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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/574,237	12/17/2014	Riley Reese	S697.0551US1

CONFIRMATION NO. 3704

27367

WESTMAN CHAMPLIN & KOEHLER, P.A.

121 South Eighth Street

Suite 1100

Minneapolis, MN 55402

POA ACCEPTANCE LETTER



OC000000065358633

Date Mailed: 12/05/2023

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 11/27/2023.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/sstephanos/



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/574,237	12/17/2014	Riley Reese	3019-023us1

CONFIRMATION NO. 3704

POWER OF ATTORNEY NOTICE



OC000000065358537

148464
Arevo
c/o McGeary Cukor LLC
150 Morristown Rd
Ste. 205
Bernardsville, NJ 07924-2626

Date Mailed: 12/05/2023

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 11/27/2023.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/sstephanos/



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PATENT AND TRADEMARK OFFICE

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
14/574,237

RECEIPT DATE / TIME
11/27/2023 04:48:51 PM Z ET

ATTORNEY DOCKET #
3019-023us1

Title of Invention

HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # 9592660

CONFIRMATION # 3704

FILED BY Elizabeth Peters

PATENT CENTER # 63381292

FILING DATE 12/17/2014

CUSTOMER # 148464

FIRST NAMED
INVENTOR Riley Reese

CORRESPONDENCE
ADDRESS -

AUTHORIZED BY Peter Ims

Documents

TOTAL DOCUMENTS: 5

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2023-11-27 Change of Address Form Issued Patent - Maintenance Fee S697.0551US1.pdf	1	Maintenance Fee Address Change	26 KB
2023-11-27 Change of Address Form Issued Patent- Correspondence S697.0551US1.pdf	1	Change of Address	25 KB
2023-11-27 Request S697.0551US1.pdf	2	Request under 37CFR 1.46(c) to correct, update, change applicant	190 KB
2023-11-27 Statement	3	Assignee showing of ownership	119 KB

S697.0551US1.pdf

per 37 CFR 3.73

2023-11-27 POA
S697.0551US1.pdf

2

Power of Attorney

76 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2023-11-27 Change of Address Form Issued Patent - Maintenance Fee S697.0551US1.pdf	91E5C06D2C21FAA1763297DE839E525823AA06ECED90CEE15 4B52205144ED487D9BF219FEF96633C98C4C6F9B53261D01F0 2F4C86E02CCDA1A8551C410AB11D7
2023-11-27 Change of Address Form Issued Patent- Correspondence S697.0551US1.pdf	0CC34179460D78E23FD6E08C125C52D6B9A34D0AF15DAD2D 7278D5420570BA14DEF309B3E49A9F7394EB8173E03C57CB6 FE3E0908052CC0A97C265F7FF20894B
2023-11-27 Request S697.0551US1.pdf	AE57C82E00634B389F67CBF01C76F2B2E603F33718885DEE86 DD9B771D0C8B6FD24B5928E6136C99A7004FC4AB7EE866B4 EFA91C500A5DABDAFE3512D905DDE8
2023-11-27 Statement S697.0551US1.pdf	8005FAAC8944C291222E4DCAF269564D11AAAEED1E699960D 0BA208F306AAC6B16D388496FB7FE5732A9EF57447559EA422 875BEB4E01E26EDD395F417A827AB
2023-11-27 POA S697.0551US1.pdf	FAC80ECF81F9003504A4439145506B8BFF833F7D69439576E8 D37DCEDF5736EA9CD8255B333AFF2BBFD9C40A4F30A7837 DC30A67DF8AF9E4B6EAF15FB06FC06

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc Code: R46C.REQ

Document Description: Request under 37 CFR 1.46(c) to correct, update or change the applicant.

PTO/AIA/41 (04-15)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**REQUEST TO CORRECT OR UPDATE
THE NAME OF THE APPLICANT UNDER
37 CFR 1.46(c)(1), OR CHANGE THE
APPLICANT UNDER 37 CFR 1.46(c)(2)
(FOR USE ONLY IN APPLICATIONS FILED ON OR AFTER
SEPTEMBER 16, 2012)**

Application Number	14/574,237
Filing Date	12/17/2014
First Named Inventor	Riley Reese
Art Unit	1744
Examiner Name	JERZI H MORENO HERNANDEZ
Practitioner Docket Number	S697.0551US1

**To: Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**

Applicant hereby **requests that the name of the applicant be corrected or updated under 37 CFR 1.46(c)(1), or that the applicant be changed under 37 CFR 1.46(c)(2),** in the above-identified application. **Requests under 37 CFR 1.46(c)(1) or (c)(2) cannot be submitted after payment of the issue fee or if the application has been patented.**

Please check the applicable box(es) below.

☐ 1. This request is to **correct or update the name of the applicant (under 37 CFR 1.46(c)(1))** and includes:

☐ An application data sheet (ADS) in accordance with 37 CFR 1.76(c) with the corrected or updated information shown with markings (e.g., underlining for insertions, strikethrough for deletions). A Corrected Web-based ADS may be used.

Note: Requests under 37 CFR 1.46(c)(1) may be filed to correct typographical errors in the name of the § 1.46 applicant, or for updating the name of the § 1.46 applicant (i.e., where there is no change in the applicant itself but just in the applicant's name). See the Manual of Patent Examining Procedure (MPEP) section 605.01.

☒ 2. This request is to **change the applicant (under 37 CFR 1.46(c)(2))** and includes:

☐ An application data sheet (ADS) in accordance with 37 CFR 1.76(c) that identifies the changes with proper markings (underlining for insertions and strikethrough for deletions). A Corrected Web-based ADS may be used.

☒ A Statement Under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent). See MPEP 325.

I am the

☐ applicant*

☒ attorney or agent of record
Registration number 48774

☐ attorney or agent acting under 37 CFR 1.34
Registration number _____

Signature /Peter J. Ims/

Typed or printed name Peter J. Ims

Date November 27, 2023

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. *Juristic entities must be represented by a patent practitioner (See 37 CFR 1.31, applicable to any paper filed on or after September 16, 2012 that is presented on behalf of a juristic entity, regardless of application filing date). Submit multiple forms if more than one signature is required, see below**.

☒ ** Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.36. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND**

TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: STRATASYS, INC.

Application No./Patent No.: 9,592,660 Filed/Issue Date: 03/14/2017

Titled: HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS

Stratasys, Inc., a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is ____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.
- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Riley Reese, Hemant Bedha To: AREVO INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 035923, Frame 0099, or for which a copy thereof is attached.

2. From: Riley Reese, Hemant Bheda To: AREVO, INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 046024, Frame 0372, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: AREVO, INC. To: STRATASYS, INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 064942, Frame 0384, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Peter J. Ims/

Signature

Peter J. Ims

Printed or Typed Name

2023-11-27

Date

48774

Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

Note: This form is to be submitted with a Power of Attorney to identify the application to which the Power of Attorney is directed.

Patent Number	9,592,660
Date of Patent	03/14/2017
Application Number	14/574,237
Filing Date	12/17/2014
First Named Inventor	Riley Reese
Title	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS
Art Unit	1744
Examiner Name	JERZI H MORENO HERNANDEZ
Attorney Docket Number	S697.0551US1

SIGNATURE of Patent Practitioner

Signature	/Peter J. Ims/	Date	2023-11-27
Name	<u>PETER J. IMS</u>	Telephone	<u>612-334-3222</u>
Registration Number	<u>48,774</u>		

POWER OF ATTORNEY

Principal's Name: Stratasys, Inc.

Principal's Address: 7665 Commerce Way, Eden Prairie, MN 55344

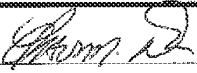
Principal hereby revokes all previous powers of attorney given in the application identified in the attached transmittal letter (the APPLICATION).

Principal hereby appoints Practitioner(s) associated with the following Customer Number as its attorney(s) or agent(s) to prosecute the APPLICATION and to transact all business in the United States Patent and Trademark Office connected therewith. Principal hereby ratifies all previous actions taken by the Practitioner(s) in connection with the APPLICATION:

27,367

Principal is empowered to act in the APPLICATION because Principal is the sole owner of the entire right, title and interest of the APPLICATION, one owner of a collection of owners of the entire right, title and interest of the APPLICATION, a person to whom at least one inventor is under an obligation to assign the APPLICATION, and/or a person who otherwise has sufficient proprietary interest to act as Applicant for the APPLICATION.

SIGNATURE of Principal

Signature		Date	April 2, 2013
Name	Larry Doerr		
Title	Executive Vice President		

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	: Riley Reese	Group Art Unit: 1744
Appln. No.	: 14/574,237	Examiner: JERZI H MORENO HERNANDEZ
Filed	: 12/17/2014	Confirmation No: 3704
For	: HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS	
Patent No.	: 9,592,660	
Issued	: 03/14/2017	
Docket No.	: S697.0551US1	

NOTICE OF CHANGE OF MAINTENANCE FEE ADDRESS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

I hereby certify that this correspondence is being facsimile transmitted to the USPTO, EFS-Web transmitted to the USPTO, or deposited with the United States Postal Service with sufficient postage in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on November 27, 2023.

Signature: /Peter J. Ims/

Printed Name: Peter J. Ims

Sir/Madam:

Please change the **Maintenance Fee Address** to the correspondence address associated with customer number

27367

which is the customer number for WESTMAN CHAMPLIN & KOEHLER.

Respectfully submitted,

WESTMAN, CHAMPLIN & KOEHLER, P.A.

By: /Peter J. Ims/

Peter J. Ims, Reg. No. 48,774

121 South Eighth Street, Suite 1100

Minneapolis, Minnesota 55402-2328

Phone: (612) 334-3222 Fax: (612) 334-3312

PJI/eap

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	: Riley Reese	Group Art Unit: 1744
Appln. No.	: 14/574,237	Examiner: JERZI H MORENO HERNANDEZ
Filed	: 12/17/2014	Confirmation No: 3704
For	: HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS	
Patent No.	: 9,592,660	
Issued	: 03/14/2017	
Docket No.	: S697.0551US1	

NOTICE OF CHANGE OF CORRESPONDENCE ADDRESS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

I hereby certify that this correspondence is being facsimile transmitted to the USPTO, EFS-Web transmitted to the USPTO, or deposited with the United States Postal Service with sufficient postage in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on November 27, 2023.

Signature: /Peter J. Ims/

Printed Name: Peter J. Ims

Sir:

Please change the correspondence address of record to the correspondence address associated with customer number

27367

which is the customer number for WESTMAN CHAMPLIN & KOEHLER.

Respectfully submitted,

WESTMAN, CHAMPLIN & KOEHLER, P.A.

By: /Peter J. Ims/

Peter J. Ims, Reg. No. 48,774
121 South Eighth Street, Suite 1100
Minneapolis, Minnesota 55402-2328
Phone: (612) 334-3222 Fax: (612) 334-3312

PJI/eap



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/574,237	12/17/2014	Riley Reese	3019-023us1

CONFIRMATION NO. 3704

POA ACCEPTANCE LETTER

148464
Arevo
c/o McGeary Cukor LLC
7 Dumont Place
Morristown, NJ 07960-4125



Date Mailed: 04/09/2020

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/27/2020.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/ngfissha/



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/574,237	12/17/2014	Riley Reese	50823-712.201

153281

Arevo / WILSON, SONSINI, GOODRICH & ROSATI
650 PAGE MILL ROAD
PALO ALTO, CA 94304-1050

CONFIRMATION NO. 3704
POWER OF ATTORNEY NOTICE



OC000000116061103

Date Mailed: 04/09/2020

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/27/2020.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/ngfissha/

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	14/574,237
Filing Date	12-17-2014
First Named Inventor	Riley Reese
Title	Heated Build Platform and System for Three Dimension Printing Methods
Art Unit	1744
Examiner Name	Moreno Hernandez, Jerzi H
Attorney Docket Number	3019-023us1

SIGNATURE of Applicant or Patent Practitioner

Signature	/Jason Paul DeMont/	Date (Optional)	
Name	Jason Paul DeMont	Registration Number	35,793
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)	Arevo, Inc.		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☐

*Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number

Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)



I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

148464

OR



I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:



The address associated with the above-mentioned Customer Number

OR



The address associated with Customer Number:

OR



Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Arevo, Inc.



