# **Chapter 8 Practical Tips for Achieving a Great Application**

A patent application has three parts: claims, drawings, and specification. As alluded to previously, experts say: THE NAME OF THE GAME NOW IS NOT JUST CLAIM. IT'S THE ENTIRE PATENT. Whereas Chapter 7 focuses on the mechanics of drafting an application, this chapter shares with you many tips I have acquired from numerous patent attorneys to achieve a great application. I'll first describe the general principles on which those tips for accomplishing a great application are based.

In addition, I'll discuss drafting an application for patent licensing to take advantage of monetizing opportunities foreseeably available and potentially more in the future. Furthermore, I'll introduce a strategy for claiming an invention in all its commercially consequential contexts to realize the total value of the invention. I'll then put the principles into practice by drafting the main parts of a patent application for a hypothetical invention from scratch before your eyes, applying some of those tips. Lastly, I'll cite some principles in providing high-quality patents and avoid the most common errors from experts.

## 8.1 General Principles

According to some patent experts, one way to present the tips is to enumerate many dos and don'ts in preparing an application.

Let me start with don'ts first. As I have described in Chapter 7 a lot of don'ts for claim drafting, herein I include a bunch of what the specification should **avoid** (not an exhaustive list):

## What Specification Should Avoid

1. limiting language or narrow terms;

**2. "patent profanity"** (absolute terms: always, never, must, only, needed, etc. and emphatic words: critical, necessary, essential, important, etc.), which limits patent scope;

- 3. narrow examples without broader description;
- 4. characterizing features of the invention (as important, for example);
- 5. associating any particular characteristic with the invention;
- 6. emphasizing unclaimed features in embodiments;
- 7. admitting a reference being prior art (already mentioned previously);
- 8. characterizing a reference as prior art; and
- 9. describing anything as obvious.

Next, at the risk of **repeating** myself, I'm trying to describe an integrated set of Dos for your application, which is not in any particular order. Still, they are comprehensive and understandable, incorporating the great teachings of many patent attorneys. These patent experts are incredibly knowledgeable of the PTO guidance on application drafting and case law of recent years. These tips may give you extra assurance of patentability and the power to withstand patent challenges in litigation.

Dos for Drafting a Great Patent Application

#### Patent App Drafting Considerations

When you describe your invention for a patent, first of all, you should keep in mind your potential audiences: examiner, judge, investor, competitor, infringer, infringer's legal counsel, persons of ordinary skill in the art (public), and finally potential licensee. The best drafting practice to follow is to describe the details and enablement of your invention fully in the specification, prepare claims broadly, illustrate the invention clearly and sufficiently, and include the details in dependent claims. Regarding claims, they should clearly and precisely inform the public of the boundaries of the subject matter sought for protection.

#### **Specification Writing**

A specification needs to provide sufficient disclosure to convince a person of skills in the art that you as an inventor possess the invention. "Enablement" as a separate and distinct requirement must be satisfied to enable him to make and use the invention without undue experimentation. You also need to disclose the "best mode" to carry out your invention.

Your disclosure should include what you have specifically invented (i.e., preferred embodiment), but it should also encompass alternative embodiments and different variations (as many as practical) of your invention that you don't want a competitor to pursue. Quality, not quantity, of examples should be provided. It would help if you qualitatively spread out your examples to cover the entire scope of the claims. Each embodiment should be encompassed in one or more claims. Embodiment is a tangible manifestation of an invention; it's a manner in which an invention can be made, used, practiced, or expressed. This practice can result in the broadest protection (and avoid risking court-imposed restrictions). Furthermore, having a broad patent that captures as many variations as possible can create additional opportunities to monetize the patent.

Moreover, you should analyze the existing art in the relevant field and assess the level of guidance the art reasonably would provide one skilled in the art. Make this assessment when determining the scope of the claims. If there is a **novelty** in the claims dedicated to new technology, you must appropriately support it in the specification with proper guidance or examples applying to that scope.

Describe your invention in detail. For an apparatus or product, describe each component, how components fit together, and how they cooperate. For a process (or method), describe each active step, and include at least one unique step, to achieve your desired result. Make the description fit all possible alternatives relating to your invention. Suppose a component can be made of a different material. In that case, state that. Describe each component in enough detail so that at least one version of your invention may be reproduced.

#### **Design-around Avoiding**

Experts indicate that it is essential to visualize how your **exact** products and services will be commercialized to structure the specification and draft the claims to cover them accordingly. Also, it helps to picture how your competitors might do to compete. Claim 1 should recite only essential feature(s) (including a point of novelty) and be broad enough to avoid any designaround by a competitor. Case in point: I found that I made an error in patent claiming, which would allow a design-around, shortly after I received the patent. I filed a reissue patent application and obtained a reissue patent (re41,913) to broaden my patent claims and avoid design-around. See Chapter 10.

