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March 29, 2019

Re: Sale of Patents
In re ATS MER, LLC., fdba Materials & Electrochemical Research Corp
Chapter 7 Case 2:19-bk-01653-PS

ATTENTION:

This correspondence is directed to parties who may have an interest in bidding on a package of patents pending sale before the United States Bankruptcy Court for the District Of Arizona. A copy of the Sale Motion is attached.

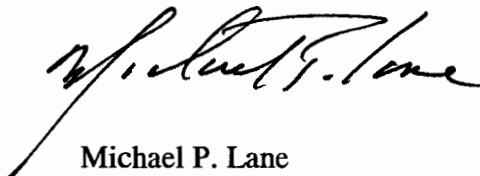
Trustee Brown has a continued sale hearing before the Court for the Debtor's interest in 53 patents. I have attached a copy of the Motion for Sale. The continued hearing is set for **April 30, 2019, at 1:30 p.m., MST.**

The high bid to date received by the Trustee is \$55,000. The Trustee encourages and welcomes higher bids at hearing. If you are interested in participating in this auction, please indicate your interest and your bid by email to the undersigned.

Thank you for your attention to this matter.

Very truly yours,

LANE & NACH, P.C.



Michael P. Lane

MPL/smr
attachment
cc: Roger W. Brown, Trustee

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9 Attorneys for Roger W. Brown, Trustee

10 **IN THE UNITED STATES BANKRUPTCY COURT**
11 **FOR THE DISTRICT OF ARIZONA**

12 In re:
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ATS MER, LLC., fdba MATERIALS &
ELECTROCHEMICAL RESEARCH CORP,

Debtor

(Chapter 7 Case)

No. 2:19-bk-01653-PS

**TRUSTEE'S APPLICATION TO SELL
PROPERTY OF THE ESTATE**

11 U.S.C. § 363

Hearing Date/Time: TBD

Roger W. Brown, Trustee, Chapter 7 Trustee (“Trustee”) for the Estate of ATS Mer, LLC., (the “Debtor”), by and through his attorneys undersigned, prays for the entry of an Order, pursuant to 11 U.S.C. §§ 105 and 363, approving the sale of certain assets of the Estate to Ed Parker/Plastics Products, Inc. and related terms (“Motion”). In support of the Motion, the Trustee respectfully states as follows:

MEMORANDUM OF POINTS AND AUTHORITIES

I. BACKGROUND AND JURISDICTION

1. This Court has jurisdiction over this Motion pursuant to 28 U.S.C. § 1334. This matter is a core proceeding pursuant to 28 U.S.C. § 157(b)(2)(A). Venue of this proceeding and this Motion is proper in this District pursuant to 28 U.S.C. §§ 1408 and 1409.

2. The statutory predicates for the relief sought herein are 11 U.S.C. §§ 105(a) and 363, as

1 well as Rules 2002 and 6004 of the Federal Rules of Bankruptcy Procedure.

2 3. This case was commenced by voluntary petition filed by the Debtor under Chapter 7 of
3 Title 11, United States Code, on or about February 15, 2019.

4 4. Among the assets of this Estate interests in are fifty-three (53) United States Patents
5 (“Patents”) as more detailed on Exhibit “A” attached hereto.

6 7. Trustee has received an offer from Ed Parker/Plastics Products, Inc. to purchase the
8 Estate’s interest in the Patents and all available related paperwork connected therewith, for a total purchase
9 price of Forty-eight Thousand Dollars (\$48,000.00) (“Purchase Price”). Payment of the Purchase Price
10 shall be made on or before the close of business on the second business day after the entry of an Order
11 approving this Application.

12
13 **II. RELIEF REQUESTED**

14 6. By this Motion, the Trustee seeks the entry of an order pursuant to 11 U.S.C. §§ 105
15 and 363(b) and (m), as well as Bankruptcy Rule 6004, (a) authorizing the Trustee to sell the Patents.

16 7. In the Trustee’s business judgment, the Purchase Price represents a fair and reasonable
17 sale price for the Patents.

