 pages).

[207] Examiner's Answer, Ser. No. 11/919,958, February 20, 2014 (page 12 of 19 pages).

[208] Examiner's Answer, Ser. No. 11/919,958, February 20, 2014 (pages 12-13 of 19 pages).

[209] *Examination Guidelines for Determining Obviousness under 35 U.S.C. 103 in View of the Supreme Court Decision in* KSR International Co. v. Teleflex Inc., 72 Fed. Reg. 57526 (Oct. 10, 2007).
(A) Combining prior art elements according to known methods to yield predictable results; (B) Simple substitution of one known element for another to obtain predictable results; (C) Use of known technique to improve similar devices (methods, or products) in the same way; (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (E) "Obvious to try" - choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art; (G)

footnoted list, is the rationale most similar to the examiner's writing about "are well known."

In addition, in order to counteract the inventor's rebuttal, the examiner argued that, "**it is considered obvious** to include nicotine in any of the chewing gums . . . of Anderson . . . not only according to their one specific example, that is, Example 65"[210] (emphasis added). This argument of the examiner invokes the obviousness inquiry because the examiner argued that, "it is considered obvious."

e. The reversal. The Board reversed, citing *Net MoneyIN* as the only case law relating to anticipation. To reiterate the Board's refusal to accept the examiner's notion that Andersen's use of the word "embodiment" did not really refer to separate embodiments, the Board complained that, "the examiner finds that Anderson appears to utilize the phrase "in an embodiment" in a loose manner referring to characteristics "in an embodiment" could be general rather than limited to a specific embodiment."

5. Laundry list doctrine relating to anticipation and obviousness.

For anticipation the relevant case law on laundry lists is *Net MoneyIN v. VeriSign*, as disclosed in this article in the accounts of *Ex parte Abad*,[211] *Ex parte Farcet*,[212] *Ex parte Goldenberg*,[213] *Ex parte Goldstein*,[214] *Ex parte Kuhmann*,[215] and *Ex parte Walsh*.[216]

In contrast, for obviousness rejections, the relevant case law on laundry list-type disclosures includes *Otsuka Pharmaceutical Co., Ltd. v. Sandoz, Inc*. 678 F.3d 1280, 12931294 (Fed. Cir. 2012), *Insite Vision, Inc. v. Sandoz, Inc*., 783 F.3d 853, 863 (Fed. Cir. 2015), *In re O'Farrell*, 853 F.2d 894 (Fed. Cir. 1988), *Medichem S.A. v. Rolabo S.L*., 437 F.3d 1157 (Fed. Cir. 2006), *Merck & Co., v. Biocraft Labs., Inc*., 874 F.2d 804 (Fed. Cir. 1989).

The relevant excerpt from *Otsuka v. Sandoz*, *supra*, which concerns obviousness, reads, " As the district court correctly found, the SE '945 application lists the 2,3-dichloro propoxy compound "as one among hundreds of examples that may be useful for an **extensive list** of potential central nervous system controlling activities," *id.*, and fails to tie the 2,3-dichloro propoxy to any meaningful suggestion of antipsychotic activity."[217]

The relevant part of *Insite Vision v. Sandoz*, *supra*, which concerns obviousness, reads, "On the merits, we agree with the district court that Sandoz has not clearly and convincingly shown that the asserted claims of the ISV patents

Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

[210] Examiner's Answer, Ser. No. 11/919,958, February 20, 2014 (page 12 of 19 pages).

[211] *Ex parte* Abad, Appeal No. 2011-000555, Ser. No. 11/982,799, June 15, 2011.

[212] *Ex parte* Farcet, Appeal No. 2014-005898, Ser. No. 11/628,954, May 16, 2016.

[213] *Ex parte* Goldenberg, Appeal No. 2011-0002484, Ser. No. 11/534,124, June 28, 2011.

[214] *Ex parte* Goldstein, Appeal No. 2010-006562, Ser. No. 10/691,928,

[215] *Ex parte* Kuhmann, Appeal No. 2016-000186, Ser. No. 13/639,765, June 19, 2017.

[216] *Ex parte* Walsh, Appeal No. 2017-002141, Ser. No. 13/698,412, September 26, 2017.

[217] *Otsuka*, 678 F.3d at 1295 (**emphasis** added).

would have been obvious. Sandoz relies on the '535 patent, which mentions the possibility that erythromycin could be combined with polycarbophil. The district court found, however, that the '535 patent discloses a "**laundry list of active ingredients**" and credited the testimony of Dr. Lee that a researcher would focus on the patent's examples, none of which mention erythromycin. *See InSite,* 2013 WL 5975015, at *37. We see no clear error in the district court's findings. *See* '535 patent col.8 l.64-col.9 l.25 (listing numerous potential active ingredients)."[218]

A relevant excerpt from *Medichem v. Rolabo*, *supra*, which concerns obviousness, reads, "However, to have a reasonable expectation of success, one must be motivated to do more than merely to 'vary all parameters or try each of **numerous possible choices** until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful.' *Id*. at 903. Similarly, prior art fails to provide the requisite 'reasonable expectation' of success where it teaches merely to pursue a 'general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it.'"[219]

Another relevant excerpt from *Medichem v. Rolabo* teaches that, "While we have made clear that 'obvious to try' is not the standard under §103 . . . the meaning of this maxim is sometimes lost. *In re O'Farrell,* 853 F.2d 894, 903 (Fed. Cir.1988). In *O'Farrell,* we opined that: [This] admonition . . . has been directed mainly at two kinds of error [, namely where] . . . what would have been 'obvious to try' would have been . . . to vary all parameters or try each of numerous possible choices . . . where the prior art gave . . . no direction as to which of many possible choices is likely to be successful[or] . . . to explore . . . a promising field of experimentation, where the prior art gave only general guidance. . . . *Id*. (citations omitted). In the instant case there are not **numerous parameters** to vary."[220]

Merck & Co., v. Biocraft Labs., Inc., *supra*, is another case that concerns §103-rejections based on laundry list-type disclosures but, in this author's opinion, *Merck v. Biocraft Labs* is relatively anti-inventor. In other words, a rebuttal argument based on *Merck v. Biocraft Labs* could backfire against the inventor, as explained in the cited review article.[221]

The term "laundry list" is used by the Federal Circuit to refer to long lists of chemical, structures, compositions, and the like, as is often found in patents and publications. This summarizes the situation of "picking and choosing" arguments to rebut rejections under 35 U.S.C. § 102 or under 35 U.S.C. § 103, and the situation of laundry list-type arguments to rebut rejections under 35 U.S.C. § 102 or under 35 U.S.C. § 103:

- Rebuttal arguments based on "picking and choosing" are used for rebut-

[218] *Insite Vision*, 783 F.3d at 862 (**emphasis** added).
[219] *Medichem*, 437 F.3d at 1165 (**emphasis** added).
[220] *Medichem*, 437 F.3d at 1167 (**emphasis** added).
[221] Tom Brody, *Categories of Anti-Obviousness Case Law: (1) Laundry Lists; (2) Redundant Advantages; and (3) Advantage Not Needed and Not Relevant*, 17 J. Marshall Rev. Intell. Prop. L. 1 (2018).

ting §102-rejections and also for rebutting §103-rejections, but the applicable case law is totally different for these two types of rejections.

- Rebuttal arguments based on laundry list-type arguments are used for rebutting §102-rejections and also for rebutting §103-rejections, but the applicable case law is totally different for these two types of rejections.

IX. RULE OF *NET MONEYIN* RELATING TO OBVIOUSNESS (NOT RELATING TO ANTICIPATION)

This concerns the rule of *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) which states, "Differences between the prior art reference and a claimed invention, however slight, invoke the question of obviousness, not anticipation."

1. *Ex parte Qin.*

Ex parte Qin[222] illustrates the situation where the Board's holding was based on the rule that, "Differences between the prior art reference and a claimed invention, however slight, invoke the question of obviousness, not anticipation."[223] This rule is distinct from the rule of *Net MoneyIN* that warns against basing a §102-rejection on "picking and choosing."

Ex parte Qin concerned an absorbent material for use in diapers, feminine care articles, incontinence articles, and bandages. The invention has an increased "retention capacity" and an enhanced "free swell gel bed permeability." Retention capacity is measured by the test, "Centrifuge Retention Capacity (CRC) Test," which measures the ability of the absorbent material to retain liquid after it has been centrifuged to remove liquid that resides in the fabric, but does not adhere tightly to the fabric. The unit of CRC is: [grams of liquid retained] per [gram of absorbent material].

The claim read:

> Claim 1. An absorbent structure comprising . . . a crosslinked . . . polymer . . . comprising from about 55 to about 99.9 weight percent of a polymerizable unsaturated acid group containing monomers, the . . . material having a . . . CRC . . . of at least 25 grams/gram and a free swell gel bed permeability (GBP) . . . of at least 5.75 x 10^{-9} cm^2.

The claim was rejected as anticipated by WO/95/11932 of Johnson.

Regarding the claim element that requires, "from about 55 to about 99.9 weight percent of a polymerizable unsaturated acid group containing monomers," the Board observed that that the Johnson reference discloses a

[222] *Ex parte* Qin, Appeal No. 2009-009911, Ser. No. 11/153,190, March 31, 2010.
[223] *Net MoneyIN*, 545 F.3d at 1371.

polymerizable unsaturated acid group (acrylic acid), but where the range disclosed by the Johnson reference is not the same as the range required by the claim.

On this point, the Board stated that, "while Johnson teaches that polymerization is conducted in a solution having a monomer, which may be . . . unsaturated . . . acrylic acid . . . in the amount of 25% to 60%, Johnson does not disclose . . . all of the claimed limitations arranged in the same way as . . . in the claims . . . [t]his difference in polymerizable unsaturated acid group . . . monomers, 'however slight, invokes the question of obviousness, not anticipation.' *Net MoneyIN*, 545 F.3d at 1372."

As can be seen, the Board held that Johnson's disclosure of the range "25 to 60%" cannot anticipate the claimed range of "about 55 to about 99.9 weight percent." This is because the range, "2560%," only slightly overlaps the range, "5599.9%."

The Board observed this lack of complete overlap, reversed, and quoted *Net MoneyIN*'s warning that this difference, "however slight, invokes the question of obviousness, not anticipation. *Net MoneyIN*, 545 F.3d at 1372."

2. *Ex parte Weeks*.

Ex parte Weeks[224] reveals the situation where the Board's holding was based on *Net MoneyIN*, and on its rule that, "Differences between the prior art reference and a claimed invention, however slight, invoke the question of obviousness, not anticipation"[225] The claim was to a carpet. The claim required that the carpet include these components (emphasis added):

- "primary backing material"
- "adhesive backing material"
- "where one of the backing materials or other layers includes butyral thermoplastic polymer" and where this butyral thermoplastic polymer is an "olefin block copolymer (OBC)"
- where the "adhesive backing material further comprises **24 wt% of the OBC**"
- "at least one filler in an amount of 60% by weight based on the total weight of the material, wherein the filler **. . .** 4% of at least one maleic anhydride grafted high density polyethylene **. . . 11 wt% of at least one tackifier**."

The claim was rejected as anticipated by US2010/0272946 of Pepper. In imposing the §102-rejection, the examiner referred to Example 3 (para. 0220) of the Pepper reference. The Board scrutinized the examiner's assertion that the "**24% of the OBC**," as required by the claim, was anticipated by Example 3 of the Pepper reference. The Board determined that there was not any anticipation here, because Pepper's Example 3 disclosed a different percentage of OBC,

[224] *Ex parte* Weeks, Appeal No. 2014-008180, Ser. No. 12/499,667, September 23, 2016.
[225] *Net MoneyIN*, 545 F.3d at 1371.

that is, **23.2 wt% OBC**. Pepper's Example 3, which discloses "23.2 wt% OBC," is shown below:

Paralux 600 1 R). Example 3 is a formulation comprising 23.2 weight percent of an ethylene/1-octene multiblock copolymer having a melt index of about 15 g/10 minutes and a density of about 0.877 g/cm^3, about 5.8 weight percent of a high pressure low density ethylene polymer having a melt index of about 8 g/10 minute and a density of about 0.918 g/cm^3, about 60 weight percent coal ash, about 1 weight percent oil (Chevron/Phillips Paralux 600 1 R) and about 10 weight percent tackifier Eastotac H100L.

[0221] FIGS. **6** and **7** show the relationship between growth

Also, the Board scrutinized the examiner's assertion that the, "4 wt% maleic anhydride grafted high density polyethylene" required by the claim, and found there was not any anticipation, because Pepper's Example 3 disclosed "5.8 wt% high pressure low density polyethylene."

Also regarding the claim's requirement for "11 wt% of **. . .** tackifier," the Board observed that Pepper's Example 3 discloses "10 wt% tackifier instead of 11 wt%," referring to Pepper's para. 0220. The part of Pepper's para. 0220 that discloses "10 weight percent tackifier" is reproduced below:

percent oil (Chevron/Phillips Paralux 600 1 R) and about 10 weight percent tackifier Eastotac H100L.

[0221] FIGS. **6** and **7** show the relationship between growth

The Board reversed, citing *Net MoneyIN* for its rule that, "Differences between the prior art reference and the claimed invention, however slight, invoke the question of obviousness, not anticipation."

X. CONCLUSIONS

For rebutting rejections under 35 U.S.C. § 102, the most common basis of argument is the rule of *Verdegaal Bros. v. Union Oil Co. of California*.[226] The number of different doctrines available for rebutting §102-rejections is relatively small, as compared to the dozen or so doctrines available for rebutting rejections for obviousness.[227] Fortunately for inventors, *Net MoneyIN, Inc. v. VeriSign, Inc.*[228]

[226] Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628 (Fed. Cir. 1987) See also, Manual of Patent Examining Procedure (MPEP) §2131. Anticipation, 9th ed., Revision of January 2018.

[227] Tom Brody, *Obviousness in Patents Following the U.S. Supreme Court's Decision of KSR International Co. v. Teleflex, Inc.*, 92 J. Pat. & Trademark Off. Soc'y 26 (2010); Tom Brody, *Rebutting Obviousness Rejections by Disclosing Impermissible Hindsight*, 96 J. Pat. & Trademark Off. Soc'y 427 (2014); Tom Brody, *Rebutting Obviousness Rejections by Way of Anti-Obviousness Case Law*, 99 J. Pat. & Trademark Off. Soc'y 192 (2017); Tom Brody, *Claims with ranges, the Result-Effective Variable, and* In re Applied Materials, 98 J. Pat. & Trademark Off. Soc'y 618 (2016); Tom Brody, *Categories of Anti-Obviousness Case Law: (1) Laundry Lists; (2) Redundant Advantages; and (3) Advantage Not Needed and Not Relevant*, 17 J. Marshall Rev. Intell. Prop. L. 1 (2018).

[228] Net MoneyIN, Inc. v. VeriSign, Inc., 545 F.3d 1359, 1370 (Fed. Cir. 2008).

provides a number of versatile techniques for rebutting §102-rejections, where these versatile techniques are broader than those of the facts of the case, and where these various techniques are disclosed by opinions from the Board. This versatility is documented in this article, which demonstrates that the rule of *Net MoneyIN* is applied under a variety of fact-patterns greater than the narrow facts before the Federal Circuit in *Net MoneyIN*.

This article is a manual for applying *Net MoneyIN v. Verisign* for rebutting §102-rejections. An enhanced ability to rebut §102-rejections may be at hand, where information from two different locations in a prior art reference can be established as being from two different embodiments. Where an attorney or agent can determine that information from two different locations is actually from two, separate embodiments, the attorney or agent acquires the ability to argue that the prior art reference fails to anticipate one or more of the following types of claim elements:

(1) Structural elements

(2) Functional elements

(3) Claim terms that define an arrangement, such as, "extending through" or "situated distally"

(4) Different orderings of steps, where steps are disclosed by a prior art reference, and where the claim requires two or more steps

Where an examiner used information from at least two different locations in the prior art reference to argue that the prior art reference discloses all of the elements of the claim, the attorney or agent has the option of arguing that two of these locations constitute different embodiments. This type of argument, without more, can compel reversal of the anticipation rejection. This article reveals that two different locations can be argued as representing two different embodiment if:

- One location is named, "Example 1" and the other, "Example 2"
- One location is named, "an embodiment" and the other, "another embodiment"
- One location is named, "FIG. 1" and the other, "FIG. 2"
- One location is named, "embodiment 1" and the other is named, "Background Information"
- One of the location discloses a structure number, such as (29a), where the other location does not include that structure number, but instead has a slightly different structure number, such as (29b).
- One of the locations, whether it be in the text or in a figure, discloses a device that possesses a structure that does not exist in the device at the other location. This structure can be, for example, a row of stitching, a metal strip, an aperture, a spring, and so on.
- One of the locations discloses a device that is incompatible with the device disclosed at the other location. *Ex parte Davis*,[229] *Ex parte Hochsten-*

[229] *Ex parte* Davis, Appeal No. 2017-003127, Ser. No. 13/536,477, March 20, 2018.