#### **Revisited Strategic Claiming**

Claims define the subject matter to be protected by the patent in technical terms. They are the legal basis for your patent protection, a boundary line around your patent that clarifies when anyone infringes on your rights. The words and phrases of the claim language define the limits of this line. When possible, you should develop a claim strategy shooting for various claim scopes -- some independent claims being broader or narrower than others. You should draft claims in simple language. Claim language should be easy to understand and must be definite to avoid § 112(b) rejection. And, the claim itself should be concise. Use any word only if it is necessary for your claim language. Claim terminology should be adequately supported with specificity and/or with alternative definitions in the written description if it is not commonly known.

#### **Drawing Creating**

After drafting claims, you need to prepare suitable visual supporting materials that describe your invention as soon as you can. Experts say that the drawings are the most crucial part of the patent application after the claims. Where possible, the drawings should serve to explain the invention in such enough detail that reading the detailed description section merely confirms the information conveyed in the drawings in most cases. The illustrations should be complete and include all essential information. Remember, better drawings make a better patent. (I strongly encourage inventors to make drawings themselves for effectiveness, efficiency, and/or cost.)

#### **Additional Helpful Considerations**

Even though a mechanical or electrical invention is considered predictable art, you need to evaluate whether to include broad genus, sub-genus, and species claims of varying scopes to ensure that the disclosure sufficiently enables the scope of the genus claim.

Applicants can boost their potential patent enforceability by drafting strong dependent claims in association with the right type of details described in the specification.

Incidentally, one of the best ways to learn how to draft a patent application for your invention is to look at previously issued similar patents. Prior art search can help you find them.

Before filing, claims and the specification should be thoroughly proofread to ensure there are no § 112 issues, as they may be annoying to some examiners who'd prefer to check for other issues. (It is highly recommended that you consult an experienced patent practitioner before filing.)

Also, in a provisional application, preferably include at least one independent claim plus several dependent claims.

## 8.2 Drafting Application for Patent Licensing

Some experts advise drafting a patent application from a business perspective to maximize your patent value and take full advantage of your commercialization options. The three possibilities there include 1. patent licensing (or patent selling in some cases), 2. producing and selling a product yourself, and 3. collaborating with another business or a university. Commonly, a patentee takes the option of licensing (or cross-licensing). For example, you, as a patentee, could license your technology to a larger and more established company with an existing presence in that market and gain royalties for each product they sell.

Unlike the second option above, licensing enables inventors to earn income without investing resources and time into producing the product themselves, even for less profit. Besides, a licensor will often have more industry knowledge and ready access to markets.

One of the most crucial determinants of patent value is the number of independent claims. The reason is that claims are expensive to draft and prosecute (filing fees are higher for patents with many claims). But, **broad patent claims** and **continuations** bring benefits for the patent family:

- Broader freedom to operate,
- More assertion opportunities for the patent owner, and
- Harder to invalidate because of the expense of attempting to invalidate the claims.

Frequently, the claims you draft are broad. Even though you may narrow down your broad claims during prosecution for patentability purposes, fewer people are willing to challenge your patent. This is because you assure that you have covered vast grounds to protect your technology. (Suppose you originally file a patent with narrow claims. It is easier to discredit them because you may have only a few features described. Any competitor can change one part in the patent and get away with it because technically, he has not "infringed" your patent.)

Next, I'd like to discuss the consideration of continuation applications for potential licensing.

Considering Continuation Application for Potential Licensing

The business case for these patents is to apply your technology to "other" fields. Experts suggest that claims be drafted in the present application based on results of extensive prior art searching in an effort to find not-yet-covered areas. Beyond that, an application can be well written to reflect consideration of possible areas of future coverage. Including such information supports broad and valuable coverage in a patent. It is unnecessary to have all of the claims for that purpose, but the disclosure should appear in the patent application. In the future, should another potential licensee show interest in one of these areas, a **continuation** (or, possibly, a continuation-in-part) **application** can be filed, extending from that particular aspect of the basic concept. The new application can benefit from the earlier filing date in some instances. (A continuation application can be filed at any time while at least one patent application in the family is pending.)

In structuring the patent application, it pays to incorporate as many alternatives as possible for future expansion. It is hard to predict what will have future value, and it may not be worth having claims for ideas for future uses in the application. Nonetheless, **it is worth including a sentence or paragraph (or more) about a possible alternative there**. The application can include

Considering Continuation Application for Potential Licensing (Cont'd)

"sleeper" inventions that can remain resting and be awakened when discovered to have a particular value.

This idea is not new. On March 7, 1876, Alexander Graham Bell received a US patent titled IMPROVEMENT IN TELEGRAPHY (No. 174,465). In this patent, he describes the method of, and apparatus for, transmitting vocal or other sounds telegraphically over a single wire. Toward the end of the patent, he indicates: "Another mode is shown in Fig. 7, whereby motion can be imparted to the armature by the human voice or by means of a musical instrument." He is credited with inventing and patenting the first practical telephone. The value of that indication in his patent manifests in a series of infringement cases (known as "The Telephone Cases") in the 1870s and 1880s. They culminated in the 1888 decision of the US Supreme Court upholding the priority of the patents belonging to Alexander Graham Bell.