18
19 **III. BIDDING PROCEDURES**

20 8. Contemporaneously herewith, the Trustee will be obtaining a hearing on this Motion
21 which will establish a deadline by which objections or responses to this Motion must be filed with the
22 Court (the “Response Deadline”).

23 9. While the Trustee is prepared to consummate the sale of the Patents to Ed Parker/Plastic
24 Products, Inc., pursuant to the terms set forth herein, this sale is subject to higher bids at hearing.
25 Trustee requests that the Court approve the following overbid procedures (collectively, the “Bidding
26 Procedures”):
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- 1 a. Any interested bidder who wants to participate in the overbid process must notify the
2 Trustee of its intention to do so in accordance with the Notice on or before the Response
3 Deadline;
- 4 b. Each overbid for the Patents must be at least \$1,000.00; and
- 5 c. In the event a party other than Ed Parker/Plastic Products, Inc. is deemed the winning
6 bidder with respect to the Patents, such other party shall be required to purchase the
7 Patents under the same terms and conditions set forth herein.

8 10. For the foregoing reasons, the Trustee believes that the sale of the Patents serves the best
9 interests of the Estate and creditors, as the sale will allow the Trustee to realize funds for the benefit of
10 the Estate. Accordingly, the Trustee believes that the sale to Ed Parker/Plastic Products, Inc. should
11 be approved as requested.

12 **IV. AUTHORITY FOR REQUESTED RELIEF**

13 11. Section 363(b)(1) of the Bankruptcy Code provides that “[t]he trustee, after notice and a
14 hearing, may use, sell or lease, other than in the ordinary course of business, property of the estate.” 11
15 U.S.C. § 363(b)(1). To approve use, sale or lease, other than in the ordinary course of business, the
16 Court must find “some articulated business justification.” *See In re Martin (Myers v. Martin)*, 91 F.3d
17 389, 395 (3d Cir. 1996) and *In re Abbotts Dairies of Pa. Inc.*, 788 F. 2d 143 (3d Cir. 1986) (requiring
18 good faith purchasing). Moreover, Section 105(a) of the Bankruptcy Code provides that “[t]he court
19 may issue any order, process, or judgment that is necessary or appropriate to carry out the provisions of
20 [the Bankruptcy Code].” 11 U.S.C. § 105(a).

21 12. Courts have held that transactions should be approved under Section 363(b) of the
22 Bankruptcy Code when they are supported by the sound business judgment of the debtor or trustee, as
23 the case may be. *See In re Martin*, 91 F.3d 389, 395 (3d Cir. 1986); *In re Del. & Hudson Ry. Co.*, 124
24 B.R. 169, 176 (Bankr. D. Del. 1991) (holding that transactions should be approved under Section
25 363(b)(1) when: (a) they are supported by the sound business judgment of a Debtor’s management; (b)
26 interested parties are provided with adequate and reasonable notice; (c) the sale price is fair and
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1 reasonable; and (d) the purchaser is acting in good faith); *In re Phoenix Steel Corp.*, 82 B.R. 334, 335
2 (Bankr. D. Del. 1987) (stating that the elements necessary for approval of a section 363 sale in a
3 chapter 11 case are “that the proposed sale is fair and equitable, that there is a good business reason for
4 completing the sale and the transaction is in good faith.”).

5
6 13. The Trustee submits that sale, as presented, is reasonable, for fair value, and was
7 negotiated at arm’s length and in good faith.