Inventor or Joint Inventor (title not required below)



Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)



Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)



Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature

Date (Optional)

March 26, 2020

Name

Sonny Vu

Title

Chief Executive Officer

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.



Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Arevo, Inc.

Application No./Patent No.: 14/574,237 Filed/Issue Date: 12-17-2014

Titled: HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL
Arevo, Inc., a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is ____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 046024, Frame 0372, or for which a copy thereof is attached.
- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Jason Paul DeMont/

March 26, 2020

Signature

Date

Jason Paul DeMont

35,793

Printed or Typed Name

Title or Registration Number

Electronic Acknowledgement Receipt	
EFS ID:	38984798
Application Number:	14574237
International Application Number:	
Confirmation Number:	3704
Title of Invention:	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS
First Named Inventor/Applicant Name:	Riley Reese
Customer Number:	153281
Filer:	Jason P. DeMont
Filer Authorized By:	
Attorney Docket Number:	50823-712.201
Receipt Date:	27-MAR-2020
Filing Date:	17-DEC-2014
Time Stamp:	03:17:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	aia0082a_3019-023us1.pdf	174915	no	1
			8c6e315cb7ce2f2c2e7429015130405513417ee0		

Warnings:

Information:					
2	Power of Attorney	aia0082b_3019-023us1.pdf	647773	no	1
			8caef6abee9c13094b006ddf45253e273a667d97		
Warnings:					
Information:					
3	Assignee showing of ownership per 37 CFR 3.73	aia0096_3019-023us.pdf	209699	no	2
			417fac95ac68b5e32b0f905429d60a07d44f9c7		
Warnings:					
Information:					
Total Files Size (in bytes):			1032387		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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153281 e 2018-04-16

Arevo / WILSON, SONSINI, GOODRICH & ROSATI
650 PAGE MILL ROAD
PALO ALTO, CA 94304-1050

Paper No.

Application No.:	14/574,237	Date Mailed:	2018-04-16
			ELECTRONIC
First Named Inventor:	Riley Reese	Examiner:	MORENO HERNANDEZ, JERZI H
Attorney Docket No.:	50823-712.201	Art Unit:	1744
Confirmation No.:	3704	Filing Date:	12/17/2014

Please find attached an Office communication concerning this application or proceeding.

Commissioner for Patents

Response to the Request for Certificate of Correction	Patent No. 9592660	Applicant(s) REESE ET AL.
	Issue Date 14 March, 2017	Docket No. 50823-712.201

This is in response to the request for a Certificate of Correction filed 12 January, 2018

☒ **Request Denied** – Consideration has been given to your request for the issuance of a Certificate of Correction under the provisions of 37 CFR 1.322 and/or 37 CFR 1.323. The Request is improper and denied for the reason(s) below:

1. ☐ Assignees' names and addresses (assignment data) printed in a patent, are based solely on information supplied in the appropriate space for identifying the assignment data on the Issue Fee Transmittal Form (PTOL-85b). Any request for a patent to be corrected to state the name of the assignee, must state that the assignment was submitted for recordation as set forth in 37 CFR 3.11 before issuance of the patent. Petition under 3.81 is to be filed for consideration of correction to assignee. The petition fee set forth in 37 CFR 1.17(i)(1) (currently \$140, \$70, \$35 for large, small and micro entities, respectively).
2. ☐ The alleged error in _____, is in fact an Amendment and/or Change made by the examiner and considered to be in accordance with the permissible amendments enumerated in the Manual of Patent Examining Procedure (MPEP) Section 1302.04. Applicant did not file objection or amendment under 37 CFR 1.312 prior to payment of the issue fee.
3. ☐ A petition under CFR 1.182 is required to correct the alleged errors in spelling or order of inventor's names, since inventor's names are printed solely in accordance with the type-written names, and in the order of the type-written names on the Application Data Sheet (ADS). The required fee currently under rule 1.17(f) (small entity \$200, large entity \$400, micro entity fee \$100).
4. ☐ With respect to the alleged error in changing the inventor name on the patent due to clerical error in ADS/OATH of related patents. The inventor's name is printed in accordance with the OATH/ADS submitted at the time of filing the application. However, your attention is directed to C.F.R. 1.324, wherein a request is being made to change, add or delete inventor(s), after issuance of the patent.
5. ☐ With respect to the alleged error in _____, comparison of the printed patent with the corresponding location in the application file reveals that there is no discrepancy.
6. ☐ With respect to 37 CFR 1.72, the title should be brief but technically accurate and descriptive and should contain fewer than 500 characters. Inasmuch as the words "new," "improved," "improvement of," and "improvement in" are not considered as part of the title of an invention, these words should not be included at the beginning of the title of the invention and will be deleted when the Office enters the title into the Office's computer records, and when any patent issues.
7. ☐ The fee for correction under 37 CFR 1.323 is set forth in 37 CFR 1.20(a). ☐ Partial fee ☐ No fee was received with your request. Full fee payment is required before further action is taken on this request.
8. ☐ With respect to the request for corrected Letters Patent (Grant), corrections to the original Letters Patent are made under the provisions of Rule 1.322(b), not Rule 1.323, unless a petition is granted.
9. ☒ Other Comments: The Applicant name on front page of patent was taken from the Applicant section of the Application Data Sheet (ADS), or the applicant was the inventor(s) if no applicant was specified in the ADS. No request to change the applicant in compliance with 37 CFR 1.46(c) was filed during pendency of the application. Since what is listed on the patent is correct relative to the patent application file record from which the patent issued, no correction is in order under 37 CFR 1.322 or 1.323.

Further correspondence concerning this matter should be filed and directed to the Certificates of Correction Branch.

Legal Instrument Examiner: **/DEBORAH POLLARD/**

Phone: (703)756-1955

Certificates of Correction Branch email: CustomerServiceCoC@uspto.gov

CoC Central Phone Number: (703) 756-1814

If applicable, information regarding a petition under 37 CFR 1.183 should be directed to the attention of the Commissioner for Patents using the FAX number (571) 273-8300



UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
14/574,237	9592660	1744	9200



Correspondence Address/Fee Address Change

The following fields have been set to Customer Number 153281 on 01/29/2018

- Correspondence Address
- Maintenance Fee Address

The address of record for Customer Number 153281 is:

153281

Arevo / WILSON, SONSINI, GOODRICH & ROSATI
650 PAGE MILL ROAD
PALO ALTO, CA 94304-1050

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors: Reiley Reese and Hemant Bheda

CONFIRMATION NO: 3704

Serial Number: 14/574,237

Filing Date: 12/17/2017

Issued Patent No.: 9,592,660

Issued: 03/14/2017

Title: HEATED BUILD PLATFORM
AND SYSTEM FOR THREE
DIMENSIONAL PRINTING
METHODS

FILED ELECTRONICALLY January 12, 2018

**REQUEST FOR CERTIFICATE OF CORRECTION OF THE ISSUED PATENT
FOR
APPLICANT MISTAKE (37 C.F.R. §1.323)**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
ATTN: Certificate of Correction Branch

Sir:

It is noted that errors of a minor nature or character appears in this patent due to mistakes on the part of the Office and/or on the part of the Applicant, as more fully described below. The Patentee believes that correction thereof does not involve such changes in the patent as would constitute new matter or would require re-examination of the patent. A certificate of correction is therefore requested.

Attached hereto is Form PTO/SB/44 which is suitable for printing.

MISTAKES ON THE PART OF APPLICANT:

Applicant respectfully requests correction to the language in the issued Patent in order to correct an error in antecedent basis. The change requested is: Remove Saratoga as Applicant City and replace with Santa Clara.

U.S. Patent No. 9,592,660
Request for Certificate of
Correction of Patent
Dated January 10, 2018

FEE AUTHORIZATION

Please charge the processing fee under 37 CFR 1.20(a) to Deposit Account No. **23-2415** (Docket No. 50823-712.201).

The Commissioner is authorized to charge any additional fees which may be required, including petition fees, or credit any overpayment to Deposit Account No. 23-2415 (Docket No. 50823-712.201).

Respectfully submitted,

Dated: January 11, 2018

By: /Jing Wang/
Jing Wang
Registration No. 76486

WILSON SONSINI GOODRICH & ROSATI
650 Page Mill Road
Palo Alto, California 94304
Direct Dial: (212) 497-7740
Customer No. 21971

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

PATENT NO. : 9,592,660

Page 1 of 1

APPLICATION NO. : 14/574,237

ISSUE DATE : 03/14/17

INVENTOR(S) : Riley Reese and Hemant Bheda

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below.

On the Front Page:

(71) Applicant: remove "Saratoga" and insert -- Santa Clara --

MAILING ADDRESS OF SENDER: (Please do not use customer number below)

Wilson Sonsini Goodrich & Rosati
650 Page Mill Road
Palo Alto, California 94304

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Patent Application Fee Transmittal				
Application Number:		14574237		
Filing Date:		17-Dec-2014		
Title of Invention:		HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS		
First Named Inventor/Applicant Name:		Riley Reese		
Filer:		Jing NM Wang/Joanna Laney		
Attorney Docket Number:		50823-712.201		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Certificate of correction	1811	1	100	100

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				100

Electronic Acknowledgement Receipt	
EFS ID:	31488144
Application Number:	14574237
International Application Number:	
Confirmation Number:	3704
Title of Invention:	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS
First Named Inventor/Applicant Name:	Riley Reese
Customer Number:	21971
Filer:	Jing NM Wang/Joanna Laney
Filer Authorized By:	Jing NM Wang
Attorney Docket Number:	50823-712.201
Receipt Date:	12-JAN-2018
Filing Date:	17-DEC-2014
Time Stamp:	14:17:06
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$100
RAM confirmation Number	011618INTEFSW00000735232415
Deposit Account	232415
Authorized User	Ali Alemozafar
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.20 (Post Issuance fees)	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Certificate of Correction	50823_712_201_Request_for_CoC.pdf	216919	no	3
			3b0fc7c0ef2b3ea864484381a3e0085955d7ecea		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30163	no	2
			b64427c4ecb2b1c08f78bd567e738f3d2980876a		
Warnings:					
Information:					
Total Files Size (in bytes):			247082		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/574,237	03/14/2017	9592660	50823-712.201	3704

21971 7590 02/22/2017
WILSON, SONSINI, GOODRICH & ROSATI
650 PAGE MILL ROAD
PALO ALTO, CA 94304-1050

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 22 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Riley Reese, Carpinteria, CA;
Arevo Inc., Saratoga, CA;
Hemant Bheda, Saratoga, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

Receipt date: 12/17/2014

14574237 - GAU: 1744

Doc code: IDS

PTO/SB/08a (01-10)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		14574237	
	Filing Date		2014-12-17	
	First Named Inventor	Riley Reese		
	Art Unit	TBA		
	Examiner Name	TBA		
	Attorney Docket Number	00285/00630		

U.S. PATENTS

Remove

Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
Change(s) applied to document, H.J.L./ 11/14/2016	1	7127309	B2	2006-10-24	Dunn et al. ~~Stratasy, Inc.~~	Claim 1, abstract, Fig. 1 with explanation
	2	8282380	B2	2012-10-09	Pax et al. ~~Makerbot Industries~~	Abstract, Fig. 1 with explanation
	3	6722872	B1	2004-04-20	Swanson et al. ~~Stratasy, Inc.~~	Abstract, Fig. 9 with explanation
	4	8827684	B1	2014-09-09	Schumacher et al. ~~Radiant Fabrication~~	Claim 1, Claim 4, Abstract
	5	7261542	B2	2007-08-28	Hickerson et al. ~~Desktop Factory, Inc.~~	Fig 8D, Summary

If you wish to add additional U.S. Patent citation information please click the Add button.