If interested, read the related article "Designing Patent Application for Possible Field-of-Use Licensing" (in Chapter 10.3 of ipHandbook of Best Practice) by Arne Olson to explore possible future uses of the inventive technology for licensing. Also, go to following websites for "Continuation Application Strategy": (1) cooleygo.com/using-continuatuin-applications-strategically/; (2) yospinlaw.com/2019/10/02/continuation-application-strategies; and (3) greyb.com/patent-continuation-strategy/.

Next, I discuss another concept known as "invention context," also referred to as "claim perspective." It is an environment in which the invention is evident. Your invention needs to be claimed in all its commercially consequential contexts to maximize license royalty income (or damages in case of a patent infringement).

### Multi-context Invention

According to some patent experts, in some instances, to realize the total value of the patent, you need to claim your invention in all its commercially consequential contexts. For example, the toothbrush invention I introduced in the preceding chapter is a multi-context invention. The contexts are the toothbrush itself, the (detachable) brush head module, the brush head module making machine, and the handle.

An invention can frequently be defined in a given context using more than one statutory claim type. As indicated in the preceding chapter, the toothbrush invention is defined in terms of an apparatus claim reciting the structure of this dental device, a dental system claim (a bigger picture), and a method claim for using the toothbrush and changing the brush head. Because of a potentially substantially larger demand for the brush head module (replaceable every 3 to 4 months), a module-making machine can be defined in another apparatus claim reciting the machine's structure. Furthermore, a method claim can be included to describe how this machine operates to produce the module. Whether a handle-making device needs to be defined in the handle context is less clear because of a low-quantity need. (A potentially higher licensing royalty rate justifies an excess claim fee payment due to the use of more than three independent claims.)

Note that an invention context is different from an invention embodiment. The embodiment deals with details of how the invention is implemented.

## 8.3 An Application Drafting Practice Example

We have learned quite a bit of general principles for drafting an excellent patent application by now. Let's see if we can put the principles into practice. Some of the patent examples I have presented so far and will present in the next chapter are somewhat sophisticated. Herein, let me pick a simple **invention**, hypothetical in nature, but something (product) everyone is already familiar with: namely, "**DETACHABLE BOTTLE SEALER**." Shall we try to draft a **patent application** for it in terms of its structure, functions, physical forms and variations, use, and claims? Yes.

There are many types of bottled products, liquid or solid. Their bottles require various types of closure (sealer) attached to the mouth of each bottle to make its contents inescapable and protected. Still, the sealer can be detached for contents dispensing or refilling. Familiar bottles are water bottles (small/large), juice bottles, liquid soap bottles, baby bottles, wine bottles, etc.

Let's not worry about prior art (such as crown cork bottle cap). Just come up with many claims, create illustrative drawings, and draft a specification for practice purposes only (not in a manner for filing). Check out these parts below to see if I achieve a "great" patent application.

### Claims (for the Invention: DETACHABLE BOTTLE SEALER)

1. A container apparatus comprising:

a bottle having a neck ending in an opening for access to interior of the bottle; and

a sealer detachably attachable to the bottle around the opening to seal the bottle.

2. The apparatus of claim 1, wherein the bottle further comprises an external thread with at least one turn disposed around the neck, onto the thread the sealer configured to be a round screw cap is rotated until seating securely against the bottom of the neck, thereby sealing the bottle, wherein inside wall of the sealer is compatible with the external thread of the bottle in diameter, configuration, and height.

3. The apparatus of claim 2, wherein the sealer is rotatable in an opposite direction to open the bottle, hence being detachable from the bottle.

4. The apparatus of claim 2, wherein the sealer has a bottom hold ring connected thereto by a plurality of thin bridges configured to break apart from an upper sealer body upon unscrewing of the sealer.

5. The apparatus of claim 2, wherein the sealer further comprises a handle disposed thereacross.

6. The apparatus of claim 2, wherein top of the sealer is configurable to be opened up.

7. The apparatus of claim 2, wherein through an opening of a sealer top a pump spout juts out, with a dip tube thereof being placed inside the bottle.

8. The apparatus of claim 2, wherein a nipple is attached to an opening of a sealer top.

9. The apparatus of claim 2, wherein the bottle is made of glass.

10. The apparatus of claim 9, wherein the sealer is made of recyclable metal selected from the group consisting of aluminum and steel.

11. The apparatus of claim 1, wherein the bottle further comprises a handle.

12. The apparatus of claim 11, wherein the sealer is an external two-part cap, wherein the lower part has a tab, capable of being pulled up and around the bottle neck to break off the lower part, making the upper part a detachable lid for the bottle.

13. The apparatus of claim 1, wherein the sealer is an internal stopper, a part of which extends beyond the opening of the bottle, such extension configured to enable the sealer to be pulled out of the bottle entirely.

14. The apparatus of claim 1, wherein the bottle made of glass has a long narrow neck, and the sealer is an internal stopper configured to be inserted entirely from top surface of the bottle opening inwardly, the internal stopper made of buoyant material such as cork in a compressed state, once inserted detachable by use of a device such as comprising a handle and a pointed spiral metal rod, whereby with bottle contents being wine, the wine is ready for dispensing.