8 14. Courts have held that approval of a proposed sale of property pursuant to Section 363(b)
9 of the Bankruptcy Code is appropriate if a court finds that the transaction represents a reasonable
10 business judgment on the part of the Debtor. *See Comm. of Equity Sec. Holders v. Lionel Corp.*, 722
11 F.2d 1063 (2d Cir. 1983); *Stephens Indus., Inc. v. McClung*, 789 F.2d 386, 391 (6th Cir. 1986); *In re*
12 *Ionosphere Clubs, Inc.*, 100 B.R. 670, 675 (Bankr. S.D.N.Y. 1989); *In re Phoenix Steel Corp.*, 82 B.R.
13 334, 335 (Bankr. D. Del. 1987); *In re Del. & Hudson Ry. Co.*, 124 B.R. 169, 176 (Bankr. D. Del.
14 1991). A debtor’s showing of sound business justification, or as in this case the Trustee’s showing,
15 need not be unduly exhaustive; instead the Debtor or trustee is “simply required to justify the proposed
16 disposition with sound business reasons.” *In re Baldwin United Corp.*, 43 B.R. 888, 906 (Bankr. S.D.
17 Ohio 1984).

18
19 15. Whether or not there are sufficient business reasons to justify a sale depends upon the
20 facts and circumstances of each case. *See Lionel*, 722 F.2d at 1071. Bankruptcy courts are given
21 substantial discretion in deciding whether to authorize a sale of a Debtor’s assets outside of the
22 ordinary course of business. *See In re Chateaugay Corp.*, 973 F.2d 141, 144 (2d Cir. 1992). The
23 Trustee believes that the sale represents a prudent and proper exercise of its business judgment and is
24 in the best interest of creditors of the Debtor’s Estate.

25
26 16. Although the Bankruptcy Code does not define “good faith purchaser,” the United
27 States Court of Appeals for the Third Circuit construing section 363(m), has stated that “the phrase
28

1 encompasses one who purchases in ‘good faith’ and for ‘value.’” *In re Abbott's Dairies of Pa., Inc.*,
2 788 F.2d 143, 147 (3d Cir. 1986); See also *In re Mark Bell Furniture Warehouse, Inc.*, 992 F.2d 7, 8
3 (1st Cir. 1993); *In re Willemain v. Kivitz*, 764 F.2d 1019, 1023 (4th Cir. 1985); *In re Vanguard Oil &*
4 *Serv. Co.*, 88 B.R. 576, 580 (E.D.N.Y. 1988).

5
6 17. Additionally, the Court should approve the Trustee’s proposed Bidding Procedures.
7 Courts have routinely held that when the sale of assets in bankruptcy is done on a competitive bidding
8 basis, as is proposed herein, it is appropriate to require parties submitting competing bids to submit
9 bids that exceed the existing bid by a specified amount. See, e.g., *In re Financial News Network Inc.*,
10 931 F.2d 217 (2d Cir. 1991). Ed Parker/Plastic Products, Inc. has expended, and will continue to
11 expend, considerable time, money, and energy pursuing the purchase of the Patents as proposed herein,
12 and has engaged in good faith, arm’s length negotiations with the Trustee. Thus, the proposed Bidding
13 Procedures are appropriate and should be approved.

14
15 18. Based on the foregoing, the Trustee submits that the sale of the Patents is a prudent
16 exercise of his business judgment under the circumstances and is in the best interests of the Estate and
17 creditors. Therefore, the Motion should be approved.

18 **V. WAIVER OF STAY OF ORDER**

19 19. To successfully implement the sale, the Trustee also seeks a waiver of the fourteen-day
20 stay under Bankruptcy Rule 6004(h).

21
22 **VI. NOTICE**

23 20. Notice of this Motion will be given to the Debtor, the Office of the United States
24 Trustee, Ed Parker/Plastic Products, Inc., all parties on Debtor’s master mailing list and all parties
25 requesting notice pursuant to Fed. R. Bankr. P. 2002. The Trustee submits that such notice is proper
26 and adequate and no further notice is required. The Trustee further requests that this Court determine
27 that such notice is adequate and that other and further notice be waived.
28

EXHIBIT “A”