> *bach*[230] *Ex parte Nazarenko*,[231] provide the fact-pattern where devices, systems, or compositions from two locations in a prior art reference were incompatible with each other and could not be combined to arrive at two or more elements of the claim.

The rule of *Net MoneyIN* can also be applied, in the situation where the prior art discloses a particular chemical or other substance, in a form where this chemical is disclosed, by a prior art reference, in a form that buried in a long list of other chemicals. Case law from the Federal Circuit, opinions from the Board, and typical rebuttal arguments, refer to this type of long list as, for example, a "laundry list," a "long list," or a "lengthy list."

Where the facts of the case track those of *Net MoneyIN*, or track those of another Federal Circuit case in the *Net MoneyIN* lineage, then there will not be any need to cite and describe any PTAB opinions. However, if the facts of the case track those found only in PTAB opinions and not those of any Federal Circuit case in the *Net MoneyIN* lineage, then the attorney or agent might consider including a brief description of each of the relevant PTAB opinions as part of the rebuttal argument. If the attorney or agent chooses to refer to one or more PTAB opinions, then the rebuttal argument should cite *Net MoneyIN* in the rebuttal, and should repeatedly emphasize the fact that PTAB's basis for reversal was based on *Net MoneyIN*. The reason to emphasize the fact that PTAB's reversal was based on *Net MoneyIN*, is to prevent the examiner from complaining that holdings from PTAB opinions do not establish *stare decisis*.

As a last word, after drafting a rebuttal argument making use of *Net MoneyIN*, this author suggests performing a quality control check on the argument, to ensure that does not fall into a fact-pattern that remains rejectable under 35 U.S.C. § 103, despite attempts to apply the rule of *Net MoneyIN*. *Ex parte Charan*,[232] *Ex parte Fiandaca*,[233] *Ex parte Mohan*,[234] *Ex parte Webster*,[235] and *Ex parte Zebedee*,[236] which focused on the issue of "relatedness," provide quality control tests for determining if an attorney's rebuttal argument is not expected to be effective.

[230] *Ex parte* Hochstenbach, Appeal. No. 2013-002983, Ser. No. 12/670,484, March 30, 2016.
[231] *Ex parte* Nazarenko, Appeal No. 2014-008020, Ser. No. 13/016,004, August 31, 2016.
[232] *Ex parte* Charan, Appeal No. 2011010319, Ser. No. 11/529,128, December 11, 2012.
[233] *Ex parte* Fiandaca, Appeal No. 2010-006135, Ser. No. 11/607,816, August 16, 2018.
[234] *Ex parte* Mohan, Appeal No. 2014-008922, Ser. No. 12/495,617, June 1, 2016.
[235] *Ex parte* Webster, Appeal No. 2011-013348, Ser. No. 11/900,779, November 30, 2012.
[236] *Ex parte* Zebedee, Appeal No. 2010-006014, Ser. No. 12/077,046, October 8, 2010.

Inventing Venice: An Urban and Environmental Innovation Model from the Lagoon City

Richard L. Hindle*

Abstract

Innovation in physical urban infrastructure is a vital component of city making in an era of sea level rise, climate change, and rapid urbanization. Venice pioneered an urban and environmental innovation model in the 14th and 15th century, successfully negotiating the cities complex geography and the sociotechnical processes that characterized Renaissance urbanism. A review of early inventor rights issued in the city suggests that the process of patent innovation facilitated urbanization of the Venetian lagoon through development of advanced drainage, dredge, irrigation, and reclamation infrastructure, essential to the city's survival. In addition to granting patents for new inventions, the Venetian government established expert review for proposed inventions, supported prototyping and testing for untried technologies, and used patent rights to attract experts with novel inventions from across Italy and Europe. These processes, in addition to the extensive dossier of patents issued in Venice, substantiate the primacy of innovation in the process of urbanization and revel an urban innovation model. Patent law later spread along Venetian trade routes through Europe, where they were also employed in economic modernization, and the construction of urban and regional infrastructure. Interestingly, similar process can later be observed throughout Europe and the United States as patent rights were constitutionalized.

*Assistant Professor of Landscape Architecture and Environmental Planning at the University of California Berkeley. rlhindle@berkeley.edu. https://ced.berkeley.edu/ced/faculty-staff/richard-hindle.

Contents

Introduction

Innovation in physical urban infrastructure is a pressing issue as cities face the challenges of climate change, sea level rise, and increasing development pressure from rapidly urbanizing populations. Environmental change and technological innovation are perennial forces in urbanization, making historical precedents valuable as we consider strategies for the next generation of urban infrastructure. A look back at the history of patent law and urbanization reveals that a unique model for urban and environmental innovation was pioneered in Venice in the 13^{th} and 14^{th} century, through the integration of inventor's rights (i.e. patents) with urban and territorial development. This history obviates a dynamic relationship between sociotechnical processes, urbanization, and environment, that is particularly salient today as we develop the innovative infrastructure of the next century.

Venice is a city built on innovation. The city was founded in the estuarine landscape of the *Leguna Venata* on March 25th, 421 AD. Venice's watery refuge was defensible, but presented a challenge to conventional land-based forms of urbanism. Prospects of building a thriving metropolis in a dynamic lagoon environment required technological and social innovation to remain competitive in global trade and manufacturing, but also to reconcile the inherent conflict between city building and the environmental contingencies of sedimentation, fluctuating water levels, and miry soils. Robust historical accounts exist of Venice's ingenious building practices and advances in hydrologic engineering are widely documented; yet many accounts overlook the legal and sociotech-

nical tools employed in Venice to incentivize innovation in industry and physical infrastructure. The coevolution of city building and inventors rights suggest that a distinct urban innovation model was created, and later emulated, as patent rights spread from Venice to Europe and the United States.

Venice's urban innovation model can be traced to 14th and 15th century through the antecedents of patent law in which privileges granted to inventors were used to incentivize construction and maintenance of canals, drainage of land, and stabilization of the city, with innovative technology. The *Senato* penned the first patent law in 1474 to incentivize the creative genius of domestic and foreign inventors, and in doing so established one of its most enduring exports – the patent. The impact of patents in Venetian manufacturing and economic expansion is well understood, but patent rights also served as a dynamic tool for infrastructure delivery and urban development, helping to resolve complex issues related to water, sediment, and other technologies vital to Venetian city building. The coupling of urban infrastructure development with patent rights allowed city officials and managers to successfully negotiate the complex geographical contingencies of Venice through technological means. Expert review panels, time allocations for prototyping and testing, a geographically specific scopes of work, incentivized private inventors to create novel machinery, reclamation processes, and technologies that were vital to Venice's economic success and urbanization. This form of public and private partnership allowed Venice to remain at the cutting edge of technology from the every changing geography of the *Leguna Veneta.*

Evidence of a true model for environmental and urban innovation is further substantiated as patent rights spread. Patent law initially extended through the Venetian territories. By the late 15th century legal precedents for patent law had travelled the extents of Venetian trade routes through Europe, where it was readily adopted in the modernization of manufacturing and industry. Patents also became integral to transformation of urban territories, just as they had in Venice. The spread of patent rights through Europe also attracted inventors to Venice, and became an important legal mechanism for technology transfer to the city. When assessed through the lens of urbanization and environmental transformation, it becomes clear that inventor's rights and innovation were instrumental in regional and urban development - a pattern that can also be observed centuries later in America where technological and western frontiers progressed concurrently.

Venice and the Advent of Patent Law – A political, economic, and urban imperative

Venice is the birth city of patent law. Precedents for inventor's rights and early patent law are documented in Venice since the early 14th and 15th century, primarily in the form of privileges and monopolies granted to inventors and manufacturers, but also for the development of public works such as the digging of canals and dredging exiting waterways. These rights and privileges granted

to inventors for public works later served as important precedents for patent law in the city, and are conceptually significant for their emphasis on the *public* aspects of innovation. In this manner, innovation and urbanization became intimately intertwined in Venice prior to the formal codification of patent law in 1474, and continued as the city developed over the next few centuries.

Inventor's rights, or privileges, granted in association with public works may seem antithetical today, yet many have forgotten the public and inherently sociotechnical aspects of patents as they were first conceived. Contrary to contemporary notions of patents relating to items of manufacturing and trade, the early patents often had no immediate commodity associated with them and were conceived in terms of their public and geographical scope. Mario Biagioli, a leading scholar in law, science, and technology summarizes the issue as follows:

> It is striking how specific and local the early notion of utility was when compared to the increasingly generic definition we find in today's patent law. In the age of global economies utility seems to have no identifiable beneficiary beyond a generic 'public' situated in an equally unspecified future. By contrast, some of the earliest patents — like those related to the making and dredging of canals in Venice or the drying of swamps in the Netherlands — concerned public works, not privately-owned technological products to be sold on a generic market. Though not many patents were so site-specific, a distinctly local and immediate notion of utility informed all early privileges, especially those issued before 1700.[1]

Records of these early patents are striking for their distance from contemporary notions of a patent, but also for their emphasis on public and urban works. For Example, the Maggior Consiglio (The Major Council) issued an "award" to the inventors Leonardo Albizio and Franceso "dalle barche" in 1334 and 1346 respectively for their invention of time saving dredge vehicles, and allowed them to operate the machines in the city. And, similarly in 1371 Hendrigeto Maringon was hired for the clearing of canals using an excavator of his own invention, essentially granting him a monopoly for the machine he created and the geographical scope of work. Agreements, such as these, between inventors and city mangers served as important precedents for patent law in Venice, but also established a trajectory of experimentation and testing in urban infrastructure.

Evolution of patent rights in Venice is intimately tied to geography. Venetians realized that building a thriving metropolis in a lagoon required legal, social, and technical ingenuity in both industry and infrastructure. It is therefore unsurprising that many archetypal patents have distinct geographical dimensions that site and situate innovation in Venice, both to attract inventors to Venice and deter foreign competition. For example, the rights issued to Ser Franciscus Petri on February 20th 1416 for the manufacture of wool involved

[1] Mario Biagioli, *From Print to Patents: Living on Instruments in Early Modern Europe*, 44 Hist. Sci. 139, 152 (2006).

the use of a previously known type of Byzantine fulling device for the cleansing of wool. This agreement precluded use of the method by others within a 10 mile radius of Rialto (Venice) for a period of fifty years.[2] Ser Franciscus Petri's patent was essentially a form of monopoly that prohibited production of similar products within a geographical radius of the city, but did not necessitate that an invention be new - only requiring that it be new to Venice and be operated within its territory. This not only applied to industry, but also to city building. In 1456, Antonio *"of France"* received privileges from the council to excavate certain channels in the city of Venice using a known technique he brought from France. The council recognized the genius of his proposal though and its usefulness in the city of Venice, essentially granting Antonia 'privileges' for bringing the technique to Venice – a process that today we might call technology transfer.[3]

The groundwork for patent law was laid in Venice in the 14th and 15th century, however the first modern, or "true", patent is often attributed in the history of law to Filippo Brunelleschi, the eminent Florentine architect, in 1421 for a floating vessel to transport materials for his Duomo di Firenze. Brunalleschi's patent was an anomaly in Florence, where patent law failed to take hold. The patent, however, is significant as is contains all the components of the modern "patent bargain" between inventors and the state, and is therefore consider seminal in the history of patent law.

Initially Brunelleschi withheld dissemination of the invention until he was granted rights by the state of Florence to protect to his creation, fearing that his new technology would be stolen. Filippo's father was a prominent lawyer and member of the Lawyers and Judges guild Calimala, which included merchants and shipping elite. At the time of the patent, Filippo was working on designs for the Duomo – a design that necessitated the use of large marbles and massive quantities of brick. Given the constraints of navigation on the river Arno and logistics of the Duomo a new ship was required. Filippo was reluctant to share the invention without legal protection for fear that others would copy his intellectual property.[4] The Republic of Florence gave Brunelleschi exclusive rights to his invention for a period of three years in exchange for sharing the new technology with the public. The patent's text is vague on details, yet the vessel named the 'Badalone', was built and commercialized by Brunelleschi. It is also striking that the patent was so intricately intertwined with the built environment, as the Duomo of Florence might not exist without the protections granted to Brunelleschi for his invention. The patent states;

> *FILIPPO BRUNELLESCHI, a man of the most perspicacious intellect, industry and invention, a citizen of Florence, has invented some machine or kind of ship, by means of which he thinks he can easily, at any time, bring in any merchandise and load on the river Arno and on any other river or water, for less money than usual, and with several other benefits to*

[2]Giulio Mandich, *Venetian Origins of Inventors' Rights*, 378 J. Pat. Off. Soc'y 378 (1960).

[3]Roberto Berveglieri, Le Vie Di Venezia: Canali Lagunari e Rii a Venezia: Inventori, Brevetti, Tecnologia e Legislazione Nei Secoli XIII-XVIII (1999).

[4]Frank D. Prager, *Brunelleschi's Patent*, 28 J. Pat. Off. Soc'y 109 (1946).

> *merchants and others; and that he refuses to make such machine available to the public, in order that the fruit of his genius and skill may not be reaped by another without his will and consent; and that, if he enjoyed some prerogative concerning this, he would open up what lie is hiding, and would disclose it to all*

Venice penned the world's first patent law in 1474. The Venetian Statute came into existence through a complex coupling of industry, innovation, engineering, commerce, competition between states, and the unique geography, law, and social structure of Venice. The lagoon city literally and metaphorically created a fertile ground for innovation. A primary factor was the relative strength of the Venetian state and relative weakness of the guilds. In Venice it is observed that the guild defined the boundaries of the craft but did not have complete control over the details of production. This idiosyncrasy allowed for craftsmen, and inventors, to innovate within the framework of the guild instead of the guild fixing the methods of a specific craft, essentially providing space for innovation.[5] All Italian Renaissance cities were innovative in their own right, though only Venice promoted patent law. In Rome, the church and papal privilege controlled the cities development and economy, and patents had little relevance. Conversely, in Florence, strong guilds controlled the modes of production and the processes of innovation. Accessing the Florentine guilds was accomplished through birthright, wealth, and/or protracted periods of training. This provided little room for early patent rights to flourish. However in Venice, the radical urban waterborne outpost, inventors could acquire patent rights for new inventions irrespective of class and bring inventions to the city from distant regions. This highly democratic, or egalitarian, form of sociotechnical innovation helped Venice remain competitive. As the power and territorial ambitions of Venice reached it zenith, so did the geographical scope of Venetian patent law and riches of inventors, craftsmen, and the state.

Venetian Patent Statute of 1474 was conceived as a public/private partnership designed to promote individual innovation and the advance the state. The Law was adopted to promote the creation of new devices and businesses through legal protection of patents and establishment of the rights of inventors.[6] Sociotechnical, public, and urban aspects of the law cannot be understated or ignored. The act reads:

> 1474, March 19
>
> *WE HAVE among us men of great genius, apt to invent and discover ingenious devices; and in view of the grandeur and virtue of our City, more such men come to us every day from diverse parts. Now, if provision were made for the works and devices discovered by such persons, so that others who may see them could not build them and take the inventor's honor away, more men would then apply their genius, would discover, and would build devices of great utility and benefit to our commonwealth.*

[5] Craig Nard & Andrew Morriss, *Constitutionalizing Patents: From Venice to Philadelphia*, 2 Rev. L. Econ. 224, 243 (2006).

[6] Giulio Mandich, *Venetian Patents (1450-1550)*, 30 J. Pat. Off. Soc'y 166 (1948).

Therefore:

BE IT ENACTED that, by the authority of this Council, every person who shall build any new and ingenious device in this City, not previously made in our Commonwealth, shall give notice of it to the office of our General Welfare Board when it has been reduced to perfection so that it can be used and operated. It being forbidden to every other person in any of our territories and towns to make any further device conforming with and similar to said one, without the consent and license of the author, for the term of 10 years. And if anybody builds it in violation hereof, the aforesaid author and inventor shall be entitled to have him summoned before any magistrate of this City, by which magistrate the said infringer shall be constrained to pay him hundred ducats; and the device shall be destroyed at once. It being, however, within the power and discretion of the Government, in its activities, to take and use any such device and instrument, with this condition however that no one but the author shall operate it.