15. The apparatus of claim 14, further comprises a detachable protective sleeve covering top of the bottle.

16. A system comprising:

a backpack comprising an external pocket, the backpack configured to be worn by a traveler; and

a container apparatus comprising a bottle and a detachable sealer attached to the bottle, the apparatus configured to be removably held in the pocket;

wherein the bottle is to contain desired consumable such as beverage, made inescapable by use of the sealer.

17. The system of claim 16, further comprises a drinking straw insertable into the bottle subsequent to retrieving the bottle from the pocket and detaching the sealer from the bottle for bottle contents consuming.

18. A method comprising:

providing a bottle, made of recyclable material, capable of containing desired consumable, the bottle comprising an externally threaded neck;

providing desired consumable to be contained by the bottle;

providing a detachable recyclable sealer to be mated with the bottle;

filling the bottle with the desired consumable;

rotating the detachable sealer onto the bottle neck clockwise to attach the sealer to the bottle, making contents thereof inescapable;

retrieving the bottle with the attached sealer to consume the contents;

rotating the sealer counterclockwise for detachment from the bottle;

consuming the contents of the bottle with the sealer detached; and

placing the bottle and the sealer in a recycling collection container.

19. The method of claim 18, further comprising providing a backpack comprising an external pocket capable of removably holding the bottle with the detachable sealer attached thereto.

20. A method for making a cork stopper for sealing a wine bottle, comprising:

providing a plurality of selected seasoned, boiled, and dried planks of cork wood;

cutting the planks into a plurality of strips;

punching the strips manually and/or by mechanical means to extract a plurality of cylindrical cork stoppers each of which being suitable size-wise for insertion into a wine bottle;

separating the stoppers mechanically and sorting the stoppers optically by a machine and manually by a human inspector for classifications based on visual quality;

submitting selected quality stoppers to a steam distillation process;

polishing the distilled stoppers for a clean, smooth finish;

washing, drying , and stabilizing the polished stoppers; and

branding and packaging the stabilized stoppers in response to a confirmation that the stoppers have met established requirements, whereby each cork stopper is ready for use by a wine bottle.

The above claims are not hard to draft and encompass many alternative embodiments and variations. I have four independent claims and 16 dependent claims. The fourth independent claim is subject to an excess independent claim charge by the PTO. Claim 1 is broad, and with its chained and non-chained dependent claims, it captures all those alternative embodiments and variations I can envision. Undoubtedly, there may be other embodiments/variations I have not included. Also, note that the invention is claimed in two contexts: an all-purpose bottle sealer (round screw cap) for everyday use and a wine bottle sealer, the latter being a preferred high-quality cork stopper, aka cork plug. The market size of wine bottle cork stoppers is enormous. (Incidentally, I'm not in a position to claim a cork stopper-making machine because several large-scale automatic or semi-automatic machines are already in use.)

So, afterward, when we provide 1. drawings to include all claim features, 2. sufficient written description details to confirm all the information conveyed by the illustrative drawings to cover claim features and description of the invention, and 3. an enablement discussion, we will satisfy the PTO application requirements. Thus, we will have demonstrated that the "inventor" possesses the invention, and the person of ordinary skill in the art can make and use the invention without undue experimentation. Let's move on to drawings first.

Drawings



Drawings (Cont'd)



Drawings (Cont'd)



#### BRIEF DESCRIPTION OF THE DRAWINGS

[0001] A more detailed description of the embodiments briefly described above will be rendered by referencing specific embodiments illustrated in the appended drawings. These drawings depict only some embodiments and are not considered limiting of scope. The embodiments will be described and explained with additional specificity and detail through the use of the accompanying drawings, in which:

[0002] FIG. 1 is a front perspective view of one embodiment of a system for carrying a container apparatus including a bottle with attachment of a round detachable screw cap;

[0003] FIG. 2 is a front perspective view of one embodiment of an unassembled container apparatus including a bottle and any of various detachable round screw caps, each matable with the bottle as a closure;

[0004] FIG. 3 is a front perspective view of one embodiment of a container apparatus including a bottle with attachment of a detachable round screw cap, through top of which a pump spout is installed with a dip tube inserted in the bottle;

[0005] FIG. 4 is a front perspective view of one embodiment of a container apparatus including a bottle and a detachable round screw cap attached thereto, through top opening of which a nipple is attached;

[0006] FIG. 5 is a front perspective view of one embodiment of a container apparatus including a large bottle with a handle and an attached two-part cap, configured to have the lower part torn off upon bottle opening, making the upper part a detachable lid for the bottle;

[0007] FIG. 6 is a front perspective view of one embodiment of a container apparatus including a bottle with an internal stopper inserted therein, with top the of the stopper extending outside of the bottle;

[0008] FIG. 7 is a front perspective view of one embodiment of a container apparatus including a bottle with a long narrow neck and an internal stopper inserted entirely from opening of the bottle inwardly, with detachment of the stopper requiring the use of an extraction tool;

[0009] FIG. 8 is a schematic flowchart diagram illustrating one embodiment of a method for sealing and unsealing contents of a bottle with a cap and disposal of the bottle emptied; and

[0010] FIG. 9 is a schematic flowchart diagram illustrating one embodiment of a method for making a cork stopper used to seal a wine bottle.