	Inventors	Title	Patent No.	Filing date	Priority date	Publication Date	Type of publication
1	Roger S. Storm, Vladimir Shapovalov, James C. Withers, Raouf Loutfy, Joel house	Multi component reactive metal penetrators, and their method of manufacture	US20130199397 A1	15-Jun-07	19-Jun-06	5-Nov-13	Granted
2	Magdi M. Nasrallah, Raouf O. Loutfy	Method of fabrication of construction materials from industrial solid waste	US8535435 B2	4-Apr-12	7-Apr-11	17-Sep-13	Granted
3	Raouf O. Loutfy, Juan L. Sepulveda, Sekyung Chang	Ready-to-sinter spinel nanomixture and method for preparing same	US8313725 B2	16-Jul-09	16-Jul-08	20-Nov-12	Granted
4	Roger S. Storm, Vladimir Shapovalov, James C. Withers, Raouf Loutfy	Method of using a thermal plasma to produce a functionally graded composite surface layer on metals	US8203095 B2	20-Apr-06	16-Apr-07	19-Jun-12	Granted
5	Alexander P. Moravsky, Raouf O. Loutfy	Methods for production of double-walled carbon nanotubes	US8182782 B1	9-Oct-02	6-Oct-00	22-May-12	Granted
6	James C. Withers, Raouf Loutfy	Continuous production of titanium by the metallothermic reduction of TiCl4	US7914600 B2	11-Jan-08	22-Jan-07	29-Mar-11	Granted
7	James C. Withers, Roger S. Storm, Vladimir Shapovalov, Raouf Loutfy	Composite armor tile based on a continuously graded ceramic-metal composition and manufacture thereof	US7955706 B1	28-Jun-07	30-Jun-06	7-Jun-11	Granted
8	James C. Withers, Roger S. Storm, Vladimir Shapovalov, Loutfy Raouf	Composite armor tile based on a continuously graded ceramic-metal composition and manufacture thereof	US7910219 B1	28-Jun-07	30-Jun-06	22-Mar-11	Granted
9	Raouf O. Loutfy, Alexander P. Moravsky, Charles N. Hassen	Thin film production method and apparatus	US7771784 B2	10-Mar-06	10-Mar-05	10-Aug-10	Granted
10	James C. Withers, Roger S. Storm, Raouf O. Loutfy	Low cost process for the manufacture of near net shape titanium bodies	US8394168 B2	31-Jan-06	31-Jan-05	12-Mar-13	Granted
11	James C. Withers, Lori A. Bracamonte, Roger S. Storm, Sion M. Pickard, Raouf O. Loutfy	Gun barrel and method of forming	US7721478 B2	27-Apr-05	27-Apr-04	25-May-10	Granted
12	James C. Withers, Raouf O. Loutfy	Thermal and electrochemical process for metal production	US7794580 B2	6-Dec-05	21-Apr-04	14-Sep-10	Granted
13	James C. Withers, Raouf O. Loutfy	Thermal and electrochemical process for metal production	US7410562 B2	21-Apr-04	20-Aug-03	12-Aug-08	Granted
14	James C. Withers, Raouf O. Loutfy	Thermal and electrochemical process for metal production	US7985326 B2	28-Sep-06	20-Aug-03	26-Jul-11	Granted
15	Raouf O. Loutfy, Perumal Pugazhendhi, Ken Tasaki, Arunkumar Venkatesan	Fullerene-based electrolyte for fuel cells	US6949304 B2	12-Jun-04	12-Jun-03	27-Sep-05	Granted
16	Sohrab Hossain	Carbon-carbon composite anode for secondary non-aqueous electrochemical cells	US6949314 B1	19-Aug-02	19-Aug-02	27-Sep-05	Granted
17	Raouf O. Loutfy, Alexander P. Moravsky, Timothy P. Lowe	RF plasma method for production of single walled carbon nanotubes	US7052667 B2	30-Oct-02	30-Oct-01	30-May-06	Granted
18	James C. Withers, Raouf O. Loutfy	Nano carbon materials for enhancing thermal transfer in fluids	US6695974 B2	29-Jan-02	30-Jan-01	24-Feb-04	Granted
19	Alexander P. Moravsky, Raouf O. Loutfy	Double-walled carbon nanotubes and methods for production and application	US8404209 B2	9-Jan-12	6-Oct-00	26-Mar-13	Granted
20	Alexander P. Moravsky, Raouf O. Loutfy	Double-walled carbon nanotubes and methods for production and application	CA2424969 C	30-Oct-00	6-Oct-00	27-May-08	Granted
21	Alexander P. Moravsky, Raouf O. Loutfy	Double-walled carbon nanotubes and methods for production and application	CA2622580 C	30-Oct-00	6-Oct-00	13-Mar-12	Granted
22	Alexander P. Moravsky, Raouf O. Loutfy	Double-walled carbon nanotubes and methods for production and application	EP1328472 B1	30-Oct-00	6-Oct-00	1-Sep-10	Granted
23	Raouf O. Loutfy, Vladimir I. Shapovalov	Method and apparatus for storing compressed gas	CA2421615 C	4-Sep-01	8-Sep-00	21-Jul-09	Granted
24	Vladimir I. Shapovalov, Raouf O. Loutfy	Method and apparatus for storing compressed gas	US6520219 B2	31-Aug-01	8-Sep-00	18-Feb-03	Granted