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Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20010038168	A1	2001-11-08	Popa et al. ~~Stratasy, Inc.~~	Description

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PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

21971 7590 11/03/2016
WILSON, SONSINI, GOODRICH & ROSATI
650 PAGE MILL ROAD
PALO ALTO, CA 94304-1050

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/574,237	12/17/2014	Riley Reese	50823-712.201	3704

TITLE OF INVENTION: HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	~~SMALL~~ LARGE	~~\$480~~ \$960	\$0	\$0	\$480	02/03/2017

EXAMINER	ART UNIT	CLASS-SUBCLASS
MORENO HERNANDEZ, JERZI H	1744	425-089000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

WILSON SONSINI GOODRICH & ROSATI

- 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

AREVO INC.

SANTA CLARA, CA

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number 23-2415 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Ali Alemozafar/

Date February 1, 2017

Typed or printed name Ali R. Alemozafar

Registration No. 68180

Electronic Patent Application Fee Transmittal				
Application Number:		14574237		
Filing Date:		17-Dec-2014		
Title of Invention:		HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS		
First Named Inventor/Applicant Name:		Riley Reese		
Filer:		Ali Reza Alemozafar/Sherry Castro		
Attorney Docket Number:		50823-712.201		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	1501	1	960	960

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				960

Electronic Acknowledgement Receipt	
EFS ID:	28237483
Application Number:	14574237
International Application Number:	
Confirmation Number:	3704
Title of Invention:	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS
First Named Inventor/Applicant Name:	Riley Reese
Customer Number:	21971
Filer:	Ali Reza Alemozafar/Sherry Castro
Filer Authorized By:	Ali Reza Alemozafar
Attorney Docket Number:	50823-712.201
Receipt Date:	01-FEB-2017
Filing Date:	17-DEC-2014
Time Stamp:	18:50:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$960
RAM confirmation Number	020217INTEFSW00004983232415
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	50823712201_Issue_Fee_Transmittal.pdf	993690	no	1
			57e4b62b69d85a4257b8867af45bd0c79b040743		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30699	no	2
			36eea50d9dccc6ab6a8beb4ed2d6706da9164bd1a		
Warnings:					
Information:					
Total Files Size (in bytes):			1024389		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

21971 7590 11/03/2016
WILSON, SONSINI, GOODRICH & ROSATI
650 PAGE MILL ROAD
PALO ALTO, CA 94304-1050

EXAMINER

MORENO HERNANDEZ, JERZI H

ART UNIT PAPER NUMBER

1744

DATE MAILED: 11/03/2016

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/574,237	12/17/2014	Riley Reese	50823-712.201	3704

TITLE OF INVENTION: HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	02/03/2017

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
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CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

21971 7590 11/03/2016
WILSON, SONSINI, GOODRICH & ROSATI
650 PAGE MILL ROAD
PALO ALTO, CA 94304-1050

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/574,237	12/17/2014	Riley Reese	50823-712.201	3704

TITLE OF INVENTION: HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	02/03/2017

EXAMINER	ART UNIT	CLASS-SUBCLASS
MORENO HERNANDEZ, JERZI H	1744	425-089000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

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- ☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/574,237	12/17/2014	Riley Reese	50823-712.201	3704
21971 7590 11/03/2016 WILSON, SONSINI, GOODRICH & ROSATI 650 PAGE MILL ROAD PALO ALTO, CA 94304-1050				
EXAMINER MORENO HERNANDEZ, JERZI H				
ART UNIT		PAPER NUMBER		
1744				

DATE MAILED: 11/03/2016

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 14/574,237	Applicant(s) REESE ET AL.	
	Examiner JERZI H. MORENO HERNANDEZ	Art Unit 1744	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE filed on 10/07/2016.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1, 3, 5-11, 15, 17-20, and 22. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some *c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. ☒ Notice of References Cited (PTO-892) | 5. ☒ Examiner's Amendment/Comment |
| 2. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 6. ☒ Examiner's Statement of Reasons for Allowance |
| 3. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 7. ☐ Other _____. |
| 4. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____. | |

/ALISON L HINDENLANG/
Primary Examiner, Art Unit 1744

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in an interview with Ali Alemozafar on 10/27/2016.

The application has been amended as follows:

AMENDMENT TO THE CLAIMS:

1. (Currently amended) A build apparatus for printing a 3D object of thermoplastics employing additive manufacturing methods, the apparatus comprising:

a build platform with a temperature control unit ~~for regulating a temperature~~ configured to control heating of the build platform;

a thermally conductive plate disposed adjacent to the build platform; and

a polymer coating ~~adjacent~~ attached to a surface of the thermally conductive plate ~~for maintaining adhesion between the 3D object and the build surface throughout the printing, which polymer coating has a surface that~~ which is capable of (i) ~~facilitates~~ facilitating adhesion to the 3D object during printing and (ii) ~~permits~~ permitting removal of the 3D object once the 3D object has been formed and cooled ~~by the temperature control unit~~ without chemically or mechanically removing the polymer coating from 3D object and without damaging the polymer coating, the thermally conductive plate, or the 3D object, wherein the polymer coating is not a polymer tape;

~~wherein the temperature control unit cools the 3D object subsequent to formation, to permit removal of the 3D object from the thermally conductive plate without removal of the thermally conductive plate from the build platform.~~

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2. (Canceled)
3. (Previously presented) The build apparatus of claim 1, wherein the polymer coating is a polyimide.
4. (Canceled)
5. (Currently amended) The build apparatus of claim 1, wherein the temperature control ~~means to heat the build platform~~ unit comprises heater cartridges that are spaced along a surface of the build platform.
6. (Previously presented) The build apparatus of claim 1, wherein the build platform comprises thermocouples situated at one or several locations to provide feedback to a controller for maintaining temperature set points.
7. (Previously presented) The build apparatus of claim 1, further comprising a ceramic or high temperature dielectric that insulates the build platform.
8. (Currently amended) The build apparatus of claim 1, wherein the build platform, the thermally conductive ~~removable~~ plate, and the polymer coating are able to withstand high temperature ranging between 150 degree Celsius and 300 degree Celsius.
9. (Currently amended) The build apparatus of claim 1, wherein the material for the thermally conductive ~~removable~~ plate comprises one or more of aluminum, steel, brass, ceramic, glass, or alloys ~~similar~~ with a low coefficient of thermal expansion (CTE).
10. (Previously presented) The build apparatus of claim 1, wherein the material for the build platform comprises one or more of aluminum, steel, brass, ceramic, glass, or alloys with a low coefficient of thermal expansion (CTE).
11. (Currently amended) The build apparatus of claim 1, wherein the thermally conductive ~~removable~~ plate thickness ranges from 0.025-0.5" and wherein the thickness is selected depending on the flexural character of the material.
12. (Canceled)
13. (Canceled)
14. (Canceled)

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15. (Previously presented) The build apparatus of claim 1, wherein the thickness of the polymer coating ranges from 0.001" to 0.1".

16. (Canceled)

17. (Currently amended) The build apparatus of claim 1, wherein ~~the polymer~~ a surface of the polymer coating includes nano-, micro-, or milli-meter scale features that increase adhesion to the 3D object.

18. (Currently amended) The build apparatus of claim 1, wherein the thermally conductive ~~removable~~ plate is flexible in nature, ~~where the flexibility allows so as to allow~~ for easier dissociation between the 3D object and the thermally conductive ~~removable~~ plate upon cooling and ~~reduces the possibility of~~ reduce damage to the polymer coating or the 3D object during ~~object~~ removal of the 3D object.

19. (Previously presented) The build apparatus of claim 1, wherein the temperature control unit is a heater cartridge.

20. (Previously presented) The build apparatus of claim 1, wherein the build platform has a first coefficient of thermal expansion (CTE) and the thermally conductive plate has a second CTE, wherein the first CTE is greater than the second CTE.

21. (Canceled)

22. (Previously presented) The build apparatus of claim 1, wherein the thermally conductive plate is non-magnetically secured to and removable from the build platform.

23. (Canceled)

24. (Canceled)

Allowable Subject Matter

Claims 1, 3, 5-11, 15, 17-20, and 22 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claim 1, a primary reason why the invention is deemed novel and non-obvious over the prior art of record to a build apparatus as instantly claimed is that Comb (US 2015/0145174 – of record), Farnworth (US 2005/0058837; Abstract, P0039, Claims 90-91), Buser (US 2013/0297320 – of record, P0022) and Jacobs (US 2015/0037527 – of record; P0005 and P0007-0008) which are regarded as being the prior art closest to the subject-matter of claim 1, alone or in combination, fail(s) to teach or suggest a polymer coating that is not a polymer tape attached to a surface of the thermally conductive plate capable of (i) facilitating adhesion to the 3D object during printing and (ii) permitting removal of the 3D object once the 3D object has been formed and without chemically or mechanically removing the polymer coating from 3D object and without damaging the polymer coating, the thermally conductive plate, or the 3D object. This is considered to be novel because it solves critical issues in the current art (e.g. difficulty to remove the 3D object (P0005-0006 of instant PG-PUB), need of chemical/mechanical means to remove 3D object (P0028 of instant PG-PUB), or preventing damage to the polymer coating/3D object/plate (P0024 of instant PG-PUB)).

Therefore, claim 1 is deemed novel and non-obvious over the prior art of record.

Regarding claim(s) 3, 5-11, 15, 17-20, and 22, they depend from claim 1; thus, they are also deemed novel and non-obvious over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JERZI H. MORENO HERNANDEZ whose telephone number is (571)272-0625. The examiner can normally be reached on Monday-Friday: 10AM - 7PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, YOGENDRA GUPTA can be reached on (571)272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JERZI H MORENO HERNANDEZ/
Examiner, Art Unit 1744

/ALISON L HINDENLANG/
Primary Examiner, Art Unit 1744

<i>Examiner-Initiated Interview Summary</i>	Application No. 14/574,237	Applicant(s) REESE ET AL.	
	Examiner JERZI H. MORENO HERNANDEZ	Art Unit 1744	

All participants (applicant, applicant's representative, PTO personnel):

(1) JERZI H. MORENO HERNANDEZ. (3) ____.

(2) Ali R. Alemozafar. (4) ____.

Date of Interview: 27 October 2016.

Type: ☒ Telephonic ☐ Video Conference
 ☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
 If Yes, brief description: ____.

Issues Discussed ☐ 101 ☒ 112 ☐ 102 ☐ 103 ☒ Others
 (For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1.

Identification of prior art discussed: Farnworth (US 2005/0058837; Abstract, P0027, Claims 87-90) and Buser (US 2013/0297320 – of record, P0022).

Substance of Interview
 (For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Applicant's representative and Examiner discussed 112(a) new matter issues, the teachings of Farnworth (US 2005/0058837; Abstract, P0027, Claims 87-90) and Buser (US 2013/0297320 – of record, P0022) and Examiner's proposed amendments. Applicant's representative and Examiner agreed on the content of the proposed amendments and the application is in condition for allowance..