#### DETAILED DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 is a front perspective view of one embodiment of a system 100 for a traveler carrying a sealed container apparatus. In the depicted embodiment, the system 100 includes a traveler-worn backpack 110 with an external pocket 130 on a side, and a bottle 115 with attachment of a round screw cap 120 being held in the pocket 130. Details of the bottle 115 and the screw cap 120 are included in the description of FIG. 2. Usually, the going-to-school traveler wearing the backpack 110 may have the bottle 115 filled with some kind of beverage for thirst quenching. The screw cap 120 is rotatable and detachable from the bottle 115 manually. In some cases, a drinking straw (not shown), typically, a narrow long tube, may be made available to allow its user to more conveniently consume the beverage.

[0012] FIG. 2 is a front perspective view of one embodiment of an unassembled container apparatus 200 including a bottle and any of various detachable round screw caps, each matable with the bottle as a closure. The description of FIG. 2 refers to elements of FIG. 1, like numbers referring to like elements. As shown, the apparatus 200 includes a bottle 115 and any of round screw caps 120, 230, and, 240, each of them configured to mate with the bottle 115. The screw cap 240 includes the screw cap 120 with a handle affixed thereacross. The bottle 115 may be made of an impermeable recyclable material such as plastic, glass, aluminum, and the like, in any of various common shapes and sizes to store and transport liquids or solids, typically without a handle. In terms of liquid contents, usually, it may be water, juice, soft drink, milk, medicine, liquid soap, or skin lotion. An example of solids is nutritional supplement or medicinal capsule, caplet, or softgel (aka pill). In terms of anatomy, bottle 115 includes, from the top down, an opening (the extreme upper sealing contact surface) shaped to accommodate a closure, a neck section (constricted part), and extending down from there, a neck ring (i.e., neck bottom), a shoulder being below the neck, a body following the shoulder, and a base. Body shape and bottle capacity are the usual selection factors. A popular bottle shape is cylindrical. Cylindrical bottles can provide for greater comfort and less hand fatigue when dispensing its contents as compared with different bottle shapes. In general, to create a seal for a filled bottle,

the bottle is usually capped or plugged. The bottle sealer in any of various forms protects the bottle contents from dust, spilling, evaporation, and atmosphere.

[0013] Herein, the bottle 115 is a general-purpose bottle. The bottle 115 has an external thread with at least one thread turn built around the upper neck, and can be sealed with an external cap, commonly round in shape, such as the shown screw cap 120, regardless of the bottle shape. The screw cap 120 is often made of plastic (different material from that of the bottle 115) or in some cases, of metal. Plastic caps are used on either plastic or glass bottles while metal caps are typically used on glass bottles. The bottle 115 and its corresponding sealing cap such as the screw cap 120 must have matching parameters. Specifically, the outside diameter of the bottle thread matches the diameter measured across the inside of the cap's opening. Furthermore, the bottle thread configuration (or style) and height of the neck dictate the inside wall structure of the cap and the height of the cap. The thread may be continuous or non-continuous. The continuous thread may have one thread turn, 11/2 thread turns, or 2 thread turns, and the height of the cap varies accordingly, for example. Typically, the screw cap 120 cannot rotate onto the bottle 115 beyond the bottle neck ring.

[0014] Plastic screw caps are most often used to seal bottles and jars with special seals, optional liners, and dispensing features. These caps can be made from material such as polypropylene (PP), polyethylene, or polystyrene, with PP being the most common material. The easiest and most common method to produce these caps is injection molding. There are molds, which are used to make specific shapes using molten plastic. (Metal caps can be either preformed or in some instances, rolled on after application.) They need to be properly engineered to provide an effective seal: to be compatible with the contents, to be easily openable by the consumer, often to be reclosable, and to comply with product, package, and environmental regulations. Some screw caps are made to be tamper-evident, such as with a bottom hold ring (attached to the cap body by thin bridges), which can break apart when an unscrewing of the cap is attempted.

#### DETAILED DESCRIPTION OF THE DRAWINGS (Cont'd)

The screw cap 230 is one example. Also illustrated is a handle 235 affixed to external side wall across the screw cap 120, enabling a capped bottle 115 to be carried around without holding on to the bottle 115. Another type of cap known as "swing-top cap" (not shown), whose top part can be swung up to uncover a small opening below for dispensing the bottle contents, may be provided. An example use of this cap is made in a re-loadable hand sanitizer bottle.