25	Raouf O. Loutfy, Mathias Hecht	Low cost molded plastic fuel cell separator plate with conductive elements	US6511766 B1	8-Jun-00	8-Jun-00	28-Jan-03	Granted
26	Sohrab Hossain	Secondary non-aqueous electrochemical cell configured to improve overcharge and overdischarge acceptance ability	US6489061 B1	24-May-00	24-May-00	3-Dec-02	Granted
27	Sohrab Hossain	Carbon-carbon composite as an anode for lithium secondary non-aqueous electrochemical cells	US6436576 B1	24-May-00	24-May-00	20-Aug-02	Granted
28	Steven Dimitrijevic, James C. Withers, Raouf O. Loutfy	Diamond/diamond-like carbon coated nanotube structures for efficient electron field emission	US6882094 B2	16-Feb-01	16-Feb-00	19-Apr-05	Granted
29	Lev J. Tuchinsky	Cellular structures and processes for making such structures	US6254998 B1	2-Feb-00	2-Feb-00	3-Jul-01	Granted
30	James C. Withers, Raouf O. Loutfy, Sion M. Pickard, Kenneth J. Newell, William B. Kelly	Golf club and other structures, and novel methods for making such structures	US6723279 B1	15-Mar-99	15-Mar-99	20-Apr-04	Granted
31	Raouf O. Loutfy, Muhammed Y. Saleh	Hydrogenated fullerenes as an additive to carbon anode for rechargeable lithium-ion batteries	US6146791 A	25-Nov-98	25-Nov-98	14-Nov-00	Granted
32	Raouf O. Loutfy, Xiao-Chun Lu, Weijiong Li, Michael G Mikhael	Gas storage using fullerene based adsorbents	US6113673 A	16-Sep-98	16-Sep-98	5-Sep-00	Granted
33	Bruce Calvin, Kowbel Withold, Loutfy Raouf, Vaidyanathan Ranji, Withers James C	Process of making carbon-carbon composites	US6051167 A	15-Jan-98	24-Jun-97	18-Apr-00	Granted
34	Robert A. Mallia, Lev J. Tuchinsky	Multi-channel structures and processes for making structures using carbon filler	US5864743 A	6-Nov-96	6-Nov-96	26-Jan-99	Granted
35	Raouf O. Loutfy, James C. Withers	Electrochemical fullerene system	US5470680 A	19-Mar-93	19-Mar-93	28-Nov-95	Granted
36	Raouf O. Loutfy, James C. Withers	Methods and apparatus for producing fullerenes	US5876684 A	14-Aug-92	14-Aug-92	2-Mar-99	Granted
37	Ley J. Tuchinsky	Multi-channel structures and processes for making such structures	US5774779 A	6-Nov-96	6-Nov-96	30-Jun-98	Granted
38	James C. Withers, Raouf O. Loutfy	Low cost processing to produce spherical titanium and titanium alloy powder	US20120272788 A1	13-Apr-12	27-Apr-11	1-Nov-12	Application
39	Charles N. Hassen	Flow-synchronous field motion refrigeration	US20120222427 A1	17-Sep-10	17-Sep-09	6-Sep-12	Application
40	Vladimir Shapovalov, Roger S. Storm, James C. Withers, Raouf Loutfy	Reusable mandrel for solid free form fabrication process	US20100018953	16-Jul-09	23-Jul-08	28-Jan-10	Application
41	Juan L. Sepulveda, Raouf O. Loutfy, Sekyung Chang, Ricardo Ramos, Sharly Ibrahim	Production of sintered three-dimensional ceramic bodies	US20130106009 A1	17-Feb-12	16-Jul-08	2-May-13	Application
42	Vladimir Shapovalov, James C. Withers	Method and apparatus for manufacturing porous articles	US20090047439 A1	12-Aug-08	16-Aug-07	19-Feb-09	Application
43	Mark D. Veksler, Raouf O. Loutfy, Eugene M. Wexler	Reduced-weight container and/or tube for compressed gases and liquids	US20080283419 A1	5-May-08	4-May-07	20-Nov-08	Application
44	James C. Withers, Roger S. Storm, Vladimir Shapovalov, Raouf Loutfy	A composite armor tile based on a continuously graded ceramic-metal composition and manufacture thereof	US20110151267 A1	28-Jun-07	30-Jun-06	23-Jun-11	Application
45	Nail Burangulov, George I. Dyachuk, Yuiya V. Kulikova, Raouf O. Loutfy, Alexander P. Moravsky	Cosmetic compositions containing fullerene clusters	US20050136079	1-Jun-04	30-May-03	5-Jan-06	Application
46	Raouf O. Loutfy, J.C.Withers, E. Dyadko	Ceramic Composites Comprising Carbon Nanotubes and Structural Ceramics for Enhanced Mechanical Behavior	617/95,456	17-Oct-13			U.S. Prov.
47	Raouf O. Loutfy, J.C.Withers, E. Dyadko	Lightweight Carbide Ceramic Materials with Improved Mechanical Properties and Process for their Manufacture	617/95,457	17-Oct-13			U.S. Prov.
48	Vladimir I. Shapovalov, Raouf O. Loutfy, J.C.Withers, Kevin Loutfy	Universal Three Stroke Engine Operation Method and Design (DRAFT)		15-Nov-13			U. S. Prov.