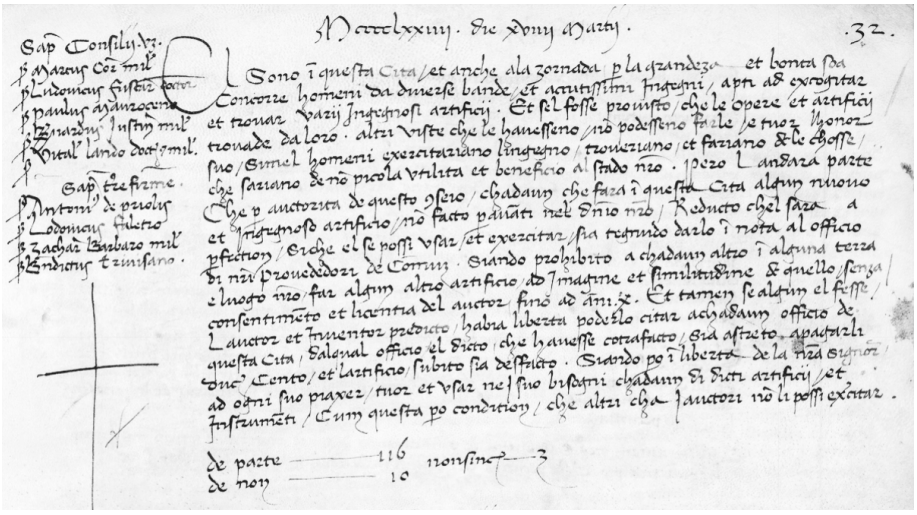


Figure 1: The Venetian Patent Statute (1474) formalized the relationship between inventors and the state, and is a seminal document in the history of patent law.

Expert Review, Prototyping, and Urbanization

Venice is defined by it relationship to water. The city was founded in the estuarine landscape of the Venetian lagoon on March 25th, 421 AD. The environmental imperatives of the *Leguna Venata* necessitated invention, establishing a trajectory for the city that continues into the present day as rising seas and subsidence threaten the city. Many of the first buildings constructed in the lagoon

utilized lightweight timber frames to remain elevated. In 639 AD, Torchello Cathedral was constructed of stone supported on wooden piles driven into soft sediment, marking not only the permanence of the city, but also the willingness of the venetian to reinvent building systems and the lagoon landscape using novel methods. By 814 work had begun on the first Doge's Palace, requiring the appointment of a commission of three men to overseen the digging of canals, shoring up of islands, and preparation of building sites.[7] In the 13th century a permanent panel of experts was established to guide the development of Venetian waterways.[8] Shortly thereafter, a special commission was established by Doge Giovani Dandolo to void and override years of disparate plans and technical work conducted over the last centuries in order to establish a single legislative structure to manage waterways. At this time, the canals and waterways also became part of the public domain, collectively constituting the shared thoroughfares of the city. Claiming the canals, waterways, streams, and shores of Venice as public placed the burden of construction and maintenance on the state. Numerous public/private partnerships were initiated to execute the work, and in these partnerships we see and emphasis of innovation that carried forward into patented works and processes a century or so later.

In the 13th century waterways cut and excavated through Venice were dug with rudimentary dredge boats in a slow and laborious manner using human or horse-powered implements to dislodge and raise sediments. Acknowledging the need for improved technology, privileges for new techniques were granted by Venetian Government to expedite the process of building public waterworks and canals. Experimentation was a vital component of these early agreements between private inventors and the state. As mentioned previously, the privileges granted to inventors Leonardo Albizio (1334), Franceso "dalle barche" (1346) and 'Hendrigeto Maringon' (1371) all had elements of experimentation and testing embedded within their terms, and this tradition continued as patent law was established. For instance, the mechanical patent issued in 1492 (18 Years after the patent stature of 1474) to Nasimben from Fontanell and Vielmo from Lime, for the extraction of mud from canals and create terra firma, granted the pair a six month experimental period to verify novelty of their methods before a fifty year "privilege" for use of the device was granted.[9]

A bureaucratic process of technological review and evaluation coevolved with plans to build and maintain canals in which new inventions of merit where given experimental periods to prove their viability, and eventually legal rights to the intellectual property and scope of the work to be conducted. Between 1474 and 1788, the Venetian government issued 1,904 patents. Of these patents 197 were issued for devices and process for the reclamation of lagoons channels, stabilization of ground, and various digging machines. An additional 43 patents were issued for hydraulic pumps for use in land drainage and irrigation.[10] Proposals for new inventions radically outnumbered those that were

[7] John Julius Norwich, A History of Venice 5 (1982).

[8] Berveglieri, *supra* note 3.

[9] Berveglieri, *supra* note 3.

[10] Roberto Berveglieri and Istituto veneto di scienze, Inventori stranieri a Venezia (1474-1788): importazione di tecnologia e circolazione di tecnici artigiani inventori: repertorio34: *memoria presentata dal s.c. Maria*

granted patents. Expert review panels evaluated models and working prototypes to evaluate the efficacy of an invention, leading to a rigorous process of peer review. During this period, patent innovation in reclamation, drainage, and dredge technology rivaled that of other sectors of technology, including textiles and scientific instrumentation. This fact is not coincidental, as "mud" technologies were not only instrumental in development of Venice's waterborne transit network, but also in environmental and urban transformations of the lagoon. Hybridizing patent innovation with infrastructure and public work was essential in Venice; as the city was raised from the lagoon by dredge machines and water pumps that were necessitated continuous invention.[11]

Patent law incentivized a tech-boom that sparked the imagination of Venice's creative class. Between 1474 and 1550, more than 100 patents were issued, creating a new class of inventors in the city.[12] Even Galileo Galilei, the famed astronomer and polymath, was caught up in the fervor of invention related to Venice's hydrologic infrastructure. Galileo invented and patented an improved form of water pump that he reportedly prototyped and demonstrated to a panel of experts at the Contarini Villa, in Padova. Galileo's patent was issued in 1594 while a professor of mathematics (1592-1610) at *l'Università di Padova*.[13] Galileo states of his invention " I, Galileo Galilei, have invented a machine for raising water and irrigating land with small expense and great convenience, which, with the motive power of a single horse, will continuously discharge water through twenty spouts." Galileo's irrigation pump was built and tested in the gardens of the Contarini Palace, though exact technical details of the invention remain unknown.[14] A scaled model of Galileo's pump, showing two horses instead of one, is archived at *Museo Fisica e Scienze Naturali Firenze*.

Francesca Tiepolo nell'adunanza ordinaria del 21 maggio 1994.

[11] Salvatore Ciriacono, Building on Water: Venice, Holland and the Construction of the European Landscape in Early Modern Times 38 (2006).

[12] Nard & Morriss, *supra* note 5 at 236.

[13] P. J. Federico, *Galileo's Patent*, 8 J. Pat. Off. Soc'y 576 (Aug. 1926).

[14] John Joseph Fahie, Galileo His Life and Work 42 (2015).

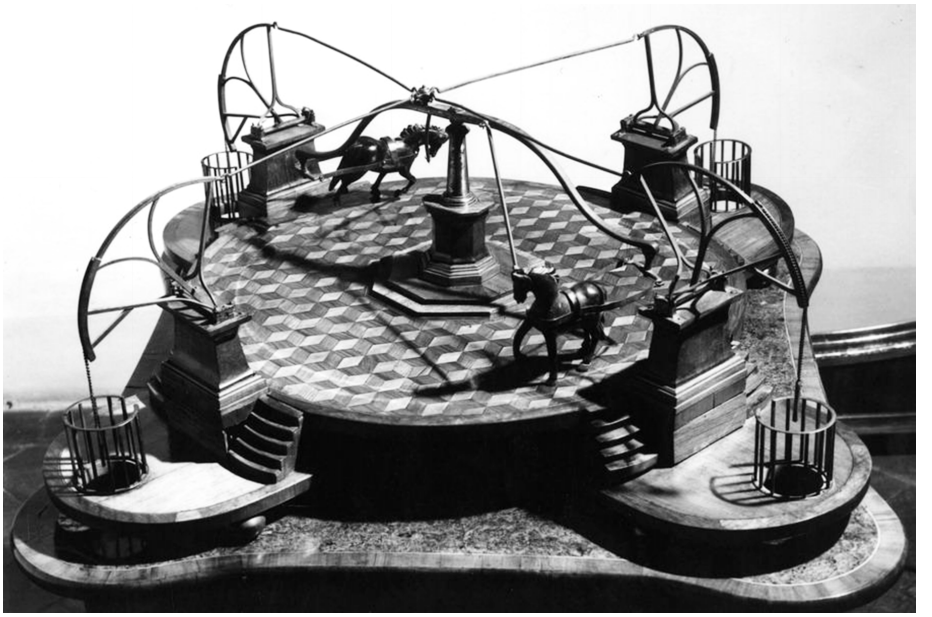


Figure 2: A model replica (20th century) of Galileo Galilei's patent (1594) archived in the *Museo Fisica e Scienze Naturali Firenze*. The pump was invented to raise and distribute water. Galileo prototyped the system at the Contarini Villa, though it was never commercialized.

The model recreates the quadripartite arrangement of the four wells around a central axis and pivot, harnessed to horses that drive the mechanism. Although Galileo's foray into water infrastructure was never commercialized, and is probably the lesser of his inventions, it is emblematic of a process of innovation in physical infrastructure that defined Venice for centuries.

Foreign Inventors and Technology Transfer to Venice

From 1474-1788, one thousand nine hundred and four (1,904) patents were issued in Venice for everything from the production of cereals, paper, and textiles, to the extraction of minerals, construction of weapons, and stabilization of the lagoon. The granting of Venetian patents granted to foreigners is particularly telling, as foreign expertise was vital to remaining competitive in industries a diverse and glass making, textiles, medicine, and city building. Ten and half percent (10.5%) of all patents issued in the city were issued to foreign inventors, linking Venice to innovations from across Europe.[15] Dutch, French, and English inventors brought new technologies to the city, including methods to dredge, drain, and stabilize terra firma.

[15] Berveglieri & Istituto veneto di scienze *supra* note 10.

Circulation of technical knowledge became vital to European cities in the early modern period, and patents played an important role. City leaders often tapped international markets for technical know-how, and in this context, patent rights were very active to craftsmen and inventors skilled in various types of manufacturing and technology. For example, in the 1660's Venice actively attempted to recruit English specialists in textiles, and in the eighteenth century sent emissaries to Florence to recruit silk manufacturers, promising economic riches and patents. This type of aggressive recruiting led to similar efforts in other cities. In 1662, the city of Turin planned to strengthen the local manufacture of silk by acquiring the knowhow to build a Bolognese-style hydraulic silk mill. And, in 1554 the Republic of Lucca established a special office, the Offizio sopra le Nuove Arti, to undertake the task of "examining the ways of introducing new 'arts' to the city, by searching for and finding men who were able and expert in these."[16]

In Venice the circulation of knowledge and technology transfer was often related to "mud" technologies for drainage and dredge infrastructure exchanged with countries such as the Netherlands.[17] Precedents for patent innovation and technology transfer in mud technologies are important components of Venice's model for urban in environmental innovation. For example, Ambrosio Bizozero from Milan, was issued a patent in 1569 for his new invention, and granted a 2-year period to test and evaluate the process. Bizozero's process involved the raising of water, draining of swamps, construction of embankments, making of caves, and the transportation of earth. The *Senato* was impressed by his invention, and granted him a 50-year patent to operate his invention on certain public lands. Similar rights were granted to foreigners who migrated to Venice. Gerardo Reighemberg, from the Netherlands, became a voluntary subject of the Venetian state in 1670. His migration was incentivized by prospects of patent rights for a "wheel dredge" that could dig channels up to twelve feet in depth with a continuous motion. Reighemberg agreed to reduce the invention to practice at his own expense in exchange for the legal rights of patent, and charter the vessel to the republic for a period of 25 years.[18] Interestingly, the Netherlands developed their own codified patent law in 1817, though they issued patents for centuries prior based on precedents from Venice. And, the evolution of Dutch hydrologic engineering can also be traced through innovations in patents.[19]

Among the most interesting and well-documented foreign inventors who travelled to Venice is Cornelius Meijer who arrived from the Netherlands in 1674, bringing with him news of a mighty chain dredger. The chain dredger described by Meijer amazed the Venetians, and he received a patent for the device in 1675. Although chain dredgers are claimed to have been invented in

[16] Carlo Belfanti, *Guilds, Patents, and the Circulation of Technical Knowledge: Northern Italy during the Early Modern Age*, 45 Tech. & Culture 569 (2004).

[17] Ciriacono, *supra* note 11 at 164.

[18] Berveglieri, *supra* note 3 at 100.

[19] Gerard Doorman, Patents for Inventions in the Netherlands during the 16th, 17th and 18th Centuries, with Notes on the Historical Development of Technics (1942).

Holland a century prior, they were new to Venice and the patent was granted.[20] In an ironic twist, a Venetian known a P. Venturino appears to have originally patented the chain dredger in Holland a century earlier in 1561. Irrespective of this chorology, Meijer was issued a patent and promptly assigned his invention to a Venetian citizen who would execute the plan as per Meijer's specification.

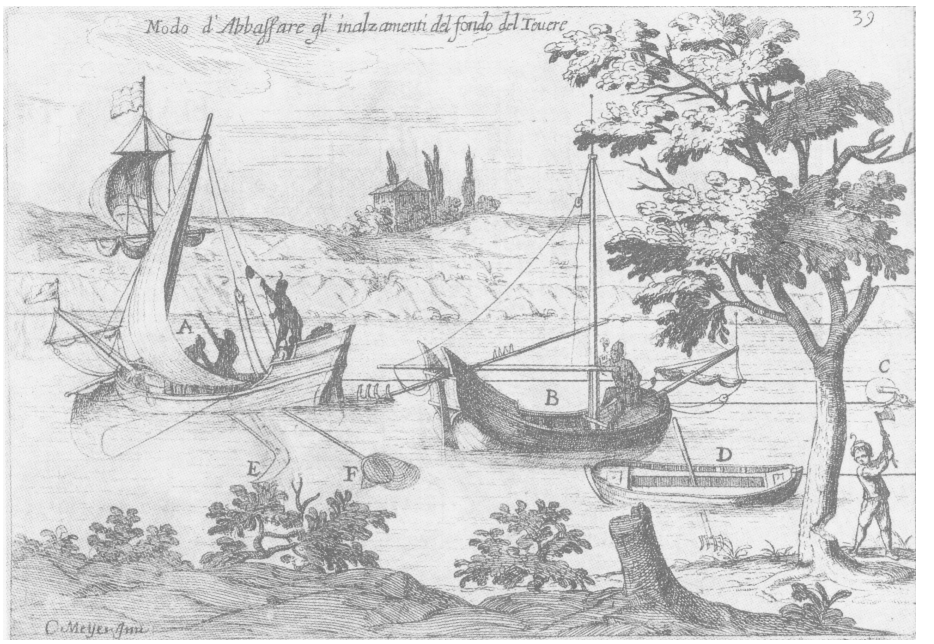


Figure 3: A perspectival representation of a new invention, by Cornelius Meijer (c.1675), showing a dredge apparatus and vessel clearing a waterway. Arriving in Venice, Meijer became famous for his ingenuity and artistic capabilities.

For his invention, Meijer was awarded the official title of "engineer" in Venice. Later, he used this title to solicit projects in his adopted home of Rome, including work on the Tiber River under the patronage of the pope. He used his artistic and technical abilities to his advantage, securing patents and projects with his etched drawings, eventually gaining the favor of powerful elites in Italy.[21] As a point of comparison, Meijer's work in Rome took a very different turn. Rome, at the time of his arrival, had no patent system and Meijer feared loosing his invention to competitors. In an act of desperation, or marketing genius, he decided to slowly release information about his inventions into the public domain, as a series of plates published in the their entirety as "L'arte di restituire à Roma la tralasciata navigatione del suo tevere."

[20] Karel Davids, 2 The Rise and Decline of Dutch Technological Leadership: Technology, Economy and Culture in the Netherlands, 1350-1800 288 (2008).

[21] Klaas van Berkel, *Cornelius Meijer Inventor et Fecit': On the Representation of Science in Late Seventeenth-Century Rome*, *in* Merchants and Marvels: Commerce, Science, and Art in Early Modern Europe (Pamela Smith & Paula Findlen eds., 2002).