[0015] A detachable screw cap resembling the screw cap 120 (FIG. 2) in a way may have an assembly or component installed through an optional top opening of the screw cap for connection with the contents of a bottle 315 for dispensing, such as shown in FIG. 3. There, the bottle 315 has, in one embodiment, an attached screw cap 320 combined with a projecting pump assembly 335 for closure. The bottle 315 thus capped is typically used for storing and dispensing liquid such as soap or lotion. At the top of the pump assembly 335 is an actuator, or pump head, with a spout. This actuator is what a consumer presses down to pump the product out of the bottle 315. The actuator is often made of PP plastic and may have one of many different designs. It often comes with an up-lock or down-lock feature to prevent accidental output. There is a gasket often fitted to the inside of the screw cap 320 and acts as a gasket barrier on the bottle top area to prevent product leakage; it may be made from rubber or low-density polyethylene. Moreover, there are other components such as stem, piston, and spring plus a dip tube, which may be made of PP plastic and extends the reach of the pump to the bottom of the bottle. All these components are held by a pump assembly housing, which also acts as a transfer chamber that sends the product from the dip tube to the actuator, and ultimately to the user. For the liquid soap content, for example, the bottle 315 is usually refillable.

[0016] FIG. 4 is a front perspective view of one embodiment of a container apparatus 400 including a bottle and a detachable screw cap attached thereto, through top opening of which a nipple is attached. Thus assembled, a bottle 415 is known as a baby bottle, which is used to contain such things as infant formula and expressed milk. A screw cap 420 coupled to the bottle 415 is fitted with a nipple 435 through the top cap opening for giving milk to a baby. For feeding,

the baby will suck from the nipple 435, having a hole through which the milk will flow from the bottle 415. The screw cap 420 functions as a collar that goes over the bottom of the nipple 435 and typically screws onto the neck of the bottle 415, forming a seal. The nipple 435 is generally designed to be slimmer than the mother's nipple. Content of the baby bottle 415 is usually refillable. The nipple 435 and the material of the bottle 415 generally meet regulations of the FDA.

[0017] FIG. 5 is a front perspective view of one embodiment of a container apparatus 500 including a large bottle with a handle and an attached two-part cap, configured to have the lower part torn off upon bottle opening, making the upper part a detachable lid for the bottle. In the illustrated embodiment, a bottle 515 of that kind has a smooth neck, without any thread. In the factory a two-part cap 520 is made to wrap around the neck of the bottle 515, forming a tight seal of the bottle contents, usually drinking water with a fairly large volume such as one gallon. The lower part of the cap 520 has a tamper-evident tab, which can be pulled up and around the bottle neck to tear the part off by a ready consumer, forming a detachable cover with the upper part for the bottle 515.

[0018] FIG. 6 is a front perspective view of one embodiment of a container apparatus 600 including a bottle and an internal stopper inserted therein, with top of the stopper extending outside of the bottle. A depicted bottle 615 uses a stopper 620 of that kind. A material such as cork, the buoyant substance obtained from outer layer of the bark of the cork oak tree, is commonly used as the stopper. The elasticity of cork -- the ability to assert its normal size after compression -- is its primary attribute allowing it to be squeezed into the opening of the bottle 615 to create a seal. In addition, the cork's chemical inertness makes it ideal for sealing almost any type of bottled product, liquid or solid, while imparting no flavor to that product. Cork when kept moist by the liquid contents of the bottle 615 will stay plumper and maintain its seal over a long time. The internal stopper 620 extends outside of the opening of the bottle 615, so that the former can be pulled out completely for dispensing the bottle contents. In one embodiment, the internal stopper 620 is tapered from top down.

#### DETAILED DESCRIPTION OF THE DRAWINGS (Cont'd)

[0019] FIG. 7 is a front perspective view of one embodiment of a container apparatus 700 including a bottle with a long narrow neck and an internal stopper inserted entirely from opening of the bottle inward, with detachment of the stopper requiring the use of an extraction tool. As shown, a bottle 715 utilizing a sealer such as a cork stopper 720 may typically be used as a wine bottle, which has a "cork finish" (suitable for accommodating a cork stopper) and the standard 3/4-inch opening. Using the proper corks and corker are necessary for corking wine. A cork of cylinder shape known as "straight cork" such as the internal stopper 720 provides the maximum amount of sealing surface possible, which is the whole length of the cork. The straight corks come in different grades, in terms of density, choice, and natural vs. synthetic, and are priced accordingly, depending on the length of time the wine is to be stored. A chosen straight cork is to be first compressed and then driven into the wine bottle 715 by means of a tool known as corker. Corkers may be of different types depending on the speed desired, but all of them work primarily the same way. They have a compressing iris that evenly compresses the cork from all sides, down to about the diameter of a dime. Then, they drive the cork into the bottle 715 used as a wine bottle. For softening and sanitizing the corks ahead of insertion, steaming them is one method being recommended. It allows them to steam for anywhere from 1 to 3 minutes, depending on the cork. Too long a steaming is not advised. The goal is to have them give a little when being squeezed between one's fingers. After corking, the "wine" bottle 715 needs to be kept standing upright for 1-2 days. Thereafter, the wine bottle 715 needs to be stored on its side, so that the wine is touching the cork to keep the cork moist and expanded.