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/JERZI H MORENO HERNANDEZ/ Examiner, Art Unit 1744	
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Notice of References Cited	Application/Control No. 14/574,237	Applicant(s)/Patent Under Reexamination REESE ET AL.	
	Examiner JERZI H. MORENO	Art Unit 1744	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2005/0058837 A1	03-2005	Farnworth, Warren M.	B29C67/0066	428/421
*	B	US-2012/0231225 A1	09-2012	Mikulak, James K.	B29C47/025	428/172
	C	US-				
	D	US-				
	E	US-				
	F	US-				
	G	US-				
	H	US-				
	I	US-				
	J	US-				
	K	US-				
	L	US-				
	M	US-				

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



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BIB DATA SHEET

CONFIRMATION NO. 3704

SERIAL NUMBER 14/574,237	FILING or 371(c) DATE 12/17/2014 RULE	CLASS 425	GROUP ART UNIT 1744	ATTORNEY DOCKET NO. 50823-712.201	
APPLICANTS Arevo Inc., Saratoga, CA; INVENTORS Riley Reese, Carpinteria, CA; Hemant Bheda, Saratoga, CA; ** CONTINUING DATA ***** ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 01/02/2015					
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and /JERZI H MORENO Acknowledged HERNANDEZ/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY CA	SHEETS DRAWINGS 2	TOTAL CLAIMS 18	INDEPENDENT CLAIMS 1
ADDRESS WILSON, SONSINI, GOODRICH & ROSATI 650 PAGE MILL ROAD PALO ALTO, CA 94304-1050 UNITED STATES					
TITLE HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS					
FILING FEE RECEIVED 730	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit		

Issue Classification 	Application/Control No. 14574237	Applicant(s)/Patent Under Reexamination REESE ET AL.	
	Examiner JERZI H MORENO HERNANDEZ	Art Unit 1744	

CPC					
Symbol				Type	Version
B33Y	30	00		F	2014-12-01
B29K	2879	085		A	2013-01-01
B29L	2009	005		A	2013-01-01
B29C	67	0085		I	2013-01-01
B29C	67	0088		I	2013-01-01
B33Y	50	02		I	2014-12-01

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version

/JERZI H MORENO HERNANDEZ/ Examiner.Art Unit 1744 (Assistant Examiner)	10/27/2016 (Date)	Total Claims Allowed: 15	
/ALISON L HINDENLANG/ Primary Examiner.Art Unit 1744 (Primary Examiner)	10/28/2016 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

Issue Classification 	Application/Control No. 14574237	Applicant(s)/Patent Under Reexamination REESE ET AL.
	Examiner JERZI H MORENO HERNANDEZ	Art Unit 1744

US ORIGINAL CLASSIFICATION						INTERNATIONAL CLASSIFICATION													
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED								
						B	2	9	C	67 / 00 (2006.01.01)									
CROSS REFERENCE(S)																			
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																		

/JERZI H MORENO HERNANDEZ/ Examiner.Art Unit 1744 (Assistant Examiner)	10/27/2016 (Date)	Total Claims Allowed: 15	
/ALISON L HINDENLANG/ Primary Examiner.Art Unit 1744 (Primary Examiner)	10/28/2016 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

Issue Classification 	Application/Control No. 14574237	Applicant(s)/Patent Under Reexamination REESE ET AL.
	Examiner JERZI H MORENO HERNANDEZ	Art Unit 1744

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1														
2	3														
3	5														
4	6														
5	7														
6	8														
7	9														
8	10														
9	11														
10	15														
11	17														
12	18														
13	19														
14	20														
15	22														

/JERZI H MORENO HERNANDEZ/ Examiner.Art Unit 1744 (Assistant Examiner)	10/27/2016 (Date)	Total Claims Allowed: 15	
/ALISON L HINDENLANG/ Primary Examiner.Art Unit 1744 (Primary Examiner)	10/28/2016 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S129	1	14/574237.app.	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 17:43
S130	2	(B29C67/0092 or B33Y30/00).cpc. and (B29K2879/085 or B29L2009/005).cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 17:44
S131	8308	B29C67/00\$.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 17:44
S132	1164	B33Y3\$.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 17:44
S133	8432	S132 or S131	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 17:44
S134	9009	B29C67/00\$.cpc. or B33Y\$.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 17:44
S135	8639	(cool\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4) with (platform stage plate platen bed) with (part model piece object product)	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 18:21
S136	750	B29C67/0051.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 18:33
S137	792	B29C67/0085.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 18:34
S138	2135	S132 S136 S137	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 18:34
S139	30	S135 and S138	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 18:34
S140	1164	B33Y3\$.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 20:19

S141	8639	(cool\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4) with (platform stage plate platen bed) with (part model piece object product)	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 20:19
S142	750	B29C67/0051.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 20:19
S143	792	B29C67/0085.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 20:19
S144	2135	S140 S142 S143	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 20:19
S145	30	S141 and S144	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 20:19
S146	8308	B29C67/00\$.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 20:32
S147	8432	S140 or S146	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 20:32
S148	1	14/574237.app.	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 20:46
S149	2726	B33Y\$.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 20:59
S150	13622	B29C67\$.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 21:00
S151	750	B29C67/0051.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 21:08
S152	792	B29C67/0085.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 21:08
S153	1650	(B33Y30/00 or B33Y50/02).cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 21:12
S154	1234	(B29C67/0088).cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/24 21:12
S155	4	(B29K2879/085).cpc.	US- PGPUB; USPAT;	OR	ON	2016/10/24 21:12

			USOCR			
S156	366	(B29L2009/005).cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 21:13
S157	1	S155 and S156	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 21:13
S158	1	US adj "20160176118"	DERWENT	OR	ON	2016/10/24 22:29
S159	5762	(platform stage plate platen bed) with (cool\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (platform stage plate platen bed) with (part model piece object product).ab.	DERWENT	OR	ON	2016/10/24 22:32
S160	2112	B33Y\$.cpc.	DERWENT	OR	ON	2016/10/24 22:32
S161	11934	B29C67/00\$.cpc.	US-PGPUB; USPAT; USOCR; DERWENT	OR	ON	2016/10/24 22:32
S162	4	S159 and (S160 S161)	US-PGPUB; USPAT; USOCR; DERWENT	OR	ON	2016/10/24 22:32
S163	8	(eas\$3 facilitat\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (platform stage plate platen bed) near5 (coat\$3 film foil sheet) with (part model piece object product) and "25"	DERWENT	OR	ON	2016/10/24 23:17
S164	15	(eas\$3 facilitat\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (platform stage plate platen bed) near5 (coat\$3 film foil sheet) with (part model piece object product) and "25"	FPRS; EPO; JPO	OR	ON	2016/10/24 23:17
S165	0	(polyimide near3 releasing near3 (film sheet foil)).ab.	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 23:24
S166	2	(polyimide near3 releas\$3 near3 (film sheet foil)).ab.	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 23:25
S167	24	(polyimide near3 (mould mould) near3 releas\$3 near3 (film sheet foil))	US-PGPUB; USPAT; USOCR	OR	ON	2016/10/24 23:28
S168	9	("2002/0195744").URPN.	USPAT	OR	ON	2016/10/24 23:32
S169	1	(eas\$3 facilitat\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (platform stage plate platen bed) near5 (coat\$3 film foil sheet)	DERWENT	OR	ON	2016/10/24 23:39

		with (part model piece object product) and (S160 S161)				
S200	1	14/574237.app.	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/25 16:43
S211	2	(B29C67/0092 or B33Y30/00).cpc. and (B29K2879/085 or B29L2009/005).cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/26 20:56
S212	1	14/574237.app.	US- PGPUB; USPAT; USOCR	OR	ON	2016/10/26 20:56

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S170	2726	B33Y\$.cpc.	US- PGPUB; USPAT	OR	ON	2016/10/24 21:13
S171	1650	(B33Y30/00 or B33Y50/02).cpc.	US- PGPUB; USPAT	OR	ON	2016/10/24 21:13
S172	12188	B29C67\$.cpc.	US- PGPUB; USPAT	OR	ON	2016/10/24 21:14
S173	750	B29C67/0051.cpc.	US- PGPUB; USPAT	OR	ON	2016/10/24 21:14
S174	792	B29C67/0085.cpc.	US- PGPUB; USPAT	OR	ON	2016/10/24 21:14
S175	1234	(B29C67/0088).cpc.	US- PGPUB; USPAT	OR	ON	2016/10/24 21:14
S176	12888	S170 S171 S172 S173 S174 S175	US- PGPUB; USPAT	OR	ON	2016/10/24 21:15
S177	602	((platform stage plate platen bed) near5 (coat\$3)) and S176	US- PGPUB; USPAT	OR	ON	2016/10/24 21:16
S178	4	((platform stage plate platen bed) near5 (polyimid\$3) near5 (coat\$3)) and S176	US- PGPUB; USPAT	OR	ON	2016/10/24 21:17
S179	0	((platform stage plate platen bed) near5 (polyimid\$3) near5 (coat\$3)).clm. and S176	US- PGPUB; USPAT	OR	ON	2016/10/24 21:18
S180	30	((platform stage plate platen bed) near5 (polyimid\$3) near5 (coat\$3)).clm.	US- PGPUB; USPAT	OR	ON	2016/10/24 21:18
S181	3	((platform stage plate platen bed) near5 (polyimid\$3) near5 (coat\$3)) and (cool\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4) with (platform stage plate platen bed) with (part model piece object product)	US- PGPUB; USPAT	OR	ON	2016/10/24 21:39

S182	7	((platform stage plate platen bed) near5 (polyimid\$3) near5 (coat\$3 film)) and (cool\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4) with (platform stage plate platen bed) with (part model piece object product)	US-PGPUB; USPAT	OR	ON	2016/10/24 21:40
S183	50	((platform stage plate platen bed) near5 (coat\$3 film layer)) and (cool\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4) with (platform stage plate platen bed) with (part model piece object product) and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 21:48
S184	4	((platform stage plate platen bed) near5 (coat\$3 film)) and (cool\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4) with (platform stage plate platen bed) with (part model piece object product) and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 21:50
S185	7	((platform stage plate platen bed) near5 (coat\$3 film foil)) and (cool\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (platform stage plate platen bed) with (part model piece object product) and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 22:04
S186	3	S185 not S184	US-PGPUB; USPAT	OR	ON	2016/10/24 22:05
S187	99	(platform stage plate platen bed) with (cool\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (platform stage plate platen bed) with (part model piece object product) and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 22:20
S188	1	("2014/0220168").URPN.	USPAT	OR	ON	2016/10/24 22:21
S189	307	(platform stage plate platen bed) with (cool\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (platform stage plate platen bed) with (part model piece object product).ab.	US-PGPUB; USPAT	OR	ON	2016/10/24 22:28
S190	3	(platform stage plate platen bed) with (cool\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (platform stage plate platen bed) with (part model piece object product).ab. and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 22:28
S191	57	(dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (platform stage plate platen bed) with (part model piece object product).ab. and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 22:33
S192	159	(platform stage plate platen bed) same (releas\$3 peel\$3) near3 (film sheet foil) and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 22:36
S193	105	(platform stage plate platen bed) same (releas\$3) near3 (film sheet foil) and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 22:36
S194	57	(platform stage plate platen bed) with (releas\$3) near3 (film sheet foil) and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 22:36
S195	6	(platform stage plate platen bed) with (polyimide) near3 (film sheet foil) and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 22:51

S196	2	(platform stage plate platen bed) with (polyimide) near3 (coat\$3) and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 22:51
S197	243	(eas\$3 facilitat\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (platform stage plate platen bed) with (part model piece object product) and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 23:01
S198	7	(eas\$3 facilitat\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (platform stage plate platen bed) with (part model piece object product).ab. and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 23:03
S199	19	(eas\$3 facilitat\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (platform stage plate platen bed) near5 (coat\$3 film foil sheet) with (part model piece object product) and S176	US-PGPUB; USPAT	OR	ON	2016/10/24 23:06
S201	2728	B33Y\$.cpc.	US-PGPUB; USPAT	OR	ON	2016/10/25 16:43
S202	1651	(B33Y30/00 or B33Y50/02).cpc.	US-PGPUB; USPAT	OR	ON	2016/10/25 16:43
S203	12191	B29C67\$.cpc.	US-PGPUB; USPAT	OR	ON	2016/10/25 16:43
S204	751	B29C67/0051.cpc.	US-PGPUB; USPAT	OR	ON	2016/10/25 16:43
S205	792	B29C67/0085.cpc.	US-PGPUB; USPAT	OR	ON	2016/10/25 16:43
S206	1235	(B29C67/0088).cpc.	US-PGPUB; USPAT	OR	ON	2016/10/25 16:43
S207	12891	S201 S202 S203 S204 S205 S206	US-PGPUB; USPAT	OR	ON	2016/10/25 16:43
S208	21	(eas\$3 facilitat\$3) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (platform stage plate platen bed) near5 (substrate tray) with (part model piece object product) and S207	US-PGPUB; USPAT	OR	ON	2016/10/25 16:43
S209	526	B29C33/68.cpc.	US-PGPUB; USPAT	OR	ON	2016/10/25 19:53
S210	41	S207 and S209	US-PGPUB; USPAT	OR	ON	2016/10/25 19:53
S213	2728	B33Y\$.cpc.	US-PGPUB; USPAT	OR	ON	2016/10/26 21:03
S214	1651	(B33Y30/00 or B33Y50/02).cpc.	US-PGPUB; USPAT	OR	ON	2016/10/26 21:03
S215	12191	B29C67\$.cpc.	US-PGPUB;	OR	ON	2016/10/26 21:03