A Patent Model Spreads: an environmental and urban perspective

Patent law spread through Europe, to England, France, Germany, and the Netherlands after the Venetian Patent Statute on 1474. The historian Bruce Bugbee has even claimed "the international patent experience of nearly 500 years has merely brought amendments or improvements upon the solid core established in Renaissance Venice."[22] The ascendancy and integration of patents through Europe and the America's brought with is elements of Venice's model for urban and environmental innovation, including expert review of proposed technology, periods of time allocation and funding for testing new technologies, and linking patented process to particular geographical areas. It remains unclear if the hybrid between patent innovation and progress is physical infrastructure was formally attributed to Venice at the time, or simply migrated to these countries as an artifact of the genesis of patent law. Irrespective of origin, a compelling narrative emerges from the rereading of patent history through the lens of environment and urbanism.

Patent rights spread and permuted from Venice through France, Germany, the Netherlands, and England. Patents were issued in Germany from starting in 1484. In France, the first patent was issued to a Italian from Bologna in 1551, to produce "glassware according to the manner of venice."[23] And, in England, Patent Rights find a distinct economic and political agency in the 15th and 16th century, eventually contributing to the explosion of technologies and manufacturing that typify the industrial revolution.[24] The spread of patent law had urban, regional and territorial impacts that extended beyond the realm of manufacturing and industry, into what Henry Lefebvre terms the "urban society" – a political and technological system of total urbanization.[25] In this milieu, where science, expertise, and the circulation of knowledge impacted cities, territories, and nations, the patent has played an important but surprisingly surreptitious role.

A rereading of English and American patent history is particular telling. Originally English patents, like Venetian, were essentially a mix of monopolies for particular trades and enterprises and rights granted to protect new inventions. Patent monopolies became tools for the English monarchy and guilds to maintain power over goods and labor. Queen Elizabeth granted nearly 80 patent monopolies for a range of goods and expertise, including the creation of white soap, saltpeper, knife handles, musical instruments, dredging machines, and important skills such as glass making, water drainage, and the mining of minerals. This lead to a influx of skilled workers and inventors, including those involved in the drainage, dredge, and reclamation technologies from Venice

[22] Bruce Willis Bugbee, Genesis of American Patent and Copyright Law 24 (1967).

[23] Edward C. Walterscheid, *The Early Evolution of the United States Patent Law: Antecedents (Part 1)*, 76 J. Pat. & Trademark Off. Soc'y 697, 711 (1994).

[24] Christine MacLeod, Inventing the Industrial Revolution: The English Patent System, 1660-1800 (2002).

[25] Henri Lefebvre & Robert Bononno, The Urban Revolution (2003).

and the Netherlands.[26] Interestingly, one fifth ($1/5^{th}$) of all patents granted between 1620-1640 were for methods to raise water and drain land for reclamation, revealing the scope and scale of innovation in this sector of technology.[27] The fens and lowlands of England would never be the same as drainage infrastructure was constructed through a complex process of technology transfer from Italy and Holland using patents.[28] The English Statute of Monopolies, approved on the 25^{th} of May 1624.[29] The Stature was a defining moment in the transition of England from a feudal society to a capitalist society, and changed the relationship of inventor to the state.[30] A review of patents granted in civil engineering and architecture suggest that technological innovation also had a radical impact on urban infrastructure and building practices after the Stature of Monopolies through an explosion of new materials and structures.[31]

In America, patents are intimately intertwined with the nations founding, and elements of Venice's model for urban and environmental innovation remain evident in the early history of patent law in the new country. Prior to the American Revolution colonial patents mirrored pieces of European, and specifically English, patent law.[32] Article 1 Clause 8 of the United States Constitution states that Congress has the power to "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries" which lead to the creation of the first U.S. Patent Act in 1790. Establishment of patent law was one of the first orders of business in the newly formed government, and the Patent Act of 1790 charted a distinctly American patent system founded exclusively on rights for new inventions and requiring that patents disclose enough information so that those skilled in any particular art might to make and use the technology.[33] The Act reads:

> *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That upon the petition of any person or persons to the Secretary of State, the Secretary for the department of war, and the Attorney General of the United States, setting forth, that he, she, or they, hath or have invented or discovered any useful art, manufacture, engine, machine, or device, or any improvement therein not before known or used, and praying that a patent may be granted therefor, it shall and may be lawful to and for the Secretary of State, the Secretary for the department of war, and the Attorney General, or any two of them, if they shall deem the invention or discovery sufficiently useful and im-*

[26] Clive Holmes, *Drainage Projects in Elizabethan England: The European Dimension*, *in* Eau et Développement Dans L'Europe Moderne (Salvatore Ciriacono dir., 2015).

[27] William Hyde Price, The English Patents of Monopoly 63 (1906), *available at* https://books.google.com/books?id=WNw9AQAAMAAJ.

[28] Ciriacono, *supra* note 11 at 237.

[29] William Letwin, *The English Common Law Concerning Monopolies*, 21 U. Chi. L. Rev. 353 (1954).

[30] G. A. Bloxam, *Letters Patent for Inventions: Their Use and Misuse*, 5 J. Indus. Econ. 157 (1957).

[31] Great Britain Patent Office Library, Subject List of Works on Architecture and Building Construction, in the Library of the Patent Office (1903).

[32] P. J. Federico, *Colonial Monopolies and Patents*, 11 J. Pat. Off. Soc'y 358, 363 (1929).

[33] Edward C. Walterscheid, *Charting a Novel Course: The Creation of the Patent Act of 1790*, 25 AIPLA Q. J. 445, 527 (1997).

> *portant, to cause letters patent to be made out in the name of the United States, to bear teste by the President of the United States . . .*

Although it is common to associate American patents strictly with objects of commerce, it is important to note that from 1790 to 1849, the Patent Office was operated by the Department of State with patents being signed and countersigned by the Secretary of State, Attorney General, Secretary of War, and for a brief time the President. At the time, the Department of State was primarily concerned with domestic affairs and development, including managing innovation. The increasing rate of patent submissions and explosion of domestic concerns overwhelmed the State Department and led to the creation of the Department of Interior in 1849. Between 1849–1925 the patent office operated under the auspices of the Department of Interior, spanning an unprecedented period of national growth and development marked by canal building, railroads, electricity, sewers, paved roads, navigable waterways, and the first levee systems. The Department of Interior was formed through a strategic reorganization of the USPTO, General Land Office, Census Bureau, and Bureau of Indian Affairs and charged with the management of "home" affairs, including wilderness areas and new US territories. The combined interests of the Department of Interior made it the de facto "department of the west," playing a vital role in the expansion and development of western states.

Although grand in ambition and scope, the actual footprint of the Department of Interior was remarkably small, and it was initially housed within the patent office building in Washington DC. These two seemingly disparate offices cohabitated for six decades, until the constant flow of tourism to the building and the growing piles of patent models forced the Department of Interior to move out. Richard Andrews, an environmental policy scholar, has argued that in an ideal world, the integration of interior, patent, land, and census departments might have provided the "foundation for integrated planning and management of the nation's environment."[34] By 1925, the patent office found its permanent home in the US Department of Commerce, where it remains today.

A review of patents granted in the United Sates from 1790-1925, reveals instances in which the government was directly involved in promoting innovation in the built environment as a form of infrastructure delivery. For example, in 1821 Congress waived the residency requirement to grant Englishman Thomas Oxley a patent for his "American Land Clearing Engine," which promised to hasten development. In 1844, while pondering interstate communications, Congress passed acts to construct an experimental telegraph line from Washington to Baltimore following Samuel Morse's patent for invention. Similarly, in 1845, Congress approved the creation of a panel of experts to test an experimental dredge machine, patented by J.R. Putnam, for the removal of sandbars at the mouth of the Mississippi River. And, in 1847 James Crutchett was commissioned to prototype and test his experimental gaslight in the US Capitol, proving the viability of artificial lighting in the urban landscape.[35]

[34] Richard N. L. Andrews, Managing the Environment, Managing Ourselves: A History of American Environmental Policy (1st ed. 1999).

[35] John B. Miller, Principles of Public and Private Infrastructure Delivery (2000) *in* 101 Infrastructure Sys-

The process of patent innovation, expert review, and prototyping technology in the built environment continued in large-scale complex environmental systems. This is most clearly documented in the urbanization of the Heads of Passes, at the mouth of the Mississippi River, where novel devices and processes were developed in pursuit of navigable channels to the rivers inland waterways. [36]

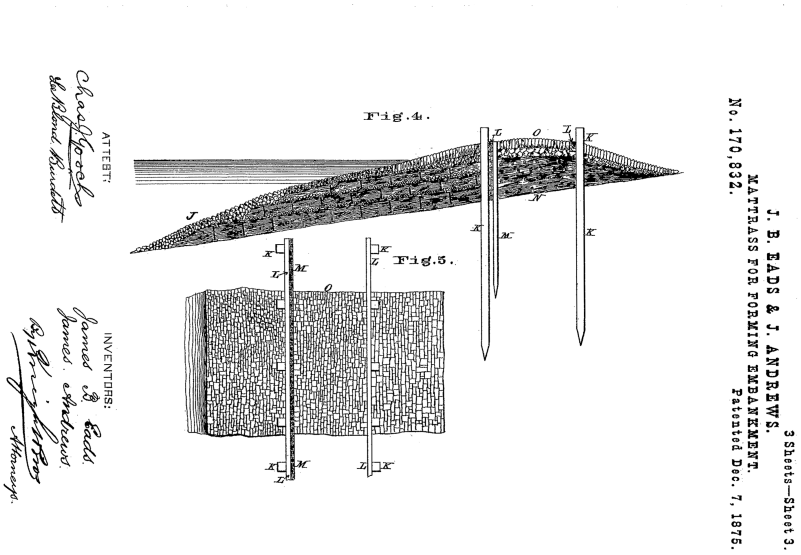


Figure 4: James Buchanan Eads' patent (1875) for a new jetty construction method using floatable brush matrasses. The system was implemented at the South, and Southwest, passes of the Mississippi River. Eads presented his plan to the U.S. Congress, and was awarded a 4-year contract to prototype the jetties.

The world-renowned engineer, James Buchanan Eads, himself had a patent to accompany his proposal for the establishment of navigable channels at the Heads of Passes.[37] Congress awarded Eads a contract for 4 years to prototype and test his system, and paid him based on success of the work.[38] News of ongoing work at the Heads of Passes also inspired others to submit their ideas to the USPTO, leading to a robust dossier of unrealized environmental imaginaries, that project forward a series of unrealized scenarios for the river.[39]

TEMS: DELIVERY AND FINANCE.

[36] Richard L. Hindle, *Prototyping the Mississippi Delta: Patents, Alternative Futures, and the Design of Complex Environmental Systems*, 12 J. LANDSCAPE ARCHITECTURE 32 (2017).

[37] JAMES BUCHANAN EADS, MOUTH OF THE MISSISSIPPI. JETTY SYSTEM EXPLAINED (1874) {from Joseph Meredith Toner Collection (Library of Congress), and YA Pamphlet Collection (Library of Congress)}.

[38] Martin Reuss, *Andrew A. Humphreys and the Development of Hydraulic Engineering: Politics and Technology in the Army Corps of Engineers, 1850-1950*, 26 TECH. & CULTURE 1 (1985).

[39] Richard L. Hindle, *Patent Scenarios for the Mississippi River*, 71 J. ARCHITECTURAL EDUC. 280 (2017).

Conclusion

Venice established precedents for patent law dating back to the 14th and 15th century, when "privileges" or "rights" were issued to inventors to promote the public benefits of innovation. In essence, Venice pioneered what is known in legal circles as the "patent bargain" in which an inventor agrees to disclose, or share, their inventions in exchange for protection from the state. In Venice, patent rights promoted innovation in every sector of technology, including the large-scale technological systems we now call the built environment. Reflecting on this process through the lens of urbanization reveals that Venice also pioneered an urban and environmental innovation model that allowed the city to negotiate its complex geography through technological means. The Venetian model for urban and environmental innovation involved expert review panels to vet proposed technologies, time allocations and funding for the realization of untested technology, and agreements for the use of a particular technology in a particular territory or part of the city. Venice incentivized inventors to contribute novel ideas to complex infrastructure problems, and kept the city at the leading edge of technology. Elements of this model can be observed as patent law spread through Europe and America, where new technologies were developed and tested to drain the fens, bring artificial light to cities, and build navigable channels at the mouth of the Mississippi in pursuit of it epic inland waterways. As contemporary cities confront issues of climate change, sea level rise, and increased rates of development, they must continue to innovate and new layers of infrastructure will be essential to resilience and adaptation. This will require diverse approaches to technology, investment in new devices and processes, and the ingenuity of the worlds leading thinkers and tinkerers, as no single government agency is prepared or equipped to address massive global change and environmental indeterminacy. Given these prospects, maybe we can learn from 14th and 15th century Venetians and develop a novel approach to urban, and environmental innovation. Contemporary cities need a model for innovation that incentivizes sociotechnical processes, protects inventor's rights, provides funding and expert review to incubate novel technologies, and provide sites for infrastructuralists, planners, and architects to implement the next layer of infrastructure that will define the contemporary city of centuries to come. Patent law has played an integral role in building large-scale and complex infrastructure for six centuries, might it provide a framework for managing innovation in the age of the anthropocence as the boundaries between the technosphere and earth systems collapse and planetary innovation becomes essential to our survival?

Unitary Patents & Unified Patent Court: The Start of a new Epoch in the European Patent System?

Markus Nolff*

Abstract

Since signing the Treaty of Rome in 1957, creating the European Economic Community, a community patent was thought to be necessary to further the goal of forming and furthering a single, common market. After various failed attempts within the last fifty years, the so-called "unitary patent" is on the brink of becoming reality. The unitary patent will be of a unitary character, granted and administered centrally at the European Patent Office, with unitary effect throughout almost the entire European Union. Start of availability of the unitary patent is linked to the establishment of a Unified Patent Court which will have exclusive judicial competence regarding any action, including infringement and revocation, concerning the unitary patent. The unitary patent in combination with the Unified Patent Court is expected to considerable ease the effort and cost for acquisition, maintenance, and enforcement of patent protection, thereby further incentivizing research and development. However, enactment has been held up by a pending constitutional complaint before the German Federal Constitutional Court and is now also complicated by the upcoming Brexit. It is currently unclear whether and when the relevant treaty might enter into force.

*Markus Nolff is registered before the *United States Patent and Trademark Office* and is admitted before the Florida Bar. The Author is also the host and author of the website http://patentsusptoepo.com/ comparing and contrasting, *inter alia*, articles, rules, guidelines/instructions, and their application and interpretation at the USPTO and EPO, and courts, respectively.

The Author appreciates any errors, oversight, omissions, or a lack of clarity being bought to his attention, or any other recommendations/suggestions. The author can be contacted via e-mail at MarkusNolff@gmail.com.

The author would like to thank the *Max Planck Institute for Innovation and Competition* for providing a working place and making available their research library. The author would also like to thank Roy Marsh, *Hoffmann Eitle*, for being a helpful sounding board, and sharing of his insightful understanding of European, British, and German patent law.

Background information regarding PCT, TRIPS, and their respective provisions can be found in the monograph "TRIPS, PCT and Global Patent Procurement" (ISBN 90-411-9740-0), written by the author and published by KLUWER LAW INTERNATIONAL. A revised edition tentatively titled "Global Patent Procurement in the age of Trade Agreements: The ongoing process of moving towards a global patent system" is expected to be published by KLUWER LAW INTERNATIONAL in 2019.

Contents

[1] A unified patent court was thought to be a necessity for a unitary patent. Reasons given were to avoid forum shopping, to avoid having to go through multiple parallel court proceedings in various States, possibly with divergent outcomes. But perhaps the most important reason was to have a court system competent in patent matters, thereby avoiding that one national court in one state, perhaps with very limited experience and expertise, could revoke the unitary patent (since unitary, revocation would not be limited to only that state but would be effective also in all other states).

Introduction

But for a pending constitutional complaint before the German Federal Constitutional Court, Germany would have deposited the instrument of ratification of the *Agreement on a Unified Patent Court* (hereinafter "UPCA"), in 2017 and with

Germany's ratification, the UPCA would have entered into force. This would not only lead to the establishment of the *Unified Patent Court* but also started application of two EU regulations that would give patent applicants the option to request a "European patent with unitary effect" (hereinafter "unitary patent").[2] The unitary patent is of a unitary character with a unitary effect throughout most of the EU, and will not only be granted by the EPO but also "validated" and administrated centrally at the EPO with litigation/revocation being the exclusive responsibility of the *Unified Patent Court*. Unquestionable, availability of unitary patents together and in combination with the *Unified Patent Court* would result in the biggest change and advancement of the European patent system since enactment of the *European Patent Convention* (EPC) and the consequent establishment of the *European Patent Organization* (EPO) tasked with the grant of European patents. In this article, the general features of the "Unitary Patent Package" will be explained and discussed, and in particular the patent rights provisions.