[0020] When bottling under natural cork, there is a margin of oxygen to the order of a few tenths of a milliliter of air that is diffused into the wine in the first few weeks. And, a few hundreds of milliliters over the next four months. This is significant as oxygen plays a critical role in wine making and the aging of wine. In one embodiment, a corked wine bottle 715 may have a protective sleeve 735 called foil (commonly known as "capsule") covering the top thereof.

#### DETAILED DESCRIPTION OF THE DRAWINGS (Cont'd)

The purpose of the sleeve 735 is to protect the cork of the internal stopper 720 from being gnawed away by rodents or infested with the cork weevil and to serve as collar to catch small drips when poring. In an alternative embodiment of a wine bottle sealing, a metal screw cap, normally made of aluminum, is used to screw onto a wine bottle neck having external threads.

[0021] FIG. 8 is a schematic flowchart diagram illustrating one embodiment of a method 800 for sealing and unsealing content of a bottle 115 and disposal of the bottle 115 emptied. The description of FIG. 8 refers to elements of FIG. 2, like numbers referring to like elements. The method 800 begins by providing 805 a bottle such as the bottle 115, which has externally threaded neck, and is made of a recyclable material, and is to contain desired consumable. The method 800 proceeds to provide 810 desired consumable and provide 815 a recyclable detachable sealer, namely screw cap 120, to be mated with the bottle 115. The method 800 for the bottle 115 with the desirable consumable. Then, the method 800 rotates 825 the screw cap 120 onto the bottle 115 clockwise to seal the bottle contents. The method 800 continues to retrieve 830 the bottle 115 to consume the content. The method 800 then rotates 835 the screw cap 120 counterclockwise for detachment from the bottle 115. The method 800 proceeds to consume 840 the contents by a consumer. Finally, the method 800 places the bottle 115 and the screw cap 120 in a recycling collection container once the bottle 115 is emptied.

[0022] FIG. 9 is a schematic flowchart diagram illustrating one embodiment of a method 900 for making a cork stopper used to seal a wine bottle 715. The description of FIG. 9 refers to elements of FIG. 7, like numbers referring to like elements. The method 900 begins by providing 905 selected seasoned, boiled, and dried planks of cork wood. The method 900 proceeds to cut 910 those planks into strips, and punch 915 the strips manually and/or mechanically to extract out cork stoppers resembling the stoppers 720 in size and shape (such as cylindrical). The method 900 then separates 920 the stoppers mechanically and sort them optically and manually to classify them based on visual quality. The method 900 polishes 930 the distilled stoppers for a clean, smooth finish. Afterward, the method 900 washes, dries, and stabilizes 935 the polished stoppers. Finally, the method 900 brands and packages 940 the stabilized stoppers following a confirmation that they have met established requirements.

### ABSTRACT OF THE DISCLOSURE

Disclosed is a container apparatus including a bottle and a sealer detachably attachable thereto for sealing bottle contents, liquid or solid, protecting them from dust, spilling, evaporation, and/or atmosphere. The sealer configurable as an external round screw cap for a general-purpose bottle having an externally threaded neck is made compatible therewith in diameter, configuration, and height with the cap interior. Several features can be added to such caps, such as a tamper-evident band, a handle across the sidewall, a pump spout assembly, and a nipple through an opening on the cap top. For a wine bottle with a non-threaded neck, the sealer is configurable as an internal stopper, using a wad of buoyant material such as natural cork for wine sealing and wine aging. Corking the wine bottle requires the use of a special tool. So does detaching the cork from the wine bottle.

Note that claim 6 recites that the top of the sealer is configurable to be opened up. The written description includes an embodiment corresponding to the claim without referencing figures. Claims don't have to be limited by what is shown in the figures if supported by the specification.

Incidentally, I had patent attorney Scott look at my "practice application" (initial claims and drawings) presented above. He said: "It looks good." Nevertheless, I would like to point out one possible drawback in having multiple claim types:

When a claim set includes both an apparatus claim and a method claim, a PTO examiner might consider the application involving two different inventions and render a "restriction requirement" in some instances. It generally requires the applicant to elect one of the two inventions. If so, elect the apparatus. I had it happen to my belt patent application I drafted. Surprisingly, the examiner allowed my unelected invention (i.e., method) as well at the end of the prosecution.

Some experts indicate that even though the patent application is "restricted" to only one invention under the restriction requirement, divisional patent applications can be carved out of the original parent patent application. Each resulting patent can be directed to different use and licensed separately, presenting a new opportunity.

## 8.4 Senior Practitioners' Guidance on Application Drafting

My boss, patent attorney Brian at Kunzlerwrote an internal memo that describes his suggested guidelines on optimizing the flow of the patent application contents. I thought they were pretty logical and organized. After seeing his directive, I switched my presentation to how he described it. He suggested that we start with the "big picture" first, a system figure encompassing the apparatus. A description of the system is presented first (even though in the claim section, we include the apparatus claim first). When describing an apparatus figure, be sure to note where the apparatus is located in the system figure. Description of flowcharts comes last (before claims).