			USPAT			
S216	751	B29C67/0051.cpc.	US-PGPUB; USPAT	OR	ON	2016/10/26 21:03
S217	792	B29C67/0085.cpc.	US-PGPUB; USPAT	OR	ON	2016/10/26 21:03
S218	1235	(B29C67/0088).cpc.	US-PGPUB; USPAT	OR	ON	2016/10/26 21:03
S219	12891	S213 S214 S215 S216 S217 S218	US-PGPUB; USPAT	OR	ON	2016/10/26 21:03
S220	12	((soft plastic thermoplastic resilient flexible resin) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (coat\$3 film foil sheet tray) with (platform stage plate platen bed base) with (part model piece object product)).clm. and S219	US-PGPUB; USPAT	OR	ON	2016/10/26 21:03
S221	49	((soft plastic thermoplastic resilient flexible resin) with (dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) with (coat\$3 film foil sheet tray) with (platform stage plate platen bed base) with (part model piece object product)) and S219	US-PGPUB; USPAT	OR	ON	2016/10/26 21:06
S222	189	((dissociation remov\$3 peel\$3 separat\$4 split\$4 pop\$4 releas\$3) near5 (coat\$3 film foil sheet tray) with (platform stage plate platen bed base) with (part model piece object product)) and S219	US-PGPUB; USPAT	OR	ON	2016/10/26 21:09
S223	16	((peel\$3 releas\$3) near5 (coat\$3) with (platform stage plate platen bed base) with (part model piece object product)) and S219	US-PGPUB; USPAT	OR	ON	2016/10/26 21:19

10/ 27/ 2016 11:40:44 PM

C:\Users\jhernandez\Documents\EAST\Workspaces\14574237.wsp

Search Notes 	Application/Control No. 14574237	Applicant(s)/Patent Under Reexamination REESE ET AL.
	Examiner JERZI H MORENO HERNANDEZ	Art Unit 1744

CPC- SEARCHED		
Symbol	Date	Examiner
B29C67/0092;B33Y30/00	11/17/2015	JHMH
B29K2879/085;B29L2009/005	11/17/2015	JHMH
Updated search	6/30/2016	JHMH
Updated search	10/27/2016	JHMH

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
inventor name searched	11/17/2015	JHMH
see EAST search history attached	11/17/2015	JHMH
See updated EAST search history attached	6/30/2016	JHMH
See updated EAST search history attached	10/27/2016	JHMH

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	See updated EAST search history attached	10/27/2016	JHMH

/JERZI H MORENO HERNANDEZ/ Examiner.Art Unit 1744	
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 14/574,237		Filing Date 12/17/2014		☐ To be Mailed	
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ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO									
APPLICATION AS FILED – PART I									
(Column 1)			(Column 2)						
FOR		NUMBER FILED	NUMBER EXTRA			RATE (\$)	FEE (\$)		
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A			N/A			
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A	N/A			N/A			
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A			N/A			
TOTAL CLAIMS (37 CFR 1.16(j))		minus 20 =	*			X \$	=		
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*			X \$	=		
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).							
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL			

APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)			(Column 3)				
AMENDMENT	10/07/2016		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		* 18	Minus	** 20	= 0		X \$40 =	0	
	Independent (37 CFR 1.16(h))		* 1	Minus	***3	= 0		X \$210 =	0	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
							TOTAL ADD'L FEE		0	
(Column 1)			(Column 2)			(Column 3)				
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		*	Minus	**	=		X \$	=	
	Independent (37 CFR 1.16(h))		*	Minus	***	=		X \$	=	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
							TOTAL ADD'L FEE			

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/PAMELA V. THERATT/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 14/574,237		Filing Date 12/17/2014		☐ To be Mailed		
ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO										
APPLICATION AS FILED – PART I										
		(Column 1)		(Column 2)						
FOR		NUMBER FILED		NUMBER EXTRA		RATE (\$)		FEE (\$)		
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A		N/A		N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A		N/A		N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A		N/A		N/A				
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =		*		X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =		*		X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL				
APPLICATION AS AMENDED – PART II										
		(Column 1)		(Column 2)		(Column 3)				
AMENDMENT	10/07/2016		CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		* 18		Minus	** 20	= 0	X \$40 =	0	
	Independent (37 CFR 1.16(h))		* 1		Minus	*** 3	= 0	X \$210 =	0	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L FEE								0	
		(Column 1)		(Column 2)		(Column 3)				
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		*		Minus	**	=	X \$ =		
	Independent (37 CFR 1.16(h))		*		Minus	***	=	X \$ =		
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L FEE									
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

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/PAMELA V. THERATT/

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If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)

Approved for use through 07/31/2012 OMB 0551-0031

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL (Submitted Only via EFS-Web)

Application Number	14/574237	Filing Date	2014-12-17	Docket Number (if applicable)	50823-712.201	Art Unit	1744
First Named Inventor	Riley Reese			Examiner Name	MORENO HERNANDEZ, Jerzi H.		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☒ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____.
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No. 23-2415

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)

Approved for use through 07/31/2012 OMB 0551-0031

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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Signature of Registered U.S. Patent Practitioner			
Signature	/Ali Alemozafar/	Date (YYYY-MM-DD)	2016-10-07
Name	Ali Alemozafar	Registration Number	68180

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If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal				
Application Number:		14574237		
Filing Date:		17-Dec-2014		
Title of Invention:		HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS		
First Named Inventor/Applicant Name:		Riley Reese		
Filer:		Ali Reza Alemozafar/Sherry Castro		
Attorney Docket Number:		50823-712.201		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
RCE- 1st Request	1801	1	1200	1200
Total in USD (\$)				1200

Electronic Acknowledgement Receipt	
EFS ID:	27156149
Application Number:	14574237
International Application Number:	
Confirmation Number:	3704
Title of Invention:	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS
First Named Inventor/Applicant Name:	Riley Reese
Customer Number:	21971
Filer:	Ali Reza Alemozafar/Sherry Castro
Filer Authorized By:	Ali Reza Alemozafar
Attorney Docket Number:	50823-712.201
Receipt Date:	07-OCT-2016
Filing Date:	17-DEC-2014
Time Stamp:	15:16:38
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$1200
RAM confirmation Number	101116INTEFSW00001711232415
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		50823712201_RFOA.pdf	114668	yes	11
			941a4c4baa3ab1cd09cf18608ae9500637ff54c9		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment Submitted/Entered with Filing of CPA/RCE		1	1	
	Claims		2	5	
	Applicant summary of interview with examiner		6	6	
	Applicant Arguments/Remarks Made in an Amendment		7	11	
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	50823712201_RCE.pdf	872116	no	3
			cf695481b962d072b0ebf17edb9c7e64a581e528		
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30457	no	2
			cf6de028dc46a0488bc964ea6ddc775376062e9d		
Warnings:					
Information:					
Total Files Size (in bytes):			1017241		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronically Filed: October 7, 2016

Attorney Docket No.: 50823-712.201

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	
Inventors: Riley Reese, <i>et al.</i>	Group Art Unit: 1744
Application No.: 14/574,237	Examiner: MORENO HERNANDEZ, Jerzi H.
Filed: December 17, 2014	Confirmation No.: 3704
For: HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS	Customer No.: 021971

**RESPONSE TO FINAL OFFICE ACTION / REQUEST FOR CONTINUED
EXAMINATION**

Mail Stop A/F
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Commissioner:

This communication is in response to the Final Office Action mailed on July 14, 2016. This response is filed together with a request for continued examination (RCE) along with the requisite fee.

Applicant respectfully requests reconsideration of this application in view of the following amendments and remarks.

Amendments to the Claims begin on page 2 of this paper.

A **Summary of the Interview** appears on page 6 of this paper.

Remarks begin on page 7 of this paper.

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A build apparatus ~~working as a base for printing a 3D objects~~
object of thermoplastics employing additive manufacturing methods, the apparatus comprising:

a build platform with a temperature control ~~[[means]] unit for heating~~ regulating a
temperature of the build platform;

a ~~[[thin]]~~ thermally conductive ~~removable~~ plate ~~having a build surface meant to be~~
~~removably placed on top of~~ disposed adjacent to the build platform~~[[,]]~~; and

a polymer coating ~~coated over the~~ adjacent to a surface of the ~~removable~~ thermally
conductive plate for maintaining adhesion between the 3D object and the build surface
throughout the printing, which polymer coating has a surface that (i) facilitates adhesion to the
3D object during printing and (ii) permits removal of the 3D object once the 3D object has been
formed and cooled by the temperature control unit,

wherein the temperature control unit cools the 3D object subsequent to formation, to
permit removal of the 3D object from the thermally conductive plate without removal of the
thermally conductive plate from the build platform; and

~~where the surface of the polymer coating is treated to improve adhesion between the 3D~~
~~object and the build surface.~~

2. (Canceled)

3. (Currently Amended) The build apparatus ~~as claimed in~~ of claim 1, wherein the
polymer coating is a polyimide.

4. (Canceled)

5. (Currently Amended) The build apparatus ~~claimed in~~of claim 1, wherein the temperature control means to heat the build platform comprises heater cartridges that are spaced along the surface of the build platform.

6. (Currently Amended) The build apparatus ~~claimed in~~of claim 1, wherein the build platform comprises thermocouples situated at one or several locations to provide feedback to a controller for maintaining temperature set points.

7. (Currently Amended) The build apparatus ~~claimed in~~of claim 1, ~~wherein further comprising a ceramic or other high temperature dielectric is used to that~~ insulates the build platform ~~from external means~~.

8. (Currently Amended) The build apparatus ~~as claimed in~~of claim 1, wherein the build platform, the removable plate, and the polymer coating are able to withstand high temperature ranging between 150 degree Celsius and 300 degree Celsius.

9. (Currently Amended) The build apparatus ~~claimed in~~of claim 1, wherein the material for the removable plate ~~may be~~ comprises one or more of aluminum, steel, brass, ceramic, glass, or alloys similar with a low coefficient of thermal expansion (CTE).

10. (Currently Amended) The build apparatus ~~claimed in~~of claim 1, wherein the material for the build platform ~~may be~~ comprises one or more of aluminum, steel, brass, ceramic, glass, or alloys with a low coefficient of thermal expansion (CTE).

11. (Currently amended) The build apparatus ~~claimed in~~of claim 1, wherein the removable plate thickness ranges from 0.025-0.5" and wherein the thickness is selected depending on the flexural character of the material.

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Currently Amended) The build apparatus ~~claimed in~~of claim 1, wherein the thickness of the polymer coating ~~may range~~ranges from 0.001" to 0.1".

16. (Canceled)

17. (Currently Amended) The build apparatus ~~claimed in~~of claim 1, wherein the ~~surface of the polymer coating is treated at the~~includes nano-, micro-, or milli-meter scale features ~~that increase polymer adhesion to the polyimide-coated surface~~ [[to]] 3D object.

18. (Currently amended) The build apparatus ~~claimed in~~of claim 1, wherein the removable plate is flexible in nature, where the flexibility allows for easier dissociation between the 3D object and the removable plate upon cooling and reduces the possibility of damage to the polymer coating or the 3D object during object removal.

19. (New) The build apparatus of claim 1, wherein the temperature control unit is a heater cartridge.

20. (New) The build apparatus of claim 1, wherein the build platform has a first coefficient of thermal expansion (CTE) and the thermally conductive plate has a second CTE, wherein the first CTE is greater than the second CTE.