I. General Features of the "Unitary Patent Package"

A. Components of the "Unitary Patent package"[3]

Principally, the "Unitary Patent package" consists of three components:[4]

- *Regulation (EU) No 1257/2012 of 17 December 2012*[5] *creating a European patent with unitary effect (Unitary Patent),*
- *Regulation (EU) No 1260/2012 of 17 December 2012*[6] *establishing the language arrangement for the Unitary Patent, and*

[2]The UPCA and EU regulations use the phrase "European patent with unitary effect". However, the official *Unitary Patent Guide,* 1st edition, August 2017, (hereinafter referred to as "*Unitary Patent Guide*") abbreviates this to "Unitary Patent". See Foreword, *Unitary Patent Guide.* The same convention is being followed in this article except in being lowercase. However, this somewhat masks that a unitary patent, i.e. a "European patent with unitary effect", is a European patent, and therefore, subject to provisions of the EPC relevant for European patents. For example, a unitary patent is, like the "classic" European patent, subject to opposition procedures before the EPO should an opposition be filed.

[3]A unified patent court was thought to be a necessity for a unitary patent. Reasons given were to avoid forum shopping, to avoid having to go through multiple parallel court proceedings in various States, possibly with divergent outcomes. But perhaps the most important reason was to have a court system competent in patent matters, thereby avoiding that one national court in one state, perhaps with very limited experience and expertise, could revoke the unitary patent (since unitary, revocation would not be limited to only that state but would be effective also in all other states).

[4]Ancillary components are *Rules relating to Unitary Patent Protection, Rules of Procedure of the Unified Patent Court*, and *Regulation (EU) No 1215/2012 of the European Parliament and of the Council of 12 December 2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters*, in particular the amendment concerning its relationship with the Agreement on a Unified Patent Court. Also a *Protocol to the Agreement on a Unified Patent Court on provisional application* has been signed.

[5]Regulation (EU) No 1257/2012 of the European Parliament and of the Council of 17 December 2012 implementing enhanced cooperation in the area of the creation of unitary patent protection. This EU Regulation and its articles are abbreviated to Reg.1257/2012 and Art. X Reg.1257/2012, respectively.

[6]Council Regulation (EU) No 1260/2012 of 17 December 2012 implementing enhanced cooperation in the area of the creation of unitary patent protection with regard to the applicable translation arrangements. This EU Regulation and its articles are abbreviated to Reg.1260/2012 and Art. X Reg.1260/2012, respectively.

- *Agreement on a Unified Patent Court* (UPCA)[7] an intergovernmental treaty setting up a specialized patent court system.

The two EU regulations are already in force; however, their application will start only on the date of entry into force of the UPCA.[8] Had Germany concluded its ratification of the UPCA, the requirement for the UPCA to enter into force would have been satisfied, and consequently, with UPCA entering into foce,[9] also the application of the two EU regulations would have started.

B. Scope of legal application of the UPCA

The UPCA would not only apply to unitary patents but also equally[10] to supplementary protection certificates, "classical" European patents, and European patent applications. (However, in order to simplify the discussion, future reference is made only to the unitary patent.)

C. "Contracting Member State" and "Participating Member State"

The UPCA is an intergovernmental treaties outside the framework of the EU, yet UPCA is open only for accession by EU Member States of the European Union (hereinafter "EU Member States"), accession to the UPCA is not required by the EU, and therefore, is voluntary for the individual EU Member States.[11] Similarly, Reg.1257/2012 and Reg.1260/2012, being EU regulations, are applicable only to Member States of the European Union, but since being "enhanced cooperation" regulations, participation in these EU regulations is optional for EU Member States.

Art. 2(c) UPCA defines and uses the phrase "Contracting Member State" for a Member State party to UPCA. This is understood to mean that a "Contracting Member State" is a State that has deposited the instrument of ratification or accession, and because of this, becomes a party to the UPCA.

Art. 2(a) Reg.1257/2012 defines a "Participating Member State" as a Member State which participates in the unitary patent scheme at the time a request for unitary effect is made.

For a particular State who signed Reg.1257/2012, Reg.1257/2012 will only starts to apply on the date of entry of force of the UPCA or, after the UPCA

[7] Articles contained in the *Agreement on a Unified Patent Court* are abbreviated to Art. X UPCA, following the convention used in the official *Unitary Patent Guide,* 1st edition, August 2017. Member States party to UPCA will not, as defined in Art. 2(c) UPCA, be referred to as "Contracting Member State," but as "Participating Member State" as defined in Art. 2(a) Reg. 1257/2012. In contrast, articles of the *Agreement on Trade-Related Aspects of Intellectual Property Rights* are, by convention, abbreviated to Art. X TRIPS. TRIPS being an integral part of the *Agreement Establishing the World Trade Organization*, parties to the WTO (and therefore also to TRIPS), are referred to as WTO Members.

[8] Art. 18 Reg. 1257/2012 and Art. 7 Reg. 1260/2012.

[9] The UPCA requires for entry into force the fulfillment of three conditions: (i) ratification of at least thirteen States, (ii) ratification by the three EU Member States which the highest number of European patents in effect in 2012, and (iii) entry into force of the amendments to Regulation (EU) No 1215/2012. Art. 89(1) UPCA. (i) and (iii) have already been satisfied. See https://goo.gl/wF5wJQ.

[10] Art. 3 UPCA. However, European patent and European patent application are subject to the transitional provisions of Art. 83 UPCA.

[11] Art. 84(4) UPCA.

has entered into force, after accession of that State to the UPCA. Consequently, "Contracting Member State" to the UPCA are principally also "Participating Member State" to Reg.1257/2012.[12] Since application of Reg.1257/2012 is the last legal instrument in the "Unitary Patent package" to be activated, "Contracting Member State" and "Participating Member State" are hereinafter referred collectively as "participating Member State."[13]

D. Geographical scope of the UPCA

Not all EU Member States have signed[14] the UPCA and not all those who signed it also ratified the agreement (yet).[15] Yet, had German ratified the UPCA, then not only had the three States (Germany, France, United Kingdom) with the highest number of European patents in force (in 2012) ratified the UPCA,[16] but also more than half of the EU Members States including the four States where European patents are currently most often validated[17] (Germany, France, United Kingdom, and Netherlands). If Germany had ratified the UPCA, the unitary patent would have covered enough States and enough of the commercially important States to have covered a large percentage of industrial and inventive activity within the EU. Consequently, for the purpose of discussion, the issue of particular States not signing or ratifying the UPCA is ignored, and the assumption is made that if the UPCA would be in force, it would principally cover the entire EU.[18]

E. Institutional Setup of the *Unified Patent Court*

The *Unified Patent Court* would consist of a *Court of First Instance* with a central division[19] as well as local and regional divisions,[20] one *Court of Appeal* in Luxembourg,[21] an *Arbitration and Mediation Center,* and a common *Registry*.

[12]There is a time period between deposit of the required number of the instrument of ratification or accession and the UPCA to take effect; similarly, also for any ratification or accession of a State after the UPCA has entered into force . Depending how "participating" is interpreted, it is possible that a "Member State party to UPCA" is not necessarily also a "Participating Member State" during the time period between signing and entering into force. In order to simply the discussion in this article, this possibility is ignored.

[13]The *Unitary Patent Guide* also uses the phrase "participating Member State." Reg.1257/2012 does not capitalize "participating" unless the first word in a sentence.

[14]As of December 1, 2018 neither Spain, Poland, or Croatia signed the UPCA.

[15]As of December 1, 2018, 16 Member States ratified the UPCA. See https://goo.gl/hffR5x.

[16]This is also a requirement for the UPCA to enter into force. Art. 89(1) UPCA.

[17]See n.25 *Unitary Patent Guide*, 1st edition, August 2017 ["top four countries (DE, FR, UK and NL) ... where classic European patents were most often validated"]. Indeed, according to the *Unitary Patent Guide*, the renewal fee for the unitary patent was set at a level equivalent to the combined (national) renewal fees of these four countries. *Id.*

[18]If the UPCA would have been enacted and in operation, it's fairly reasonable to expect that the three EU Member States (Croatia, Spain, and Poland)) which did not sign the UPCA would eventually be persuaded to participate also.

[19]The central division would be in Paris with one thematic section in London (Human necessities, and chemistry, metallurgy) and another thematic section in Munich (mechanical engineering). Art. 7(2) UPCA and Annex II to the UPCA.

[20]Local and regional divisions are set up on request of Contracting Member States. See Art. 7(2,3) UPCA.

[21]Art. 9 UPCA.

The detailed setup and the inner working of the *Unified Patent Court* is outside the scope of this article, and therefore, no further discussed.

F. Competency of the *Unified Patent Court*

The *Unified Patent Court* would have exclusive competence, *inter alia*, for actions for infringements,[22] declaratory judgments, provisional and protective measures and injunctions, and revocations.[23] However, the competency of the *Unified Patent Court* over the EPO is limited to decisions in regard to the "additional tasks" given to the EPO concerning the unitary patent.[24] The *Unified Patent Court* would therefore not have a general competency of judicial review of any decisions made by the EPO.[25]

G. Powers of the *Unified Patent Court*

The *Unified Patent Court* would have the following powers:

- appoint court experts, Art. 57 UPCA
- restrict or prohibit access or use of evidence, Art. 58 UPCA
- order to produce and present evidence, Art. 59 UPCA
- order to preserve evidence or to inspect premises, Art. 60 UPCA
- order not to remove any assets, Art. 61 UPCA
- order provisional and protective measures (preliminary injunctions, precautionary seizures), Art. 62 UPCA
- order permanent injunctions and penalty payment, Art. 63 UPCA
- order appropriate corrective measures, Art. 64 UPCA
- decide on the validity of a patent, Art. 65 UPCA
- exercise any power entrusted to EPO under Art. 9 Reg.1257/2012, Art. 66 UPCA
- order the communication of information, Art. 67 UPCA

[22] Infringement, even if willful, is not held to be a criminal offense.

[23] Art. 32 UPCA.

[24] Art. 32(i) UPCA. This means decisions concerning requests for unitary effect, translations under Art. 6 Reg.1260/2012, renewal fees, statements on licensing under Art. 8 Reg.1260/2012, and compensation scheme for reimbursement of translation costs.

[25] There are also constitutional complaints pending before the German Federal Constitutional Court alleging that "inadequate legal protection of the European Patent Office against decision of the Boards of Appeal" [translation] constitutes an infringement of the German Basic Law. See German Federal Constitutional Court, *Preview for 2018*, https://goo.gl/Ybxxjq (last accessed Dec. 1, 2018). Whether or not this could have an impact on the other pending constitutional complaint regarding the UPAC is outside the scope of this article. Also outside the scope of this article whether or not judicial review by the *Unified Patent Court* of any decision by the EPO, including any decisions by the President or Administrative Council, would be desirable.

- award of damages, Art. 68 UPCA
- apportionment of legal cost, Art. 70 UPCA

Punitive damages are expressly excluded.[26] Infringement, even if willful, is not to be held to be a criminal offense.

H. Applicable law for the *Unified Patent Court*

According to Art. 24(1) UPCA, "the Court shall base its decisions on":[27]

- Union law, including Regulation (EU) No 1257/2012 and No 1260/2012;
- Agreement on a Unified Patent Court;
- European Patent Convention;[28]
- other international agreements applicable to patents and binding on all Contracting Member States; and
- national law.

"Union law" presumedly not only includes primary Union law (content of the Treaties) but also secondary Union law (regulations, directives),[29] and case law of the *Court of Justice of the European Union*.[30]

"International agreements applicable to patents and binding on all the Contracting Member States" are:[31]

- *Paris Convention for the Protection of Industrial Property*,[32] (hereinafter referred to as "Paris Convention")
- *Patent Cooperation Treaty*[33] (hereinafter referred to as "PCT"),

[26] Art. 68(2) UPCA.

[27] The phrase "shall base its decisions" in the preamble presumedly was chosen to emphasis that the listing of "sources of law" (heading of Art. 24) is not a mere listing but that the actual decision must be based on these "sources of law". Preamble of Art. 24(1) also requires is to be in "full compliance with Article 20" which requires application of the "Union law in its entirety and ... respect [of] its primacy". Hence, if there is a conflict between any of the listed "sources of law" with Union law, any decision must be in compliance with Union law.

[28] Art. 2(d) UPCA defines, "'EPC' means the Convention on the Grant of European Patents of 5 October 1973, including any subsequent amendments." The phrase "any subsequent amendment" makes it clear that the term EPC refers to the current EPC in force (EPC 2000) and not to the EPC as signed in 1973 (EPC 1973).

[29] The only other EU Regulation/Directive specifically concerned with patent protection is *Directive 98/44/EC of the European Parliament and of the Council of 6 July 1998 on the legal protection of biotechnological inventions* (OJEC L 213, 30.7.1998, p. 13). As far as it was deemed necessary, the above mentioned Directive resulted in the formulation of Chapter V [*Biotechnological inventions*] of the Implementing Regulations to the EPC. Since this Directive concerned with a rather specialized field of technology with little relevancy for other fields of technology, a more detailed discussion of this Directive is outside the scope of this article.

[30] Indeed, Art. 21 UPCA states that, "[d]ecisions of the Court of Justice of the European Union shall be binding on the Court." Although stated somewhat in context of preliminary ruling from the *Court of Justice of the European Union*, this seems to express the general rule.

[31] Since not ratified by all UPCA Contracting Member States, neither the *Patent Law Treaty*, *Convention on the Unification of Certain Points of Substantive Law*, nor the *Vienna Convention on the Law of Treaties* are binding on the court through Art. 24(1) UPCA.

[32] As revised at Stockholm, July 14, 1967, which is the latest revision.

[33] As amended on September 28, 1979, modified on February 3, 1984, and on October 3, 2001.

- *Agreement on Trade-Related Aspects of Intellectual Property Rights*[34] (hereinafter referred to as "TRIPS"); and
- *The Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure*

Only the Paris Convention and TRIPS have patent provisions concerning the post grant phase of a patent.[35]

"National law" is controlling (within the scope of this article) for:

- any right based on prior use or personal possession (as defense against patent rights);[36]
- any older national rights based on an earlier filed but later published national patent or national patent application;[37]
- any compulsory licences;[38] and
- unitary patent as an object of property.[39]

I. Translation requirements for the unitary patent

According to Art. 3 Reg.1260/2012, no translation is required for the unitary patent in order to take effect in all participating Member States.[40] However, this is subject to a transitional provision:[41] If the language of the proceedings[42] is French or German, a complete translation of the specification of the European patent into English is required; and where the language of the proceedings is English, a complete translation of the specification of the European patent into any other official language of the Union is required.

Art. 4 Reg.1260/2012 requires that in the event of a dispute relating to an alleged infringement the patent proprietor must provide at the request and

[34] As amended in 23 January 2017. See WTO's website *Amendment of the TRIPS Agreement*, https://goo.gl/XPZ8zh, (last accessed Dec. 1, 2018). In addition to the EU being a WTO Members, all EU Member States are also WTO Members in their own right. Hence, since UPCA is open only to EU Member States, all UPCA Contracting States are WTO Members. Except for Monaco, San Marino, and Serbia (Serbia is currently in WTO accession negotiations), all EPC Contracting States are WTO Members. The EPC was revised in 2000 also in view to ensure TRIPS conformity (for example, by amending Art. 87 EPC 1973) and the Board of Appeal stated various times that although TRIPS may not be applied directly to the EPC, is appropriate to take it into consideration.

[35] The PCT has one, optional, provision concerning post-grant. According to Art. 46 PCT, a PCT Contracting State may retroactively limit the scope of a patent should the patent, due to an incorrect translation, exceed the scope of the international application in its original language. Art. 46 PCT is a leftover from the more far-reaching 1967 PCT draft treaty proposal where it was proposed that patents granted on an international application could be revoked only under certain enumerated grounds listed in the PCT.

[36] See discussion of Art. 28 UPCA.

[37] See discussion of Art. 65(2) UPCA and Art. 139(2) EPC in context of discussion of Art. 27 TRIPS.

[38] Note 10 Preamble of Reg. 1257/2012.

[39] Art. 7 EU 1257/2012.

[40] The requirement under Art. 14(6) EPC to file translations of the claims in the other two official EPO language as part of the application process is unaffected by Reg. 1260/2012.

[41] Art. 6 Reg. 1260/2012. At first six years, but extendable to up to twelve years from the date of the application of Reg. 1260/2012. *Id*.