US010151363B2

(12) **United States Patent**
Bracamonte et al.

(10) **Patent No.:** **US 10,151,363 B2**
(45) **Date of Patent:** **Dec. 11, 2018**

(54) **SYSTEMS AND METHODS FOR FORMING A LAYER ONTO A SURFACE OF A SOLID SUBSTRATE AND PRODUCTS FORMED THEREBY**

F16D 65/125 (2013.01); *B22F 2007/045* (2013.01); *C22C 1/0416* (2013.01); *F16D 2200/003* (2013.01); *F16D 2200/0086* (2013.01)

(71) Applicant: **ATS MER, LLC**, Tucson, AZ (US)

(58) **Field of Classification Search**
CPC B23K 23/00; B22D 23/06; F16D 65/127; C22C 19/05
USPC 188/18 A
See application file for complete search history.

(72) Inventors: **Lori Bracamonte**, Tucson, AZ (US);
James Withers, Tucson, AZ (US);
Jowie Ahcede, Tucson, AZ (US)

(73) Assignee: **ATS MER, LLC**, Tucson, AZ (US)

(56) **References Cited**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

U.S. PATENT DOCUMENTS

(21) Appl. No.: **15/822,026**

6,316,125 B1 * 11/2001 Gaman B23K 35/286
148/23
8,203,095 B2 6/2012 Storm et al. 219/121.47
(Continued)

(22) Filed: **Nov. 24, 2017**

FOREIGN PATENT DOCUMENTS

(65) **Prior Publication Data**

WO WO2007033378 3/2007 B23B 15/00

US 2018/0073581 A1 Mar. 15, 2018

OTHER PUBLICATIONS

Related U.S. Application Data

Office Action issued in U.S. Appl. No. 15/822,023, dated May 10, 2018 (14 pgs).