21. (New) The build apparatus of claim 1, wherein the polymer coating is not a polymer tape.

22. (New) The build apparatus of claim 1, wherein the thermally conductive plate is non-magnetically secured to and removable from the build platform.

23. (New) The build apparatus of claim 1, wherein the thermally conductive plate is non-magnetically secured to and irremovable from the build platform.

24. (New) The build apparatus of claim 23, wherein the thermally conductive plate is non-magnetically secured to and irremovable from the build platform during printing.

SUMMARY OF THE INTERVIEW

Applicant is appreciative of Primary Examiner Hindenlang and Examiner Hernandez for extending the courtesy of an examiner's interview to Applicant's representatives, Ali Alemozafar and Jing Wang, on September 13, 2016. During the interview, amendments and arguments consistent with those detailed herein were discussed.

REMARKS

Claims 1, 3, 5-11, 13, 15, 17 and 18 were pending prior to entry of the abovementioned amendments. Claims 1, 3, 5-11, 15, and 17-24 are currently pending and claim 13 is canceled. Claims 1, 3, 5-11, 15, 17, and 18 are currently amended. Support for claim amendments can be found at least in paragraphs [0019], [0028], [0031], and [0032]. Claims 19-24 are new. Support for the new claims can be found at least in paragraphs [0019], [0020], [0022], [0023], [0028], [0029], and [0031].

Reconsideration and allowance of this application is respectfully requested in light of the following remarks.

Claims amendments

Claim 1 has been amended to clarify the claimed subject matter. The amendments to claim 1 are fully supported by the application as originally filed, U.S. Patent Application No. 14/574,237, now U.S. Patent Publication No. 2016/0176118 (“the Application”) at, for example, paragraphs [0019], [0020], [0028], [0031], and [0032].

Claims 3, 5-11, 15, 17, and 18 have been amended for antecedent basis or typographical purposes.

New claims 19-24 are fully supported by the Application at, for example, [0019], [0020], [0022], [0023], [0028], [0029], and [0031].

35 U.S.C. § 112

Claim 7 stands rejected under 35 U.S.C. § 112(a) or 35 U.S.C. § 112 (pre-AIA), first paragraph. Claims 7, 9-10, 15, and 17 under 35 U.S.C. § 112(b) or 35 U.S.C. § 112 (pre-AIA),

second paragraph. Claims 13 and 17 stand rejected under 35 U.S.C. § 112(d) or pre-AIA 35 U.S.C. 112, 4th paragraph.

Without conceding in the basis of rejection, and solely to expedite the prosecution of this application, Applicant has amended Claim 7 to clarify the claimed subject matter. Accordingly, Applicant respectfully requests that the § 112(a) / § 112, first paragraph rejection of Claim 7 be withdrawn.

Without conceding in the basis of rejection, and solely to expedite the prosecution of this application, Applicant has amended claims 7, 9-10, 15 and 17 to clarify the claimed subject matter. Accordingly, Applicant respectfully requests that the § 112(b) / § 112, second paragraph rejections of claims 7, 9-10, 15 and 17 be withdrawn.

Without conceding in the basis of rejection, and solely to expedite the prosecution of this application, Applicant has amended Claim 17 to clarify the claimed subject matter. Accordingly, Applicant respectfully requests that the § 112(d) / § 112, fourth paragraph rejection of claim 17 be withdrawn.

Without conceding in the basis of rejection, Applicant submits that the § 112(d) / § 112, fourth paragraph rejection of Claim 13 is moot in view of the cancellation of this claim.

35 U.S.C. § 102

Claims 1, 3, 5, 7-11, 13, 15, and 17-18 stand rejected under 35 U.S.C. § 102(a)(2) over US 2015/0145174 (Comb).

Without conceding in the basis of rejection, and solely to expedite the prosecution of this application, Applicant has amended Claim 1 to clarify certain differences between the claimed subject matter and Comb. Applicant submits that Claim 1 is novel over Comb because this

reference does not teach or disclose all of the elements of this claim. For example, Comb does not teach or disclose “a build platform with a temperature control unit for regulating a temperature of the build platform . . . a polymer coating adjacent to a surface of the thermally conductive plate for maintaining adhesion between the 3D object and the build surface throughout the printing, which polymer coating has a surface that (i) facilitates adhesion to the 3D object during printing and (ii) permits removal of the 3D object once the 3D object has been formed and cooled by the temperature control unit, wherein the temperature control unit cools the 3D object subsequent to formation, to permit removal of the 3D object from the thermally conductive plate without removal of the thermally conductive plate from the build platform,” as recited in Claim 1. Accordingly, Applicant respectfully requests that the § 102 rejection of Claim 1 be withdrawn.

Claims 3, 5, 7-11, 15 and 17-18 depend from and include all of the elements of Claim 1, and recite additional elements of particular advantage and utility. Comb does not teach or disclose all of the elements of Claim 1, much less the combination of elements of claims 3, 5, 7-11, 15 and 17-18. Accordingly, Applicant respectfully requests that the § 102 rejections of claims 3, 5, 7-11, 15 and 17-18 also be withdrawn.

Without conceding in the basis of rejection, Applicant submits that the § 102 rejection of Claim 13 is moot in view of the cancellation of this claim.

35 U.S.C. § 103

Claim 6 stands rejected under 35 U.S.C. § 103 over Comb in view of U.S. Patent No. 8,282,380 (Pax) and U.S. Patent Pub. No. 2010/0174392 (Fink).

Claim 6 is not obvious over the asserted combination of Comb, Pax and Fink for at least the reason that this claim depends from Claim 1, and recites additional elements of particular advantage and utility. Comb does not teach or disclose all of the elements of Claim 1, much less the combination of Claim 6, and neither Pax nor Fink cures the abovementioned deficiencies of Comb. Accordingly, Applicant respectfully requests that the § 103 rejection of Claim 6 be withdrawn.

It shall be understood herein that any instance in which Applicant has addressed certain comments set forth by the Office shall not be construed as a concession to other comments or arguments advanced by the Office. Any circumstance in which Applicant has amended or canceled a claim also does not mean that Applicant concedes to the arguments or positions advanced by the Office with respect to that claim or other claims pending herein.

CONCLUSION

Applicant submits that this paper fully addresses the issues presented in the Final Office Action dated July 14, 2016. In view of the amendments and remarks above, favorable reconsideration of the application is respectfully requested and Applicant respectfully requests the Examiner to move this application to issuance. Should the Examiner have any questions, the Examiner is encouraged to telephone the undersigned.

The Commissioner is authorized to charge any additional fees which may be required, including petition fees and extension of time fees, to Deposit Account No. **23-2415** (Docket No. 50823-712.201).

Respectfully submitted,

WILSON SONSINI GOODRICH & ROSATI
Professional Corporation

Date: October 7, 2016

By: /Ali Alemozafar/
Ali R. Alemozafar, Ph.D., Esq.
Reg. No. 68,180

650 Page Mill Road
Palo Alto, CA 94304
Telephone No.: (415) 947-2054
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UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/574,237	12/17/2014	Riley Reese	50823-712.201	3704
21971 7590 09/19/2016 WILSON, SONSINI, GOODRICH & ROSATI 650 PAGE MILL ROAD PALO ALTO, CA 94304-1050			EXAMINER MORENO HERNANDEZ, JERZI H	
			ART UNIT 1744	PAPER NUMBER
			NOTIFICATION DATE 09/19/2016	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@wsgr.com

<i>Applicant-Initiated Interview Summary</i>	Application No. 14/574,237	Applicant(s) REESE ET AL.	
	Examiner JERZI H. MORENO HERNANDEZ	Art Unit 1744	

All participants (applicant, applicant's representative, PTO personnel):

(1) JERZI H. MORENO HERNANDEZ. (3) ALI ALEMOZAFAR.

(2) ALISON L. HINDENLANG. (4) JING WANG.

Date of Interview: 13 September 2016.

Type: ☐ Telephonic ☐ Video Conference
 ☒ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐ 101 ☒ 112 ☒ 102 ☐ 103 ☐ Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1, 7, and 13.

Identification of prior art discussed: Comb (US 2015/0145174).

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Discussed proposed amendments. Agreement was reached that the proposed amendments seem to overcome the current 35 U.S.C. 102 and 112 rejections. Examiner suggested applicant to tie the proposed material conditions to the thermal control unit structure and to avoid new matter issues.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/JERZI H MORENO HERNANDEZ/ Examiner, Art Unit 1744	/ALISON HINDENLANG/ Primary Examiner, Art Unit 1744
---	--

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/574,237	12/17/2014	Riley Reese	000285/00630

94544
Cittone & Chinta LLP
11 Broadway, Suite 615
New York, NY 10004

CONFIRMATION NO. 3704
POWER OF ATTORNEY NOTICE



Date Mailed: 08/26/2016

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/16/2016.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/qtran/



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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/574,237	12/17/2014	Riley Reese	000285/00630

CONFIRMATION NO. 3704

POA ACCEPTANCE LETTER

21971
WILSON, SONSINI, GOODRICH & ROSATI
650 PAGE MILL ROAD
PALO ALTO, CA 94304-1050



Date Mailed: 08/26/2016

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/16/2016.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/qtran/

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:



Practitioners associated with Customer Number:

021971

OR

Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:



The address associated with Customer Number:

021971

OR

Firm or Individual Name		
Address		
City		
Country		
Telephone		Email

Assignee

Arevo, Inc.

2960 Scott Blvd

Santa Clara, Ca 95054

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/SB/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	August 15, 2016
Name	Hemant Bheda	Telephone	408 205 1051
Title	CEO		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt	
EFS ID:	26660597
Application Number:	14574237
International Application Number:	
Confirmation Number:	3704
Title of Invention:	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS
First Named Inventor/Applicant Name:	Riley Reese
Customer Number:	94544
Filer:	Ali Reza Alemozafar/Nicole L. Mims
Filer Authorized By:	Ali Reza Alemozafar
Attorney Docket Number:	000285/00630
Receipt Date:	16-AUG-2016
Filing Date:	17-DEC-2014
Time Stamp:	19:52:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Assignee showing of ownership per 37 CFR 3.73	Statement_3-73_14574237.pdf	140063	no	2
			5eeea0faffc22a1f59aee766deb87c67c0b9f9234		

Warnings:

Information:					
2	Power of Attorney	POA.pdf	425325	no	1
			b33a7a389026c7e97d69d3909503e42a944b30a2		
Warnings:					
Information:					
Total Files Size (in bytes):				565388	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Hemant Behda

Application No./Patent No.: 14/574,237 Filed/Issue Date: December 17, 2014

Titled: HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS

Arevo, Inc., a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is ____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 035923, Frame 0099, or for which a copy thereof is attached.
- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

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[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Ali Alemozafar/
Signature

August 15, 2016
Date

Ali Alemozafar
Printed or Typed Name

68,180
Title or Registration Number



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/574,237	12/17/2014	Riley Reese	000285/00630	3704
94544	7590	07/14/2016		
Cittone & Chinta LLP 11 Broadway, Suite 615 New York, NY 10004			EXAMINER MORENO HERNANDEZ, JERZI H	
			ART UNIT 1744	PAPER NUMBER
			NOTIFICATION DATE 07/14/2016	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

hcittone@cittonechinta.com
pchinta@cittonechinta.com
reporting@cittonechinta.com

Office Action Summary	Application No. 14/574,237	Applicant(s) REESE ET AL.	
	Examiner JERZI H. MORENO HERNANDEZ	Art Unit 1744	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 02/22/2016.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☒ Claim(s) 1,3,5-11,13,15,17 and 18 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☒ Claim(s) 1, 3, 5-11, 13, 15, and 17-18 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10) ☒ The specification is objected to by the Examiner.