[42] "Language of the proceedings" means the language used in the proceedings before the EPO. See Art. 14(3) EPC. The "language of the proceedings" is one of the official languages of the EPO (English, French, or German).

the choice of an alleged infringer, a complete translation of the patent into an official language of either the participating UPCA State in which the alleged infringement took place or the Member State in which the alleged infringer is domiciled.[43] Furthermore, the patent proprietor is required to provide at the request of a court competent in the participating Member States (meaning that competent local, regional, or central division of the Unified Patent Court), a full translation of the patent into the language used in the proceedings of that court.[44]

II. Patent Rights conferred by the Unitary Patent in view and in context of other applicable Treaties and Agreements

A. Relevant EPC Provisions

Art. 2 EPC [European patent]

This article states, "European patent ... have *the effect* of and be subject to the *same conditions* as a *national patent* ... unless this Convention provides otherwise." (Emphasis added.)

This stated well the nature of the "classic" European patent compared to national patents and the unitary patent. In essence, the "classic" European patent is *equivalent* to a national patent[45] in each designated Contracting States unless the EPC provides otherwise. For the European patents of a unitary effect, i.e. unitary patent, according to Art.5(3) Reg.1257/2012 the law of that participating Member State would be applicable whose national law would be applicable as an object of property.[46] Yet for that participating Member State also UPCA would be applicable, and consequently, the provisions of the UPCA would be the applicable provisions.

Art. 63 EPC [Terms of the European patent]

The term of the European patent is 20 years from the date of filing of the application. The term is extendable to take account of a state of war or similar

[43] Not doing so may affect a subsequent claim for damages. See Note 9 of the preamble to Reg.1260/2012 ["concerning a claim for damages, the court .. should take into consideration ... before having been provided with a translation ... may have acted in good faith"].

[44] Language of proceedings before the *Unified Patent Court* is governed by Art. 49-51 UPCA. See also Art. 51(3) UPCA. ["defendant ... shall have the right to obtain, upon request, translations of relevant documents"].

[45] Equivalent to a national patent, but not being a national patent.

[46] Art.5(3) Reg.1257/2012, states, "law applied to European patents with unitary effect in the participating Member State whose national law is applicable to the European patent with unitary effect as an object of property in accordance with Article 7." Yet, the acts against which the patent provides protection (including applicable limitations) are recited in Art.25-27 UPCA, and therefore, are also applicable by "the participating Member State whose national law is applicable to the European patent with unitary effect as an object of property in accordance with Article 7." It is preseumed that it was drafted in such a way as to relate to the phrase "national law" explicitly states in Art. 64(e) EPC and implied in Art. 64(1) EPC.

emergency conditions, or an administrative authorisation procedure required before a product can be placed on the market.

There is no corresponding UPCA provision but there is a corresponding TRIPS provision (Art. 33 TRIPS).

Art. 64(1) EPC [Rights conferred by a European patent]

Confers, as from the date on which the mention of its grant is published, the same rights[47] as would be conferred by a national patent granted in that State.

This would be modified by Art. 4 EU 1257/2012. The unitary patent would confer in the participating Member States the rights (including any limitations to those rights) recited in Art. 25-30 UPCA, and not any rights as conferred by a national patent.[48]

Art. 64(2) EPC [Rights conferred by a European patent]

If the subject-matter of the European patent is a process, the protection conferred by the patent must extend to the products directly obtained by such process. This is the only EPC provision which confers to a European patent a specific patent right.

There is a corresponding UPCA provision, Art. 25 UPCA(c), and a corresponding TRIPS provision, Art. 28(1)(b) TRIPS.[49]

Art. 68 EPC [Effect of revocation or limitation of the European patent]

Revocation in opposition, limitation or revocation proceedings has retroactive effect.

There is a corresponding UPCA provisions (Art. 65(4) UPCA), but no corresponding TRIPS provisions.

Art. 69 EPC [Extent of protection]

Extent of the protection conferred is to be determined by the claims. The description and drawings is to be used to interpret the claims.[50]

There is no corresponding UPCA or TRIPS provision.[51]

Art. 70 EPC [Authentic text of a European patent application or European patent]

The text in the language of the proceedings (before the EPO) is the authentic text in any proceedings before the EPO or in any Contracting States. However

[47] *Cf.* to the more general rule "the effect of and be subject to the same conditions" in Art. 2 EPC. This suggests that the EPC, with the exception of Art. 64(2) EPC does not contain any provisions regarding the rights arising out of a granted patent, and indeed the EPC doesn't.

[48] *See* discussion *supra* note 46.

[49] Discussed in greater detail in the discussion of Art. 28 TRIPS.

[50] Subject to a *Protocol on the Interpretation of Article 69 EPC*. According to Art. 164 EPC(1), the protocol is an integral part of the EPC.

[51] This may very well turn out to be the most important post-grant EPC provision for the UPCA.

if the the application was filed in a language which is not an official EPO language, then that text is the "application as filed" within the meaning of the EPC.[52]

There is no corresponding UPCA provisions or TRIPS provisions regarding what is deemed to be "authentic text" of a granted patent.[53]

Art. 99 EPC [Opposition]

European patent may be subject to an opposition procedure before the EPO.

The only provision in the UPCA in regard to any opposition procedure, before the EPO is Art. 33(a) UPCA, which requires that the court be informed of any pending opposition procedure. TRIPS only requires that should an opposition procedure be offered, the procedure must comply with certain general TRIPS requirements.[54]

Art. 105a EPC [Request for limitation or revocation]

The patent proprietor may limit or revoke a European patent by an amendment of the claims in a centralized procedure before the EPO.

The only provision in the UPCA in regard to any revocation or limitation procedure before the EPO is Art.33(1) UPCA, which requires that the court be informed of any such pending procedures. TRIPS only requires that should a revocation or limitation procedure be offered, the procedure must comply with certain general TRIPS requirements. [55]

Art. 138 EPC [Revocation of European patents]

Subject to Art. 139 EPC, a European patent may be revoked with effect for a Contracting State only for certain listed grounds and that in any validation proceedings, the patent proprietor has the right to limit the claims.

Art. 65(2) UPCA limits the grounds of revocation in any proceedings before the UPCA to the grounds stated in Art. 138(1) EPC and Art. 139(2) EPC. Although TRIPS does not explicitly state any grounds for revocation, implicitly any grounds, with one exception, are limited to those stated in Art. 138(1) EPC and Art. 139(2) EPC.[56]

[52] Art. 70(2) EPC. The exception stated in Art. 70(3) EPC is not applicable to the unitary patent.

[53] Parties before local or regional division of UPCA can agree on the use of the language in which the patent was granted as the language of proceedings. Art. 49(3) UPCA. Language of proceedings at the central division will always be the language in which the patent was granted. Art. 49(6) UPCA.

[54] Art. 62(4) TRIPS requires that procedures concerning the acquisition, maintenance or revocation/forfeiture of patents must be governed by the principles set out in Art. 41(2,3) TRIPS. Art. 41(2, 3) TRIPS requires that procedures be "fair and equitable", not "unnecessarily complicated or costly, or entail unreasonable time limits or unwarranted delays", "decisions are made available ... without undue delay", and "decisions on the merits ... based only on evidence in respect of which parties were offered the opportunity to be heard". Art. 62(4) TRIPS requires "review by a judicial or *quasi*-judicial authority" (emphasis added) for "administrative revocation and *inter partes* procedures such as opposition, revocation and cancellation ... [except] in cases of unsuccessful opposition or administrative revocation, provided that the grounds ... can be the subject of invalidation procedures."

[55] See footnote in regard to the discussion of the opposition procedure.

[56] This is discussed in greater detail in the discussion of Art. 65(2) UPCA.

Art. 139 EPC [Prior rights and rights arising on the same date]

A European patent or a European patent application has with regard to a national patent application or national patent the same prior right effect as a national application/patent; and a national patent application or national patent has the same prior right effect with regard to European patent as if the European patent[57] were a national patent

UPCA and TRIPS are silent in regard to what constitutes or does not constitute prior art against a patent application or patent.

Art. 141 EPC [Renewal fees for European patents]

National renewal fees may only be imposed for the years which follow the year in which the mention of the grant of the European patent is published in the European Patent Bulletin.[58]

This would be modified by Reg.1257/2012 for a unitary patent. Patent proprietors would be required to pay a single annual renewal fee for a unitary patent.[59] This renewal fee, like renewal fees for pending patent applications, would be payable to the EPO.[60]

Art. 142 EPC [Unitary patents]

Any group of Contracting States may provide by a "special agreement" that a European patent is only granted jointly and has a unitary character in their territories.

EU Reg.1257/2012 is such a "special agreement" and mirrors the language used in Art. 142 EPC.[61]

Art. 149a EPC [Other agreements between the Contracting States]

Nothing in EPC is to be construed as to limit the right of Contracting States to conclude special agreements on any matters concerning European patent applications or European patents which under this Convention are subject to and governed by national law, such as, (a) ... establishing a European patent court common to participating Contracting States, ... (c) ... dispense with translations requirement under Art. 65 EPC.

[57] National prior rights are not part of the prior art as defined in Art. 54 EPC. Hence, not prior art against a European patent application.

[58] The EPC requires payment of renewal fees for pending patent applications in regard to the third year and each subsequent year, payable to the EPO. Art. 86(2) EPC.

[59] See Note 19 in the preamble to EU Reg. 1257/2012.

[60] See Note 21 in the preamble to EU Reg. 1257/2012 ["Renewal fees should be paid to the European Patent Organisation"]. See also Art. 9(e) Reg.1257/2012 giving the task of collecting and administering renewal fees to the EPO.

[61] Art. 1(2) Reg. 1257/2012 ["This Regulation constitutes a special agreement within the meaning of Article 142 ..."]. See also Note 6 in the preamble of Reg. 1260/2012 ["This Regulation constitutes a special agreement within the meaning of Article 142 of the EPC"]. EU Reg. 1260/2012 is solely concerned with language regime and not with establishing a "unitary character" for European patents. Consequently, is strictly speaking not a "special agreement" under Art. 142 EPC.

The UPCA could be deemed to be an agreement under Art. 149a(a) EPC since the *Unified Patent Court*, subject to a transitional provision, also has jurisdiction over European patent applications and "classical" European patents.[62]

B. Relevant EU Regulation Provisions[63]

Art. 3 Reg. 1257/2012 [European patent with unitary effect]

Art. 3 Reg. 1257/2012 states the two requirements for a unitary patent:

1. granted with same set of claims in respect of all the participating Member States,[64] and
2. registered in the Register for unitary patent protection.

Art. 4 Reg. 1257/2012 [Date of effect]

Unitary patent will take effect on the date of publication by the EPO of the mention of the grant of the European patent in the European Patent Bulletin.[65]

Art. 5 Reg. 1257/2012 [Uniform protection]

The unitary patent provides protection uniform protection throughout the territories of the participating Member States in which it has unitary effect. Patent rights and any limitation thereto are defined by the law applied to European patents with unitary effect in the participating Member State whose national law is applicable to the European patent with unitary effect as an object of property in accordance with Article 7. But since this national law has to comply with UPSC, in effect, these rights are recited in Art.25-27 UPCA.

Art. 6 Reg. 1257/2012 [Exhaustion of the rights conferred . . .]

Once the product has been placed on the market any patents rights are exhausted, unless there are legitimate grounds for the patent proprietor to oppose further commercialisation of the product.

This is restated in Art. 29 UPCA.[66]

Art. 11 Reg. 1257/2012 [Renewal fees]

One renewal fee payable to the European Patent Organisation. In contrast, for the "classical" European patent national renewal fees are payable to national patent offices.[67]

[62] Art. 3 UPCA subject to the transitional provision of Art. 83 UPCA. In contrast, Reg. 1260/2012 is only concerned with unitary patent, and therefore, might be held to fall outside the scope of Art. 149a(c) EPC.

[63] Reg. 1260/2012 is concerned solely with the translation requirements, and therefore, contains no patent right provisions.

[64] This implicitly implies that no designation for any of these States has been withdrawn.

[65] *Cf.* Art. 64(1) EPC. *See* a discussion of Art. 64(1) EPC.

[66] Discussed in great detail in the discussion of Art. 29 UPCA.

[67] See previous discussion regarding Art. 141 EPC.

Art. 15 Reg. 1257/2012 [Application of competition law and the law related to unfair competition]

Regulation is without prejudice to the application of competition law and the law relating to unfair competition.

The UPCA is silent on the issue of competition law. Art. 41 TRIPS states that IP rights (which includes patents) may have an adverse effect on competition, and consequently, WTO Members may adopt, consistently with other provisions of TRIPS, appropriate measures which, for example, prevent exclusive grantback conditions, conditions preventing challenges to validity, and coercive package licensing.

C. Relevant UPCA Provisions

Art. 25 UPCA - Right to prevent the *direct* use of the invention

Confers the right to the patent proprietor to exclude any third party from: making, offering[68], placing on the market, using, or importing or storing for those purposes a patented product or a product obtained directly by a patented process; and using or offering for use a patented process.

Very similar to the rights conferred by Art. 28 TRIPS except that Art. 25 UPCA also prohibits (i) *storing* the product, and (ii) *offering* for use the process. On the other hand, Art. 28 TRIPS also includes the actual "selling" in the list of patent rights. Another difference is that in TRIPS, the issue of exhaustion of patent rights is excluded from the WTO dispute settlement procedure[69] which has been understood to mean that WTO Member are free to decide between a national (regional) or international exhaustion. In contrast, Art. 29 UPCA introduces a regional (EU) exhaustion, and therefore, any issue of exhaustion can be brought before the *Unified Patent Court*.

Art. 26 UPCA - Right to prevent the *indirect* use of the invention

Confers the right to the patent proprietor to exclude any third party from supplying or offering to supply means relating to an essential element of the (patented) invention when the third party knows, or should have known, that those means are suitable and intended for putting that invention into effect. Supplying or offering to supply staple commercial products are not excluded, except when inducing the person supplied to perform any of the acts that would constitute patent infringement. There is contributory infringement even if the acts themselves are not deemed infringement under Art.27(a-e) UPCA.

[68] The signed *Economic Partnership Agreement between the European Union and Japan* also contains a very similar provision to Art. 25 UPCA. However, small difference is that instead of "offer", Art. 14.33 Partnership Agreement has "offering for sale" with a footnote stating that, "[f]or the purpose of this paragraph, 'offering for sale' may include exporting." The "may" makes it clear that this is optional feature. The most sensible interpretation would be that "offering exporting" may be construed to constitute "offering for sales."

[69] Footnote to Art. 28 TRIPS referring to Art. 6 TRIPS. According to Art. 6 TRIPS [*Exhaustion*], subject to Art. 3 TRIPS [*National Treatment*] and Art. 4 TRIPS [*Most-Favoured-Nation Treatment*], for the purposes of dispute settlement nothing in in this agreement is to be used to address the issue of exhaustion.

TRIPS does not contain any provisions regarding indirect or contributory infringement nor does TRIPS contain any provisions that would be contravened[70] by such provisions.

Art. 27 UPCA - Limitations of the effects of a patent

This article lists ten acts that are deemed not to constitute infringement. Two of of the listed acts are also contained in Art. 5ter Paris Convention.

Art. 30 TRIPS states the requirements for under which WTO Members Parties may provide limited exceptions to the rights conferred by a patent.[71] TRIPS does not list any specific acts that may be excluded under this provision.[72] The specific acts listed in Art. 27 UPCA seem *prima facie* to fall under the limited exceptions of Art. 30 TRIPS.[73]

Art. 28 UPCA - Right based on prior use of the invention

Any person would have had a right based on prior use or personal possession against a national patent enjoys in that Contracting Member State the same rights in respect to patent for the same invention.

From the context, it's clear that the word "patent" refers to the "classical" European patent or to the unitary patent. Questionable to what extent "right based on prior use" or "personal possession" is covered by the limited patent right exception of Art. 30 TRIPS.[74] (The "Other use" exception under Art.31 TRIPS is not applicable.) Notwithstanding, Art. 4(B) Paris Convention expressly reserves any prior rights acquired before the filing/priority date for domestic legislation.[75] This suggests that "prior use" or "personal possession" rights might a third category of possible exceptions to patent rights.[76] Apparently no consensus could be found for a harmonized provision, and the fallback

[70] Art. 1(1) TRIPS allows WTO Members to implement more protection than is required by TRISP, provided that such protection does not contravene the provisions of TRIPS.

[71] Art. 30 TRIPS has been interpreted in the WTO dispute case *Canada – Patent Protection of Pharmaceutical Products* (DS114) that an exception under Art. 30 TRIPS to patent rights must met three cumulative criteria: (i) must be limited; (ii) must not unreasonably conflict with a normal exploitation of the patent; and (iii) must not unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties.