(62) Division of application No. 15/357,730, filed on Nov. 21, 2016.

(Continued)

(Continued)

Primary Examiner — Weiping Zhu

(51) **Int. Cl.**

(74) *Attorney, Agent, or Firm* — Hayes Soloway P.C.

F16D 65/12 (2006.01)
B32B 15/01 (2006.01)
C22C 19/05 (2006.01)
B22D 19/08 (2006.01)
B22D 23/06 (2006.01)
B22D 27/15 (2006.01)

(Continued)

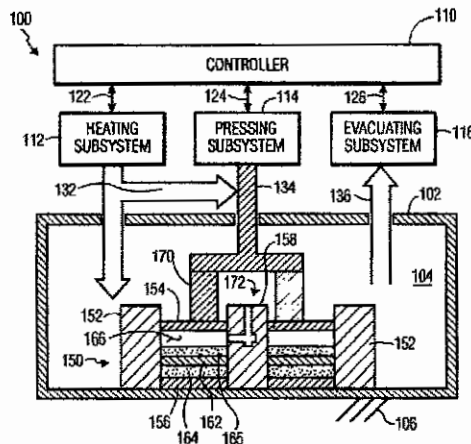
(57) **ABSTRACT**

(52) **U.S. CL**

CPC *F16D 65/127* (2013.01); *B22D 19/08* (2013.01); *B22D 23/06* (2013.01); *B22D 27/15* (2013.01); *B22F 7/04* (2013.01); *B32B 15/01* (2013.01); *C22C 19/05* (2013.01); *C22C 32/0063* (2013.01); *C23C 24/103* (2013.01);

A method for forming a vehicular brake rotor involving loading a shaped metal substrate with a mixture of metal alloying components and ceramic particles in a die heating the contents of the die while applying pressure to melt at least one of the metal components of the alloying mixture whereby to densify the contents of the die and form a ceramic particle-containing metal matrix composite coating on the metallic substrate; and cooling the resulting coated product.

17 Claims, 5 Drawing Sheets





(12) **United States Patent**
Bracamonte et al.

(10) **Patent No.:** **US 10,107,344 B2**
(45) **Date of Patent:** ***Oct. 23, 2018**

(54) **SYSTEMS AND METHODS FOR FORMING A LAYER ONTO A SURFACE OF A SOLID SUBSTRATE AND PRODUCTS FORMED THEREBY**

F16D 65/125 (2013.01); *B22F 2007/045* (2013.01); *C22C 1/0416* (2013.01); *F16D 2200/003* (2013.01); *F16D 2200/0086* (2013.01)

(71) Applicant: **ATS MER, LLC**, Tucson, AZ (US)

(58) **Field of Classification Search**

CPC *B22F 2998/00*; *C23C 24/06*; *F16D 65/127*; *C22C 19/05*
USPC 188/18 A
See application file for complete search history.

(72) Inventors: **Lori Bracamonte**, Tucson, AZ (US);
James Withers, Tucson, AZ (US);
Jowie Abcede, Tucson, AZ (US)

(73) Assignee: **ATS MER, LLC**, Tucson, AZ (US)

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,316,125 B1 11/2001 Gaman et al. 428/654
8,203,095 B2 6/2012 Storm et al. 219/121.47
(Continued)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

FOREIGN PATENT DOCUMENTS

WO WO2007033378 3/2007 B23B 15/00

(21) Appl. No.: **15/822,023**

(22) Filed: **Nov. 24, 2017**

OTHER PUBLICATIONS

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Primary Examiner — Weiping Zhu