11) ☒ The drawing(s) filed on 12/17/2014 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some** c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Note

Examiner wishes to point out to applicant that claim(s) is/are directed towards an apparatus and as such will be examined under the following conditions. The material worked upon or the process of using the apparatus is viewed as recitation of intended use and is given patentable weight only to the extent that structure is added to the claimed apparatus (Please see MPEP § 2114 R1-2115 R2 for further details). For an apparatuses, the claim limitations will define structural limitations (See MPEP 2114-2115). For example, the recitations “working as a base for printing 3D objects of thermoplastics employing additive manufacturing methods”, “polymer coating coated over”, “for maintaining adhesion between the 3D object and the build surface throughout the printing”, and “is treated to improve adhesion between the 3D object and the build surface;” of claim 1, are considered to be intended use recitations.

Claim Interpretation

Examiner has interpreted “polymer coating” as a polymer layer/sheet as this is the broadest reasonable interpretation.

Specification

The disclosure is objected because of the following informalities:

Reference character “**102**” has been used in the instant specification to designate both a build platform (P0020) and a build platform support (P0020), a block (P0020).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

(a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

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The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 7 is rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventor(s), at the time the application was filed, had possession of the claimed invention. While instant specification has support for insulating the build platform in order to protect other structural elements (e.g. build platform support) from emitted heat (P0020 of instant specification), it does not sufficient support/description for “ceramic or other high temperature dielectric is used to insulate the build platform from external means”. Claim 7 has been examined below as if claim read --ceramic or other high temperature dielectric is used to insulate the build platform--.

The following is a quotation of 35 U.S.C. 112(b):

(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7, 9-10, 15, and 17 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Claim 7 recites “wherein ceramic or other high temperature dielectric is used to insulate the build platform from external means” which is indefinite because the scope is unclear. Where and/or what is the structural element comprising ceramic or other high temperature dielectric? Is it a ceramic plate, chamber, etc.? In addition, the scope of external means is not clear as it was not described in the specification. Is

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the external means water, dust, light, heat, etc.? Claim 7 has been examined below as if claim read -- wherein ceramic or other high temperature dielectric plate is used to insulate the build platform--.

Examiner notes that in the art, the build platform is insulated for the purpose of protecting the surrounding elements from the heat generated from the build platform.

Claim 9 recites “may be” which is indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Claim 10 recites “may be” which is indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Claim 15 recites “may range” which is indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Claim(s) 17 recite(s) the limitation “the polyimide coated surface”. There is insufficient antecedent basis for this limitation in the claim because Claim 17 depends from Claim 1 and “the polyimide coated surface” is not introduced in claim 1. Examiner notes that the polyimide coating is introduced until claim 3. In addition, the recitation “to increase polymer adhesion to the polyimide coated surface” is indefinite because it is unclear what applicant means by polymer adhesion. Does applicant mean increase adhesion between the polyimide coating surface and the 3d object? Claim 17 has been examined below as if the recitation “to increase polymer adhesion to the polyimide coated surface” was not present.

The following is a quotation of 35 U.S.C. 112(d):

(d) REFERENCE IN DEPENDENT FORMS.—Subject to subsection (e), a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), fourth paragraph:

Subject to the [fifth paragraph of 35 U.S.C. 112 (pre-AIA)], a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

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Claim 13 and 17 is rejected under 35 U.S.C. 112(d) or pre-AIA 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends.

Claim 13 fails to further limit Claim 1 because it fails to recite a structural limitation/feature to further limit claim 1. The manner/method of making the polymer coating/layer (i.e. "spray coated") is not a structural/functional limitation of the polymer coating.

Claim 17 fails to further limit Claim 1 because it fails to recite a structural limitation/feature to further limit claim 1. The manner/method of treating the polymer coating/layer (i.e. "is treated at the nano-, micro-, or milli- meter scale") is not a structural/functional limitation of the polymer coating. Claim 17 has been examined below as if claim 17 reads --the polymer coating is treated at the nano-, micro-, or milli-meter scale to impart patterned features to the coating to increase polymer adhesion--.

Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

Claim Rejections - 35 USC § 102

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

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Claims 1, 3, 5, 7-11, 13, 15, and 17-18 are rejected under 35 U.S.C. 102(a)(2) as being anticipated by Comb (US 2015/0145174 – of record).

Regarding claims 1, 9, and 13, Comb teaches a build apparatus (F3-8) working as a base for printing 3D objects of thermoplastics employing additive manufacturing methods (P0001-0002; polyetherimide (thermoplastic) parts, P0055), the apparatus comprising:

a build platform (plate 52) with a temperature control means for heating the build platform (having heating elements 56 “configured to heat plate 52”, P0052, P0047, P0072, F3-8; “heating elements 56 ... platen plate 52 and build sheet 36 to a desired temperature”, P0074);

a thin thermally conductive removable plate (metallic base sheet 36b appears to be thin, made of thermally conductive materials (e.g. **steel**), and have a plate-like shape, P0053, F5-6) having a build surface meant to be removably placed on top of the build platform (the bottom surface of 36b is placed on top of plate 52 and is configured to be removable/detachable from plate 52, P0053, P0086, F5-6);

a polymer coating (top film 36a, P0053; 36b can be “polymeric coatings”, P0053, P0056) coated over the surface of the removable plate (36a is capable of coating/adhering/laminating to 36b, P0053-0056, F3-6) for maintaining adhesion between the 3D object and the build surface throughout the printing (36a “exhibits good adhesion to the part and/or support materials” and has good adhesion properties to reduce curl/distortions during the printing process, P0056);

and where the surface of the polymer coating is treated to improve adhesion between the 3D object and the build surface (36a can be “surface treated or otherwise conditioned to increase its adhesive properties (e.g., texturing)”, P0056).

Regarding claim 3, Comb further teaches wherein the polymer coating is a polyimide (36a can be made of polyimides, P0055, P0086, P0088).

Regarding claim 5, While Comb fails to explicitly teach that the heating elements 56 are heater cartridges, Comb is considered to explicitly teach the claimed heater cartridges because the disclosed heater cartridges (disclosed in P0019 and F2 of instant specification) appear to have the same shape, structure, and function as Comb's heating elements 56 which are spaced along the surface of the build platform (F3-8, in particular F6-7, P0074).

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Regarding claim 7, Comb further teaches wherein ceramic or other high temperature dielectric plate is used to insulate the build platform (heat shield 54 configured to prevent heat generated by heating elements 56 from radiating and made of any suitable material e.g. high-temperature polymeric materials (which can be high-temperature dielectric materials), P0051, F7; Insulator 50 made from one or more “thermally-insulating materials e.g. mica” (mica is high-temperature dielectric material), P0046, F7).

Regarding claim 8, While Comb fails to explicitly teach that the build platform, the removable plate, and the polymer coating are able to withstand high temperature ranging between 150 degree Celsius and 300 degree Celsius, Comb implicitly teaches that build platform, the removable plate, and the polymer coating are capable of withstand temperatures ranging from 150-300 degree Celsius because the apparatus of Comb is capable of manufacturing polyetherimide 3-D parts (P0055; polyetherimides have high glass transition and/or melting temperatures (i.e. at least 200 degree Celsius which is within the claimed range)). In addition, the disclosed/claimed materials making the claimed build platform, the removable plate, and the polymer coating are identical to the materials making the taught build platform, the removable plate, and the polymer coating.

Regarding claim 10, Comb further teaches wherein the material for the build platform can be aluminum (“plate 52 ... preferably fabricated from one or more metallic materials (e.g., aluminum)”, P0047).

Regarding claim 11, Comb further teaches wherein the removable plate thickness ranges from 0.025-0.5” and wherein the thickness is selected depending on the flexural character of the material (“thicknesses for base sheet 36b may range from about 5 mils to about 100 mils” (i.e. 0.005-0.1”) which is within the claimed range and the thickness is selected depending on the desired amount of flexibility, P0057, P0068, P0087).

Regarding claim 15, Comb further teaches wherein the thickness of the polymer coating may range from 0.001” to 0.1” (“suitable thicknesses for top film 36a may range from about 1 mil to about 30 mils (i.e. 0.001-0.03”) which is within the claimed range, P0057).

Regarding claim 17, While Comb fails to explicitly teach that the upper surface of the polymer coating comprises patterns/features at the nano-, micro-, or milli- meter scale, Comb does teach that film

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36a can be “surface treated or otherwise conditioned to increase its adhesive properties (e.g., texturing)” (P0056; “surface roughness tailored to achieve good adhesion”, P0025). As evidenced by Buser (US 2013/0297320, P0022) or Pax (US 8282380 – of record, C3, L6-39), it is well known in the art that texturing implies to provide to the surface a rough or raised texture (e.g. grooves, protrusions, and the like) at the nano-, micro-, or milli- meter scale for the purpose(s) of improving adhesion and/or peeling. Thus, Comb implicitly teaches that the upper surface of the polymer coating comprises patterns/features/textures at the nano-, micro-, or milli- meter scale.

Regarding claim 18, Comb further teaches wherein the removable plate is flexible in nature, where the flexibility allows for easier dissociation between the 3D object and the removable plate upon cooling and reduces the possibility of damage to the polymer coating or the 3D object during object removal (36b has “sufficient flexibility to remove 3D part 38 and support structure 40 after a printing operation is completed”, P0057; “flexing the first build sheet to delaminate the 3D part from the first build sheet”, P0008; P0027, P0068, P0082).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is/are rejected under 35 U.S.C. 103 as being unpatentable over Comb (US 2015/0145174 – of record) in view of Pax (US 8282380 – of record) and Fink (US 2010/0174392 – of record).

Regarding claim 6, Comb further teaches to use a controller configured to operate the components of his system (P0037, P0041) but fails to teach that the build platform comprises thermocouples.

In the same field of endeavor, build platforms, Pax teaches a build platform (102) comprising heaters and a temperature sensor within the build platform and connected to a controller (110) for the

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purposes of controlling and/or maintaining the temperature of the build platform to a desired target temperature (C5, L4-5; C5, L19-20; C5, L28-34; C8, L3-5; C8, L9-13, Claim 15).

In the same field of endeavor, additive manufacturing apparatuses comprising build platforms, Fink teaches a build apparatus (F4a-c) comprising a build platform (bed 84) which comprises an aluminum plate, a plurality of thermocouples, and heaters operating at a set-point (P0026) for the purpose of monitoring and recording temperatures at different locations on the aluminum plate (P0026) and detecting thermal gradients (P0061).

It would have been obvious to one with ordinary skill in art at the time the invention was filed to modify the apparatus of Comb in view of Pax and Fink by incorporating thermocouples to the build platform configured to provide feedback to a controller for the purpose(s) of monitoring the temperature of the build platform and controlling and/or maintaining the temperature of the build platform to a desired target (set point) temperature.

Response to Arguments

Applicant's arguments filed on 02/22/2016 have been fully considered.

Applicant argues that "removable plate meant to be removably placed on the build platform" is a functional limitation (Remarks, pg. 5). This argument is persuasive. However, this is a newly added limitation and is addressed in the current rejection above.

Applicant argues that "is treated or roughened" is a structural limitation of the element polymer coating (Remarks, pg. 5). This argument is not persuasive. The manner/method of treating the polymer coating (i.e. "is treated at the nano-, micro-, or milli- meter scale") is not a structural/functional limitation of the polymer coating. Polymer coating having a chemical and/or textures/features at the nano-, micro-, or milli- meter scale is a structural limitation.

Applicant argues that the amended claim 13 which recites "The build apparatus as claimed in claim 1, wherein the polymer coating is spray coated over the removable plate" properly limits the structural feature of claim 1 (Remarks, pg. 6). This argument is not persuasive. The manner/method of making the polymer coating/layer (i.e. "spray coated") is not a structural/functional limitation of the

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polymer coating. A polymer coating/layer can be sprayed, coated, adhered, laminated, deposited, etc. and still be a polymer coating.

Applicant's arguments with respect to the rejection(s) of amended claim(s) 1 under 35 U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Comb (US 2015/0145174 – of record) as applied above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

For additional prior art of record and not relied upon that is considered to be pertinent to applicant's disclosure see Notice of References Cited PTOL 892.