The author would have interpreted the clause between the two commas in Art. 30 TRIPS as an independent clause containing two conditions (like a condition precedent in contract law) which has to be satisfied. According to this interpretation, (i) limited exceptions may be provided to take account of legitimate interests of third parties, *provided* that, "[ii] do not unreasonably conflict with a normal exploitation of the patent and [iii] do not unreasonably prejudice the legitimate interest of the patent owner". [A more detailed discussion is outside the scope of this article.]

[72] *De Minimis* Imports as defined in Art. 60 TRIPS might be assumed to fall under this exception.

[73] Whether or not this assumption is correct will have to be seen in context of a specific, concrete acts argued to fall under the listed acts.

[74] A prior use right could arguably fail each and every prong of the three-prong test as formulated in the WTO dispute case *Canada – Patent Protection of Pharmaceutical Products* (DS114).

[75] Art. 4(B) Paris Convention also makes it clear that such prior rights cannot be acquired after the filing of an application that gives a right of priority. ["any acts accomplished in the interval [between the filing of a first application and any subsequent application], in particular ... exploitation of the invention ... cannot give rise to any third-party right or any right of personal possession"].

[76] In contrast, prior user rights is included in the list of possible exceptions to Art. 30 TRIPS in the *A Handbook on the WTO TRIPS Agreement*, Cambridge University Press (2012), page 109.

solution was therefore to apply national patent law.[77]

Art. 29 UPCA - Exhaustion of the rights conferred by a European patent

Once the patented product has been placed on the market in the European Union with the consent of the patent proprietor the patent rights are exhausted, "unless there are legitimate grounds for the patent proprietor to oppose further commercialisation of the product." This clause apparently has not yet been interpreted by the courts.[78]

Art. 30 UPCA - Effects of supplementary protection certificates

Supplementary protection certificates are to confer the same rights as conferred by the patent and are subject to the same limitations and the same obligations.

This would tie in with Art. 63(2) EPC which allows to "grant corresponding protection which follows immediately on expiry of the term of the patent, under the same conditions as those applying to its national patents ... for product or a process of manufacturing a product or a use of a product which has to undergo an administrative authorisation procedure".

Art. 2(h) UPCA defines "Supplementary protection certificate" as a supplementary protection certificate granted under Regulation (EC) No 469/2009 or under Regulation (EC) No 1610/96.

Art. 55 UPCA - Reversal of burden of proof

An "identical product when produced without the consent of the patent proprietor shall, in the absence of proof to the contrary, be deemed to have been obtained by the patented process". However, a subsequent subsection then states that "*principle* set out [before] ... shall *also apply* where there is a substantial likelihood that the identical product was made by the patented process and the patent proprietor has been unable, despite reasonable efforts, to determine the process actually used for such identical product." (Emphasis added.) In effect, a merger of the two standards[79] giving the court some discretion to decide which standard to follow in a particular situation. This reverse of the burden of proof is in contrast to the general rule stated in Art. 54 UPCA that the "the burden of the proof of facts shall be on the party relying on those facts."

[77] Similarly, Art. 37 CPC 1989 and Art. 37 EPLA. However, Art. 12(a) of the *Proposal for a Council Regulation on the Community Patent* would have introduced a right of prior use without reference to the national law.

[78] The U.S. Supreme Court in *Impression Products, Inc. v. Lexmark International, Inc.*, 581 U.S. ___ (2017) held that "[a]n authorized sale outside the United States, just as one within the United States, exhausts all rights under the Patent Act". The Court furthermore held that, "[i]f the patentee negotiates a contract restricting the purchaser's right to use or resell the item, it may be able to enforce that restriction as a matter of contract law, but may not do so through a patent infringement lawsuit. ... This Court accordingly has long held that, even when a patentee sells an item under an express, otherwise lawful restriction, the patentee does not retain patent rights in that product." If such interpretation is to be followed, "legitimate grounds for the patent proprietor to oppose further commercialisation of the product" must be more than mere contractual agreements.

[79] A strict strict, literal interpretation of Art. 34 TRIPS would require a selection of one of the two alternatives. This is discussed in greater detail in the discussion of of Art. 34 TRIPS.

D. Relevant TRIPS Provisions

Art. 27 TRIPS - Patentable Subject Matter

Art. 27 TRIPS states:

- the general requirement that patents must be available for any inventions in any field of technology provided that the requirements for patentability are satisfied.[80]
- the requirements for patentability (novelty, involve an inventive step (non-obviousness), and are capable of industrial application (useful));
- what may be excluded from patentability (the prevention within their territory of the commercial exploitation of which is necessary to protect *ordre public* or morality);
- two areas of field of technology that may also be excluded from patentability (diagnostic, therapeutic and surgical treatment methods; and plants and animals, and essentially biological processes for the production of plants or animals animals); and
- a prohibition of discrimination as to the place of invention, the field of technology and whether products are imported or locally produced.

The patent granting procedure before the EPO is basically in general agreement with the provisions of TRIPS.[81] TIPS does not contain a provision that explicitly states the possible grounds for revocation of patent. However, the requirement of availability of patent and patent protection for the patent term, implicitly limits the grounds to grounds that would have justified a refusal to grant the patent and to the one ground for revocation authorized in the Paris Convention (namely, the grant of a compulsory license has not remedied the lack of exploitation of the patent).[82]

Art. 65(2) UPCA states, "may revoke a patent ... only on the grounds referred to in Articles 138(1) and 139(2) of the EPC."

Art. 138(1) EPC states that, subject to Art. 139 EPC, a European patent can only be revoked, if (a) not patentable, (b) does not disclose the invention in a manner sufficiently clear and complete, (c) extends beyond the content of the application as filed, (d) protection conferred by the European patent has been extended, and (d) patent proprietor is not entitled to the patent.

[80]Subject to Art. 62 TRIPS ["may require, as a condition of the acquisition [of patent rights] ..., compliance with reasonable procedures and formalities".]

[81]This was the result reached in the study by Markus Nolff, *TRIPS and the European Patent Convention: Need for Change?*, internally published by the EPO (2000).

[82]This is in agreement with the allowable grounds for revocations stated explicitly in Art. 20.F.3 USMCA and Art.18.39 TPP (articles are identical). [". . . patent may be cancelled, revoked or nullified only on grounds that would have justified a refusal to grant the patent. . . . may also provide that fraud, misrepresentation or inequitable conduct may be the basis for cancelling, revoking or nullifying a patent or holding a patent unenforceable. . . . may be revoked, provided it is done in a manner consistent with Article 5A of the Paris Convention and the TRIPS Agreement"].

Under Art. 138(2) EPC, a national patent or a national application has in regard to a European patent the same prior right effect as if the European patent were a national patent.[83]

These grounds stated in Art. 138(1) are grounds that would have justified a refusal to grant the patent or, in case of ground (c), to uphold a patent in the Opposition procedure.[84] Revocation under Art. 139 EPC takes account of older national rights[85] that are not deemed part of the prior art during the European granting phase but are prior art at the national level against a European Patent. Consequently, the grounds of revocation stated in Art. 65(2) UPCA are in general agreement with the patent provisions of TRIPS.

Art. 28 TRIPS - Rights Conferred

Subsection (1) states the patent right conferred by a patent grant: the right to prevent third parties (not having the owner's consent) from (i) using a patented process, and (ii) making, using, offering for sale, selling, or importing the patented product or products obtained directly by the patented process.

Very similar to Art. 25 UPCA except that Art. 25 UPCA also prohibits (i) *storing* the product for purposes prohibited without the consent of the patent proprietor, and (ii) *offering* the process for use.

Another difference is that a footnote in TRIPS makes clear that the patent right of "importation" in Art. 28 TRIPS is subject to Art. 6 TRIPS which, with two exceptions, excludes the issue of exhaustion from the dispute settlement procedure.[86]

Subsection (2) TRIPS, requires that the patent proprietor has the right to assign, or transfer by succession, the patent, and to conclude licensing contracts.

Art. 3(2) EU 1257/2012 states that European patent with unitary effect "may only be limited, transferred or revoked, or lapse, in respect of all the participating Member States" and "may be licensed in respect of the whole or part of the territories of the participating Member States." Art. 7 EU 1257/2012 states that a unitary patent is, as an object of property, be be treated in its entirety and in all the participating Member States like a national patent of a particular participating Member State. Hence, the precise treatment as an object of property depends on which national law is applicable. It is sensible to assume that the national laws of the participating Member States at least give patent

[83] Hence, a single national prior right in one Contracting State could result in the revocation of an unitary patent which otherwise would be valid in 25 EU Member States. This is further complicated that the EPO generally doesn't search (published) national patent applications or a national patents of earlier date since these are not comprised in the state of the art for the purposes of the EPO examination. See discussion in *Examination Guidelines EPO,* H-III,4.4 (Nov. 2018). However, if noted, the Guidelines require that these are mentioned in the search report. *Examination Guidelines EPO* B-VI,4.2 (Nov. 2018) ["any ... which are present in the documentation are noted and mentioned in the search report for information"].

[84] Art. 123(3) EPC. Only during opposition procedure and if there is a request for limitation is it possible to amend a European patent before the EPO.

[85] National patents or national patent applications filed earlier filing date but published after the effective filing date.

[86] Exhaustion of European patent with unitary effect is dealt with Art. 29 UPCA which states that the the rights of a patent are exhausted when placed on the market in the EU. This regional exhaustion is to be compared to national exhaustion or international exhaustion.

proprietor, possibly subject to national formality requirements, the right to assign, or transfer by succession, the patent, and to conclude licensing contracts. However, this being limited Art. 3(2) Reg.1257/2012 that the European patent with unitary effect may only transferred as a whole.

Art. 29 TRIPS - Condition on Patent Applicants

Requires a sufficiently clear and complete discloses of the invention, and also, where required, the best mode. Furthermore, information concerning corresponding foreign applications and grants may have to be provided.

Since this provisions concerns more filed application than granted patents, UPCA contains no corresponding provision. Art. 83 EPC requires a sufficiently clear and complete disclosure of the invention. The EPC does not *per se* requires the disclosure of the "best mode". R.141 EPC requires if priority is claimed, the filing of a copy of any search results by the authority with which the priority application was filed.[87] Under R.141(3), the EPO may also request information on prior art taken into consideration in any other national or regional patent proceedings.[88]

Lack of a sufficiently clear and complete discloses of the invention is one of the listed grounds for revocation under Art. 138(1) EPC.

Art. 30 TRIPS - Exceptions to Rights Conferred

*Art. 30 TRIPS s*tates the conditions for under which WTO Members Parties may provide limited exceptions to the rights conferred by a patent. Specific acts that can be excluded are not listed in TRIPS. As previously discussed in context of Art. 27 UPCA, the specific acts listed in Art. 27 UPCA seem *prima facie* to fall under the limited exceptions of Art. 30 TRIPS.

Art. 31 TRIPS - Other Use Without Authorization of the Right Holder

Contains the requirements for compulsory licensing. Neither the EPC, UPCA, nor the EU regulations contain any provisions regarding compulsory licensing. Merely the preamble of Reg.1257/2012 states in note 10, that "[c]ompulsory licences for European patents with unitary effect should be governed by the laws of the participating Member States as regards their respective territories". Hence, it is up to the individual participating Member States to be in compliance with the TRIPS requirements regarding any compulsory licences issued by that State.

[87] Unless the search results are otherwise available to the EPO and are therefore automatically included in the file of the European patent application. R.141(2) EPC.

[88] According to the *Examination Guidelines EPO,* C-III.6 (Nov. 2018), "requests under Rule 141(3) will be issued only in individual cases, where there are cogent reasons to suspect the existence of additional, relevant prior Art."

Art. 32[89] TRIPS - Revocation/Forfeiture

Requires an opportunity for judicial review of any decision to revoke or forfeit a patent. One interpretation is that this requires the possibility of an appeal to a higher court.[90]

According to Art. 6 UPCA, the court "comprise a Court of First Instance, [and] a Court of Appeal. According to Art. 73 UPCA, "appeal against a decision of the Court of First Instance may be brought before the Court of Appeal" and "may be based on points of law and matters of fact."

Art. 33 TRIPS - Term of Protection

Requires that the term of protection available must not end before the expiration of a period of twenty years counted from the filing date.

According to Art. 63 EPC, the term (duration) of a European patent is "20 years from the date of filing of the application."[91] The relevant "date of filing" for Art. 63 EPC is the actual filing date[92] of the European application and not any (claimed) priority date.[93]

Notwithstanding the apparent clear language, the start and expiration of the patent term differs between EPC Contracting States.[94] For purposes of (European) renewal fees payable for a pending application, the patent year starts on the day after the day of filing. It is assumed that the EPO will use the same

[89] Art. 32 TRIPS is slightly modified by Art. 62(4) TRIPS which also allows review by a quasi-judicial authority (instead of a judicial authority) for "administrative revocation and *inter partes* procedures such as opposition, revocation and cancellation ... [except] in cases of unsuccessful opposition or administrative revocation, provided that the grounds ... can be the subject of invalidation procedures."

[90] See for example, Daniel Gervais, *The TRIPS Agreement*, Thomson, p.254 ["The intent here is clearly to ensure that any decision to revoke or forfeit may be reviewed in a judicial process." See also Art. 41(4) TRIPS ["Parties to a proceeding shall have an opportunity for review by a judicial authority ... of at least the legal aspects of initial judicial decisions on the merits of a case."]

[91] Assuming that the respective, national renewal fees are paid.

[92] Art. 33 TRIPS requires a term of protection of "a period of twenty years counted from the filing date". A literal reading suggests that the period is to be counted from the date of filing, i.e. the day of filing is already the first day of the term of protection. The WTO Appellate Body held likewise in *Canada - Patent Term* that "Article 33 defines the earliest date on which the term of protection of a patent may end. This earliest date is determined by ... taking the date of filing of the patent application and adding twenty years." Since TRIPS allows a longer patent term than 20 years, counting twenty years from the day following the date after filing, i.e. one day longer as if counted from the date of filing, can be presumed to be TRIPS conform even if counted from the day following the date after filing and not from the actual filing date. That no patent protection is available at the day of the grant of the patent has been up to now of no relevance.

[93] Art. 89 EPC does not list Art. 63 EPC where "the date of priority shall count as the date of filing of the European patent application". Also Art. 4bis(5) of the Paris Convention Patents obtained with the benefit of priority shall, in the various countries of the Union, have a duration equal to that which they would have, had they been applied for or granted without the benefit of priority.

[94] No definition of how to compute the date of the start and expiration (lapse) of the term is given in the EPC. Consequently, this is left to the Contracting States; some Contracting States interpret "from the date" that the day of filing is the first day of the patent term; in other Contracting States, the first day of the patent term is the day following the day of filing. Some Contracting States define the date of expiration as the last day of validity, for some other Contracting States it is the first day of invalidity. See discussion in Derk Visser, *The Annotated European Patent Convention*, 24th edition (2016). For the EPO, according to the *Examination Guidelines EPO*, A-X,5.2.4 (Nov. 2018), "the patent year starts on the date of filing and ends on the same date of the following year. For the second and subsequent years, the patent year starts one day after the anniversary of the date of filing and ends on the same day as the date of filing of the following year". This being somewhat inconsistent too, the first patent year being longer as the second or subsequent patent years.

calculation for the renewal fees due for the unitary patent.[95] Art. 33 TRIPS states only a minimum term ("shall not end before"). Hence, patent term extension extending the patent term beyond twenty years from the filing date or supplementary protection certificates offering the same rights as conferred by the patent are not in contradiction with TRIPS.

Art. 34 TRIPS - Process Patents: Burden of Proof

Requires that judicial authorities must have the authority to order the defendant to prove that the process to obtain an identical product is different from the patented process (a) "if the product obtained by the patented process is new"; or (b) "if there is substantial likelihood that the identical product was made by the process and the owner has been unable through reasonable efforts to determine the process actually used."

According to Art. 55 UPCA, an "identical product ... shall, in the absence of proof to the contrary, be deemed to have been obtained by the patented process". However, Art. 55 UPCA then states that "*principle* set out [before] ... shall *also apply* where there is a substantial likelihood that the identical product was made by the patented process and the patent proprietor has been unable, despite reasonable efforts, to determine the process actually used for such identical product." (Emphasis added.) In effect, a merger of the two standards.

However, subsection (3) Art. 34 TRIPS states that, "Member shall be free to provide ... only if ... (a) is fulfilled ***or*** only if ... (b) is fulfilled" makes it clear that these two clauses are intended to be alternatives for WTO Members to select. Hence, a strict, literal interpretation of TRIPS would require a selection of one of the two alternatives.[96]

Both TRIPS and UPCA require, using identical wording, that the legitimate interests of defendants in protecting their manufacturing and business secrets must be taken into account.