Patent attorney Larry Goldstein in his book *Litigation-Proof Patents: Avoiding the Most Common Patent Mistakes* (2014), presents **ten** of the most common errors in patents to avoid and discusses principles of patent quality. I list said common errors to avoid and some of his principles on patent quality below with his permission.

1. Unclear Key Claim Terms.	6. Lack of Claim Mix.
2. "Roads Not Taken" [i.e., No Alternatives].	7. Improper Mix of Elements Within a
	Claim.
3. Defective Parallelism [inconsistency btw claims,	8. Improper Use of Non-standard
or inconsistency in terminology within each claim].	Terminology.
4. Unnecessary Limitation in Written Description.	9. Incorrect Reliance on the Preamble.
5. Improper Use of Claim Differentiation.	10.External Events Destroying Patent Value.

#### 10 Common Errors to Avoid

Note that "claim differentiation" in item 5 above is a judicially created doctrine that says no two claims in the same patent should be interpreted to cover the same thing. In other words, if there is a dependent claim, the claims should be interpreted such that there is a difference between a dependent claim and the claim to which it refers. The use of claim differentiation to explain KCTs is improper.

Following is a list of several principles of drafting clitigation-proof" patents I extract out of the book, which identifies the principles of top-quality patents, making them "litigation-proof:"

### Some Principles of Writing Litigation-Proof Patents

(1) Characteristics of Good patent Claims

Principle 1: A short and simple preamble is good.

Principle 2: A small number of claim elements is usually good.

Principle 3: "General" elements in claims tend to be much better than "specific" elements.

Principle 4: A large number of elements might not narrow the claim if the elements are very general.

(2) Key Claim Term (KCT)

A Key Claim Term (KCT) is a specific word or specific phrase appearing in a claim that helps define the nature or scope of the claim. A KCT may be self-explanatory (without any support). If it is not, there is definitely a need to explain it in the application (per Principle 10 below). Failing to do so is the single most common mistake made in technology-based patents.

Principle 5: Clarity of KCTs is of vital importance to the value of patent.

Principle 6: Patent litigations are almost always decided on the interpretation of one or a very small number of KCTs.

Principle 7: An attack by a defendant against a claim is very frequently an attack against a KCT, and such attack can be defeated if the patent clearly explains the term.

Principle 8: If a claim term is very clear in the technology, it needs no explanation.

Principle 9: The process of writing KCTs is iterative--pick, explain, review, add new ones...

Principle 10: A KCT may be defined in any or all of three specific ways: (1) explicit

definition, (2) examples, and/or (3) an element in a figure plus accompanying explanation.

Furthermore, I would like to point out several "for your information" items, as follows:

Some practitioners caution that specifications containing permissive language such as "the apparatus **may** (or **can**)" can sometimes be found indefinite by a judge or the PTAB.

An article by patent attorney Dr. Michael Henry titled "How to Avoid Applicant Admitted Prior Art in Your Patent Applications" (Jul. 17, 2019) is informative. So is his free downloadable ebook *Prior Art and the Patent Process: What Smart Tech Companies Need to Know*. I would take his advice on avoiding admission of the prior art, rather than the PTO's guidance on the limited use of "applicant admitted prior art" as stated in its memo. Andrei Iancu, Under Secretary and Director of the PTO, on Aug. 18, 2020, issued the memo titled "Treatment of Statements of the Applicant in the Challenged Patent in Inter Partes Reviews Under § 311."

Incidentally, there are software tools available for optimizing patent application quality for your to explore. See Chapter 11. While there, you can also find a tool and tips for routing applications to the desirable tech center group in the PTO, with some changes in the draft if possible. thus, you may have a better chance of getting a patent in the shortest time. Do check them out.

Last but not least, a Patent Pro Bono Program is available for independent inventors and small businesses that meet certain financial thresholds and other criteria to receive free legal assistance in preparing and filing a patent application. Check it out at the PTO website.

**Chapter Summary:** To maximize your invention's patentability and commercial value of your invention, I share with you many experts' tips for achieving greatness in your patent application. These apply to claims, supportive drawings, and the written description of the drawings -- the whole schmear. Besides, I discuss a strategy for claiming your invention in all its commercially consequential contexts to realize the total value of your patent. Along the way, you learn to recognize that the royalty base in one context is significantly larger than another. To take a step further, I encourage considering designing an application for patent licensing (without investing resources and time to gain income) with the original patent and possibly a potential continuation patent without pre-claiming.

To demonstrate how some, but not all, of those tips can be applied to practice, I draft a "practice" patent application for a hypothetical invention named Detachable Bottle Sealer from scratch, pretending there is no "prior art." I end up with four independent claims and 16 dependent claims, capturing all my conceived embodiments in the scope of the patent and two invention contexts. One of the contexts may involve an enormous market size for an aspect of the invention (wine bottle sealer -- cork stopper).

Lastly, to help achieve high-quality patents, I cite with his permission patent attorney Larry M. Goldstein's fundamental principles of drafting "litigation-proof" patents and teaching on avoidance of most common patent mistakes. I also point out some guidance from other senior patent attorneys on drafting a great patent application.