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(51) **Int. Cl.**
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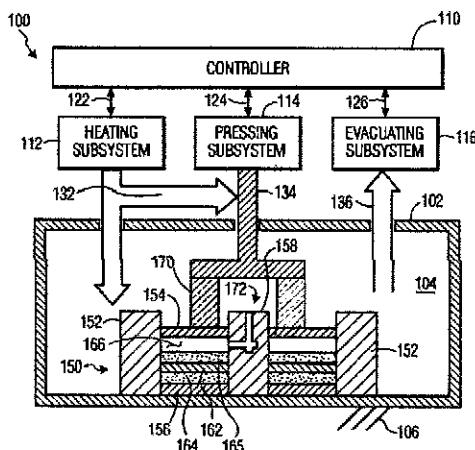
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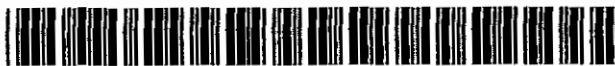
(57) **ABSTRACT**

A method for forming a vehicular brake rotor involving loading a shaped metal substrate with a mixture of metal alloying components and ceramic particles in a die heating the contents of the die while applying pressure to melt at least one of the metal components of the alloying mixture whereby to densify the contents of the die and form a ceramic particle-containing metal matrix composite coating on the metallic substrate; and cooling the resulting coated product.

(52) **U.S. Cl.**
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24 Claims, 5 Drawing Sheets





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(54) **SYSTEMS AND METHODS FOR FORMING A LAYER ONTO A SURFACE OF A SOLID SUBSTRATE AND PRODUCTS FORMED THEREBY**

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F16D 65/125 (2013.01); B22F 2007/045
(2013.01); C22C 1/0416 (2013.01); F16D
2200/003 (2013.01); F16D 2200/0086
(2013.01)

(71) Applicant: **ATS MER, LLC**, Tucson, AZ (US)

(58) **Field of Classification Search**

(72) Inventors: **Lori Bracamonte**, Tucson, AZ (US);
James Withers, Tucson, AZ (US);
Jowie Abcede, Tucson, AZ (US)

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B22F 7/04

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(73) Assignee: **ATS MER, LLC**, Tucson, AZ (US)

(56) **References Cited**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(62) Division of application No. 15/357,730, filed on Nov. 21, 2016.

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(74) Attorney, Agent, or Firm — Hayes Soloway P.C.

(51) **Int. Cl.**
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C22C 19/05 (2006.01)
B22D 19/08 (2006.01)
B22D 23/06 (2006.01)
B22D 27/15 (2006.01)
B22F 7/04 (2006.01)

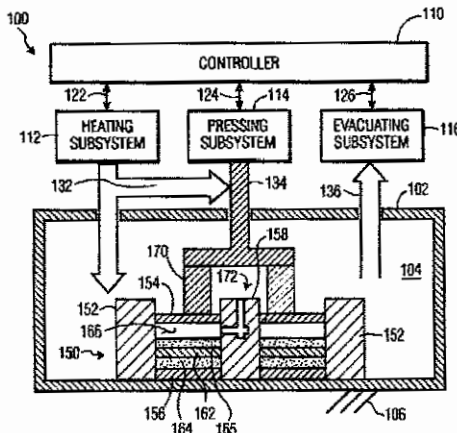
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(52) **U.S. Cl.**
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(54) **SYSTEMS AND METHODS FOR FORMING A LAYER ONTO A SURFACE OF A SOLID SUBSTRATE AND PRODUCTS FORMED THEREBY**

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(71) Applicant: **ATS MER, LLC**, Tucson, AZ (US)

(56) **References Cited**

(72) Inventors: **Lori Bracamonte**, Tucson, AZ (US);
James Withers, Tucson, AZ (US);
Jowie Abcede, Tucson, AZ (US)

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(73) Assignee: **ATS MER, LLC**, Tucson, AZ (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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Primary Examiner — Weiping Zhu

(74) *Attorney, Agent, or Firm* — Hayes Soloway PC

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B22D 23/06 (2006.01)
B22D 27/15 (2006.01)

(57) **ABSTRACT**

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(52) **U.S. Cl.**

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(58) **Field of Classification Search**

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