III. Discussion

A. Entering into force of the "Unitary Patent Package" would considerably ease availability, maintenance, and enforcement of patent rights

Entry into force of the UPCA, which would start the grant of unitary patents and establish the *Unified Patent Court*, would bring the biggest change to the European patent system since enactment of the *European Patent Convention* in the early 70's, almost equaling the establishment of the *European Patent Organization* itself. Entry into force would have "closed the circle", finishing what

[95] Under Art. 9(e) Reg.1257/2012 it will be the task of the EPO to collect and administer renewal fees for European patents with unitary effect, in respect of the years following the year in which the mention of the grant is published in the European Patent Bulletin.

[96] Not clear whether this selection must be made at a statutory level or also can be made at a judicial level. Will have to be seen whether or not the German Constitutional Court will pick up on this lack of legal certainty (*Rechtssicherheit*).

was intended first with the *Community Patent Convention* signed in 1975.[97] The unitary patent - with limited, transitional translation requirements and with translations to be filed directly with the EPO, and with only one single renewal fee payable to the EPO - would have substantially lowered the cost and maintenance of patent protection. The patent rights granted by the UPCA are in general agreement with TRIPS, going in many respects beyond what is required by TRIPS, for example, by giving patent proprietor the right to prevent also the indirect or contributory use of the invention. The *Unified Patent Court*, in view of its extensive court powers[98] and patent rights granted by the UPCA, should be an effective means to litigate and enforce patents and the rights conferred by a patent. Consequently, the combination of Unitary Patent & *Unified Patent Court* can be expected to considerably ease availability, maintenance, and enforcement of patent rights throughout most of the EU.[99]

B. Considerable uncertainty whether or not the "Unitary Patent Package" will enter into force in its current form within the foreseeable future

As of the editorial deadline this article,[100] no decision of the German Federal Constitutional Court has yet been issued.[101] It is also not foreseeable when such a decision may be issued,[102] or whether the court will first refer any questions to the *Court of Justice of the European Union* for a preliminary ruling, or whether the court will simply wait until the constitutional complaint might be deemed to be moot in view of the upcoming Brexit, especially if a "hard Brexit."[103] In order for the UPCA to be in force before Brexit (March 29, 2019), Germany would have needed to deposit the instrument of ratification before December 2018 which, because of the pending constitutional complain, was not done.[104] Yet, even if

[97] Because of ratification issue the *Community Patent Convention* was replaced by the *Agreement in regard to Community Patent Convention* signed in 1989 which also failed to be ratified. The failure of ratifying these conventions resulted in a proposed *Regulation on the Community patent*, first proposed in 2000, and in a proposed *European Patent Litigation Agreement* in 2005, both proposals are now considered being withdrawn. For a detailed discussion and references regarding the attempts to enact a Community/European Union patent, see subchapter II(a) ["The background"] in Lamping, Matthias and Ullrich, Hanns, *The Impact of Brexit on Unitary Patent Protection and its Court* (August 30, 2018). Max Planck Institute for Innovation & Competition Research Paper No. 18-20 https://goo.gl/pXksnd (last accessed Dec. 1, 2018).

[98] See discussion in earlier part of this article.

[99] The various advantages are well explained in Ch.IV. "The benefits of the Unitary Patent" of the *Unitary Patent Guide*, 1st edition, August 2017.

[100] Dec. 1, 2018.

[101] A constitutional complaint was also filed in Hungary, and the Hungarian Constitutional Court decided that the UPCA is incompatible with Hungary's Fundamental Law (Constitution). *UPC - Hungarian constitutional complaint*, The IPKat, https://goo.gl/HxZUPP (last accessed Sept.30, 2018). This suggests that the German constitutional complaint may not be completely meritless. A more detailed discussion whether or not the German constitutional complaint is admissible, and if admissible, is allowable is beyond the scope of this article.

[102] The constitutional complaint apparently has been filed at or shortly after the conclusion of the Parliamentary proceedings on March 31, 2917. Considering the time that has since passed, it seems likely that the German Federal Constitutional Court felt that the complaint was at least not obviously inadmissible.

[103] The German Federal Constitutional Court could decide that entering into force of the UPCA as currently written would, in view of the upcoming Brexit, arguably violate EU law, and therefore, ratification by Germany is unconstitutional either according to German or EU constitutional law.

[104] Art. 89(1) UPCA. However, the agreed-upon *Draft Agreement on the withdrawal of the United Kingdom*, TF50 (2018) 55 (14 November 2018) contains a transitional clause providing that, unless provided otherwise in the

the UPCA would have entered into force before the Brexit, it is questionable whether the UPCA could validly stay in force after Brexit or in case the agreed-upon withdrawal agreement becomes ratified, after the end of the transitional period without further agreements on that issue.[105] Consequently, there is a large degree of uncertainty in view of Brexit and the pending constitutional complaint in Germany whether or not the "patent package" would enter into force within the foreseeable future or even could enter into force in its current form.

C. Enactment of the "Unitary Patent Package" also has trade related implications

According to the published 2017 EPO statistics, the US is the largest geographical source of patent applications, more than a quarter of the applications filed at the EPO originated from the US, almost equal to the number of applications originating from the second biggest source (Germany) and third biggest source (Japan) added together.[106] Since the unitary patent & *Unified Patent Court* would to give US applicants a more "level playing field" against potential user/infringer of US owned patent, who now have a "home advantage" in being able to go to their national courts, failure of enactment also has a substantial trade-related aspect regarding US-EU trade.[107] Consequently, any failure

agreement, "Union law shall be applicable to and in the United Kingdom during the transition period" (Art.127). (The transitional period "shall start on the date of entry into force of this Agreement and end on 31 December 2020" (Art.126).)

A sensible interpretation would be that the UK would be deemed to be a Contracting Member State of the UPC Agreement from the date of entry into force of this Agreement until to the end of the transitional period (31 December 2020).

[105] Annex II to the UPCA requires that a section of the court's central division to be in London. The *Court of Justice of the European Union*, in its Opinion 01/09 of March 8, 2011, concluded that, "conferring on an international court which is outside the institutional and judicial framework of the European Union an exclusive jurisdiction ... to interpret and apply European Union law ... would alter the essential character of the powers which the Treaties confer" and therefore is not compatible with the provisions of the EU Treaty. However, a London section of the court's center division may not be necessary contrary to the Opinion 01/09 even should the UK be outside the EU as long as the London section is and stays within "institutional and judicial framework of the European Union". Being outside the geographical framework of the EU by itself should not necessary be an issue in view of Opinion 01/09. Although the UPCA is silent on whether or not a Contracting Member State to the UPCA could remain a Contracting Member State, the requirement of being a EU Member State for accession could be interpreted to mean that non-EU Member States cannot be Contracting Member State. Similarly, the definition in Art.2(c) UPCA of "Contracting Member State" probably will have to be read conjunctively with the definition in Art.2(b) UPCA of "Member State" as being a Member State of the European Union, i.e. be read as "Contracting Member State [of the European Union]". Furthermore, Reg.1257/2012 establishing the unitary patent which is also deemed to constitute the "special agreement" under Art.142 EPC would case to apply in the UK, also taking the UK out of the "special agreement".

It is outside the scope of the article to discuss if and how any Brexit agreement (for example, by staying within the EU legal system for the purpose of the UPCA) could allow the UK to keep participating in the unitary patent/unified patent court, or whether it would be even desirable. For a detailed discussion of this issue, see the relevant chapter in Lamping, Matthias and Ullrich, Hanns, The Impact of Brexit on Unitary Patent Protection and its Court (August 30, 2018). Max Planck Institute for Innovation & Competition Research Paper No. 18-20 https://goo.gl/pXksnd (last accessed Dec.1, 2018).

[106] see *Facts and figures 2018*, https://goo.gl/NsrTCX (last accessed Dec. 1, 2018).

[107] This is also correct for Japan-EU trade. Consequently, Art. 14.33(3) of the signed *Economic Partnership Agreement between the European Union and Japan* states, "[t]he Parties recognise the importance of providing a unitary patent protection system including a unitary [sic] judicial system in their respective territory". Should the Unitary Patent & Unified Patent Court fail to enter into force, it would not surprise if any future US-EU trade agree-

of the UPCA to enter into force would not only be a major setback for patent protection in Europa, but also would have global trade-related ramifications.

Conclusion

Undoubtedly, availability of unitary patents in combination with the Unified Patent Court would start a new epoch for patent acquisition and patent protection within the EU. A singular unitary patent granted and administrated centrally at the EPO, subject to limited transitional translation requirements and a competitive singular renewal fee, should drastically lower the cost of patent acquisition. The Unified Patent Court would offer considerable advantages to the patentee in having to enforce only one patent in a unified court procedure or, if validity has been questioned, having to defend only one patent in one unified court procedure. As a result, unitary patents should substantially lower the cost of patent acquisition, cost of patent maintenance, and any cost of patent enforcement. Consequently, the "Unitary Patent Package" should be an effective means to further incentivize research and development and to support industry not only within the EU but in view of the trade-related aspects of patent protection also globally. The unitary patent and the Unified Patent Court may eventually evolve into a true EU patent and EU Patent Court, allowing for direct political control by the EU and closer alignment with the goals and purposes of the common market.

Notwithstanding these major advantages, there is currently considerable uncertainty due to a pending constitutional complaint in Germany and UK's Brexit whether or not the "patent package" will be enacted within the foreseeable future or can be enacted in its current form.[108] But notwithstanding, in spite of a current rather pessimistic outlook, the German Federal Constitutional Court could issue a decision later today holding that the constitutional complaint is inadmissible, or if admissible, dismiss the complaint. Germany's ratification would then be a mere formality, and with that the UPCA would be enacted. It is likely that UK Parliament will ratify the agreed-upon withdrawal agreement and the transitional period thereby gained may give enough the time for the UPCA to enter into force and the necessary breathing room for negotiations regarding UK's participation after the transitional period.

As Yogi Berra said it once so pointy, "it ain't over 'til it's over." And for better or worse, it isn't over yet.

---

ment would contain a similar provision.

[108] Failure to enact would be regrettable especially in view of how tantalizing close enactment is or was, as only a signature was required for Germany's ratification and consequent enactment; yet, seemingly within a blink of an eye, the ratification process stumbled in its tracks just short of the finishing line.

This raises the question what could be "rescued" from the "patent package" in case there will be no enactment. The author suggests to consider a (i) EU "Patent Right" Regulation exclusively governing the rights (including any limits to those rights) conferred by (a) publication of a patent application, and (b) by grant of a patent; and (ii) to bifurcate infringement and revocation, and to move revocation to a newly established revocation court or revocation department at the EPO. Any future (appeal only?) "Patent Court" could then be considerably simpler institutionally, and perhaps be made an integral part of the EU judiciary.

A SUGGESTION FOR IMPROVING PATENT OFFICE SEARCHES.

BY W. L. THURBER, Examiner.

For years it has been a matter of regret that the Office search was not more reliable.

In the opinion of the writer it is not believed that any very startling changes would be necessary to make investigations which would compare favorably with the best validity searches made by attorneys. It would cost a little more at first but it is doubtful in the long run if the expense of examining an application would be any greater. Certainly it would not be enough to be prohibitive.

It is thought that all we need is specialization—the keystone of all modern business.

At present an examiner's time is largely spent in reading cases and making searches, two quite distinct duties. The first requires intelligence, adaptability and industry —qualities which there was never great difficulty in obtaining prior to the war. To make a proper search, however, experience is needed, and this is something rarely found on the market. To exhaustively investigate the prior inventions in any particular line, especially in the heavier arts, one must be thoroughly familiar with the field and it requires years of close application to that particular field to attain this. Right here, as we all know, is where the great difficulty lies, for no sooner does a first-class examiner become somewhat familiar with an art than he is offered such inducements on the outside that he does not feel justified in remaining.

Now here is the suggestion which is offered. Let us pay for experience enough to retain it—but let us use to best advantage this high-priced article. Since the search is the only part of the examination which cannot be carried on fairly well by those of little experience, let the experienced devote their entire time to this work.

For illustration, take the art of printing. To handle this field in normal times would probably require about four examiners. Let us now select one of these men, of

course one who is competent and industrious, preferably the one who is most familiar with the art, and if possible one who prefers work in the Office to that ouside—provided the remuneration is sufficient. Let us pay this man four or five thousand dollars a year and let him devote his entire time to searching and to digesting and arranging his art so as to have it as nearly as possible at his finger ends. Let the others read up the cases, analyze the claims and report to him the features on which search is required. At first this searcher will need some assistance, but in time he will attain such familiarity with his art that he will be able to make his searches not only much more thoroughly, but much more speedily than the average examiner. His work will cease to be drudgery and will become the pleasant occupation which mastery always brings.

With this expert at his post, the art of printing will be well guarded, and it it not very material how often the personnel of the case readers changes. They will be bright, intelligent, young college graduates, perfectly capable of carrying on the routine work while they pursue their law courses and fit themselves to go out into practice.

If ths plan were adopted throughout the Office, in a few years we ought to have a force of experts that would be the admiration of the patent world, and when novelty had been reported favorably by this organization it probably would be as near final as is humanly possible.

statement of ownership, management and circulation

(Required by 39 U.S.C. 3685)

1. Title of Publication: Journal of the Patent & Trademark Society
2. Publication No. 285-060 3. Date of Filing 9/1/2017
4. Frequency of Issue: Quarterly 5. No of issues Published Annually: 4
6. Annual Subscription Price: 65
7. Complete Mailing Address of Known Office of Publication: JPTOS, 6164 Castletown Way, VA 22310
8. Complete Mailing Address of the Headquarters of General Business Office of the Publisher: JPTOS, 3670 Wheeler Ave, Alexandria, VA 22304
9. Full Names and Complete Mailing Address of Publisher, Editor, and Managing Editor:
    Publisher: JPTOS, 3670 Wheeler Ave, Alexandria, VA 22304
    Editor: Alex Sofocleous 107 S. West St. #809, Alexandria, VA 22314
    Managing Editor: Seahvosh Nikmanesh 107 S. West St. #809, Alexandria, VA 22314
10. Owner: Patent & Trademark Office Society, 107 S. West St. #809, Alexandria, VA 22314
11. Known Bondholders, Mortgage, and Other Security Holders Owning or Holding 1 percent or More of total Amount of Bonds, Mortgages, or Other Securities: None.
12. The purpose, function, and nonprofit status of this organization and the tax exempt status for Federal Income Tax purposes have not changed during the preceding 12 months.
13. Publication Title: Journal of the Patent & Trademark Office Society
14. Issue Date for Circulation Data: 9/1/2017
15. Extent and Nature of circulation: Intellectual Property Law Journal

	Average No. copies each issue during preceding 12 months	Single Issue nearest to filing date
a. Total No. Copies Printed: (Net Press Run.)	567.6	480
b. Paid Circulation		
1. Paid/Requested Outside County Mail	366.2	260
2. Paid in-County Mail subscriptions	17.25	6
3.Sales through dealers and carriers, street vendors and counter sales	8	0
4. Other Classes Mailed Through the USPS	0	0
c. Total Paid Circulation [sum 15b(1), (2), (3) and (4)]	391.45	266
d. Free Distribution by Mail, Carrier or Other Means		
1. Outside County	145.5	145.5
2. In-County	3	3
3. Other Classes Mailed Though the USPS	0	0
e. Distribution Outside the Mail	0	0
f. Total Free Distribution [sum 15d(1), (2), (3) and 15(e)]	148.5	148
g. Total Distribution (Sum of 15c and 15e)	539.95	414
h. Copies not distributed	27.65	66
i. Total (Sum of 15g and 15h)	567.75	480
Percent Paid	69	55

17. Publication of Statement of Ownership: Will be printed in the Vol. 100, Issue 3, 12/17/2018 Issue of the publication.
18. I certify that the statements made by me above are correct and complete.

Seahvosh Nikmanesh
Executive Director
(JPTOS) 12/12/2018

colophon

The Journal of the Patent Trademark Office Society (ISSN 0882-9098) is America's oldest continuously published intellectual property law journal and falls under the aegis of the Patent & Trademark Office Society. The Journal is edited and produced by members of the PTOS, with the generous support from the PTOS and our corporate advertisers.

Section titles, headers and footers are set in cabin. Author names, footnotes and article text are set in TeX Gyre Pagella. Documents are formatted with lyx and set in LaTeX. Final alterations, advertisements and the title page crop are done with Adobe Acrobat Professional and Inkscape. The print version of the Journal is published on 7″x10″ acid-free 60# paper.

Journal of the Patent and Trademark Office Society

Periodicals Postage Paid at Arlington, VA and at additional mailing offices

ISSN 0882-9098
USPS 285-060