Scott (US 2011/0241947 – of record; F2-6, P0065).

Pax (US 8282380 – of record, C3, L6-39; Claim 15, C5, L28-34; C5, L20).

Jacobs (US 2015/0037527; P0005, F1-3).

Buser (US 2013/0297320; P0022).

Zenere (US 2012/0328726; F2-7, P0085, P0091, P0095).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JERZI H. MORENO HERNANDEZ whose telephone number is (571)272-0625. The examiner can normally be reached on Monday-Friday: 10AM - 7PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, YOGENDRA GUPTA can be reached on (571)272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JERZI H MORENO HERNANDEZ/
Examiner, Art Unit 1744

/ALISON L HINDENLANG/
Primary Examiner, Art Unit 1744

Notice of References Cited	Application/Control No. 14/574,237	Applicant(s)/Patent Under Reexamination REESE ET AL.	
	Examiner JERZI H. MORENO	Art Unit 1744	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2012/0328726 A1	12-2012	Zenere; Sergio	B29C67/0085	425/174.4
*	B	US-2013/0297320 A1	11-2013	Buser; Anthony James	B29C67/0055	704/275
*	C	US-2015/0037527 A1	02-2015	JACOBS; Andrew C.	B29D7/01	428/41.7
*	D	US-2016/0096326 A1	04-2016	NAWARE; Gaurang N.	B29C67/0088	425/143
	E	US-				
	F	US-				
	G	US-				
	H	US-				
	I	US-				
	J	US-				
	K	US-				
	L	US-				
	M	US-				

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	14/550419.app.	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/30 12:46
L2	1	cn adj "203818580"	DERWENT	OR	ON	2016/06/30 13:08
S1	0	14/574237.app.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:17
S2	1	(B29C67/0092 or B33Y30/00).cpc. and (B29K2879/085 or B29L2009/005).cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:19
S3	1033	(B29C67/0092 or B33Y30/00).cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:19
S4	290	(B29K2879/085 or B29L2009/005).cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:20
S5	12318	(platform stage table base) same (plate) same ((resin \$4polymer \$4monomer \$5plastic) near5 (layer))	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:26
S6	7338	(platform stage table base) same (plate) same (coat\$3 plat\$3) with ((resin \$4polymer \$4monomer \$5plastic) near5 (layer))	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:28
S7	99	(platform stage table base) same (plate) same (coat\$3 plat\$3) with ((resin \$4polymer \$4monomer \$5plastic) near5 (layer)) and ((rapid near3 prototyp\$3) (rapid near3 manufactur\$3) (additive near3 manufactur\$3) (3D near3 printing) (3-D near3 printing) (printing near 3D) (three\$1dimensional near3 printing) (S3 near2 D near3 print\$3) (three-d near3 print\$3) (three-dimensional near3 print\$3) (three-d near3 print\$3) (three near3 dimensional near3 print\$3))	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:29
S8	6	S6 and S3	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:30
S9	189	((heatab\$3 heat\$4 thermal\$3) with (platform stage table)) same (plate with	US-PGPUB;	OR	ON	2015/11/16 11:34

		(resin \$4polymer \$4monomer \$5plastic) near5 layer)	USPAT; USOCR			
S10	9802	((heatab\$3 heat\$4 thermal\$3) with (platform stage table)).ti,ab.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 11:36
S11	689	B29C67/0092.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 11:56
S12	6847	B29C67/00\$.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 12:44
S13	90	((heatab\$3 heat\$4 thermal\$3) with (platform stage table)) same (plate) and S12	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 12:45
S14	0	("2015/0165687").URPN.	USPAT	OR	ON	2015/11/16 12:55
S15	1	tw adj "102223491"	FPRS; EPO; DERWENT	OR	ON	2015/11/16 14:22
S16	120	H05B3/22.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:25
S17	7	((heatab\$3 heat\$4 thermal\$3) with (platform stage table)) same (plate) and S16	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:42
S20	530	B29C2795\$.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:42
S21	3	((heatab\$3 heat\$4 thermal\$3) with (platform stage table)) same (plate) and S20	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:46
S22	268	((heatab\$3 heat\$4 thermal\$3) with (platform stage) with (plate)).ti,ab.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:47
S23	371	(B33Y30/00).cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:47
S24	12	((heatab\$3 heat\$4 thermal\$3) with (platform stage table)) same (plate) and S23	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:47
S25	0	("2015/0306700").URPN.	USPAT	OR	ON	2015/11/16 14:53
S26	371	B33Y3\$.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:54
S27	6891	S26 or S12	US-	OR	ON	2015/11/16

			PGPUB; USPAT; USOCR			14:55
S28	4	S22 and S27	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:55
S29	404650	(platform stage table plate) with (coat\$3)	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:57
S30	20030	(platform stage table plate) with (temperatur\$3 near10 coat\$3)".ti,ab",	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:57
S31	19746	(platform stage table plate) with (temperatur\$3 near10 coat\$3)".ti,ab""."	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:57
S32	196	(platform stage table plate) with (temperatur\$3 near10 coat\$3).ti,ab.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:58
S33	213	(platform stage table plate) with (temperatur\$3 near10 coat\$3 near10 (resin \$4polymer \$4monomer \$5plastic) near5 layer)	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 15:08
S34	2	S33 and S27	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 15:09
S35	9170	(platform stage table plate) with (coat\$3 near10 (resin \$4polymer \$4monomer \$5plastic) near5 layer)	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 15:10
S36	34	(platform plate) with (coat\$3 near10 (resin \$4polymer \$4monomer \$5plastic) near5 layer) and S27	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 15:11
S37	1709	((build\$3 construct\$3 mold\$4 mould\$3) near10 (platform plate) with ((resin \$4polymer \$4monomer \$5plastic) near5 (layer)) (resin \$4polymer \$4monomer \$5plastic) near5 layer) and S27	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 15:28
S38	1721	(plastic resin) near5 (build\$3 construct\$3 mold\$4 mould\$3) near10 (platform plate).ab.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 15:29
S39	11	S38 and S27	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 15:29
S40	6	("20010038168" "6722872" "7127309" "7261542" "8282380" "8827684").PN.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 15:57
S44	0	S40 and S5	US- PGPUB; USPAT;	OR	ON	2015/11/16 17:06

			USOCR			
S45	7148	(platform stage table plate) and (polyimide).ti,ab.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 17:08
S47	207	(platform stage table plate) with (polyimide).ti,ab.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 17:09
S48	0	("2013/0098068").URPN.	USPAT	OR	ON	2015/11/16: 17:11
S49	0	("2013/0098068").URPN.	USPAT	OR	ON	2015/11/16: 17:13
S50	1	"20060191271"	USPAT	OR	ON	2015/11/16: 17:35
S51	2	"20060191271"	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 17:35
S52	0	(platform stage table plate) with (coat\$3) with (polyimide) and S27	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 17:41
S53	43	(platform stage table plate) with (coat\$3) with (polyimide).ab.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 17:42
S54	0	("20010038168" "6722872" "7127309" "7261542" "8282380" "8827684").PN. and (platform stage table plate) and (polimide)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 17:44
S55	1	("20010038168" "6722872" "7127309" "7261542" "8282380" "8827684").PN. and (platform stage table plate) and (polyimide)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 17:44
S56	1	("20010038168" "6722872" "7127309" "7261542" "8282380" "8827684").PN. and (polyimide)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 17:46
S57	24	("20020195746" "20040175450" "20040232601" "20120059503" "20120059504" "20120092724" "20120105903" "20120113457" "20120113473" "4097566" "5192559" "5637175" "5730817" "6129872" "6841116").PN. OR ("8282380").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 18:19
S58	6847	B29C67/00\$.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 21:35
S59	371	B33Y3\$.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 21:35
S60	6891	S59 or S58	US-PGPUB; USPAT;	OR	ON	2015/11/16: 21:35

			USOCR			
S61	35	(thermal\$4 heat\$4) near5 (conductiv\$4) near10 (plate stage platform) and S60	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 21:35
S62	6853	B29C67/00\$.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:33
S63	372	B33Y3\$.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:33
S64	6897	S63 or S62	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:33
S65	858	(aluminum al steel brass ceramic glass alloys) near10 (plate stage platform) and S64	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:33
S66	773	(aluminum al steel brass ceramic glass alloys) near10 (plate platform) and S64	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:33
S67	621	(aluminum al steel brass ceramic glass alloys) near5 (plate platform) and S64	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:33
S68	127	(aluminum al steel brass ceramic glass alloys) near5 (platform) and S64	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:34
S69	50	(aluminum al steel brass alloys) near5 (platform) and S64	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:38
S70	19	(platform stage table plate) with (catridge)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 12:28
S71	1	(platform stage table plate) same (heat\$3 near5 catridge)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 12:30
S72	3642	(platform stage table plate) same (heat\$3 near5 catridge)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 12:31
S73	1671	(platform stage table plate) with (heat\$3 near5 catridge)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 12:31
S74	7	(platform stage table plate) with (heat\$3 near5 catridge) and S64	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 12:31
S75	28	(platform stage table plate) same	US-	OR	ON	2015/11/17

		(heat\$3 near5 cartridge) and S64	PGPUB; USPAT; USOCR			12:33
S76	21	S75 not S74	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 12:34
S77	16	(heat\$3 near5 cartridge) near5 (benefit adantage)	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 13:44
S78	28	(platform stage table plate) with (thermocouple) and S64	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 14:24
S79	35	(US-20130075575-\$ or US- 20070284731-\$ or US-20150306700-\$ or US-20150165687-\$ or US- 20150159007-\$ or US-20130327917-\$ or US-20130287934-\$ or US- 20130186558-\$ or US-20110256252-\$ or US-20110253035-\$ or US- 20070037509-\$ or US-20070026145-\$ or US-20150314373-\$ or US- 20130098068-\$ or US-20100316877-\$ or US-20060082708-\$ or US- 20040175450-\$ or US-20130341838-\$ or US-20130256953-\$ or US- 20100012630-\$ or US-20150174824-\$ or US-20110241947-\$ or US- 20100193998-\$ or US-20050275129-\$ or US-20120133083-\$ or US- 20100174392-\$).did. or (US-6627376-\$ or US-6096476-\$ or US-4143790-\$ or US-5837960-\$ or US-5025133-\$ or US- 5415219-\$ or US-5348693-\$ or US- 8282380-\$ or US-8119053-\$).did.	US- PGPUB; USPAT	OR	ON	2015/11/17 17:14
S80	180	(crews fasteners quick\$2release (vacuum near5 suction) magnets electromagnets) with (platform stage table plate) and S64	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 17:17
S81	2	(crews fasteners quick\$2release (vacuum near5 suction) magnets electromagnets) with (platform stage table plate) and S79	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 17:18
S82	21119	(plate stage platform) with (pattern\$3 text\$3 protrusions emboss\$3 abrad\$4 groov\$3) with (\$5meter)	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 18:21
S83	30	(plate stage platform) with (pattern\$3 text\$3 protrusions emboss\$3 abrad\$4 groov\$3) with (\$5meter) and S64	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 18:47
S84	4	(plate stage platform) with (pattern\$3 text\$3 protrusions emboss\$3 abrad\$4 groov\$3) with (nanometer nm micrometer) and S64	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 18:48
S85	1	14/574237.app.	US- PGPUB; USPAT;	OR	ON	2016/06/28 21:02

			USOCR			
S86	18	("20150174824" "6658314" "20130073073" "20130073073" "6850334" "4749347" "20140061974" "5141680" "20030206820" "20150145174" "20140191433" "6259962" "5866058" "20130095302" "20040173946" "20130098068" "20090152771" "5121329" "20120201960").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/28 21:05
S87	769	B29C67/0092.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/28 21:48
S88	3660	(Build\$3 print\$3 work\$3) near5 (plate platen bed platform stage) with (removable detachable changeable separable)	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/28 22:00
S89	8219	B29C67/00\$.cpc. or B33Y\$.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/28 22:02
S90	203	S88 and S89	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/28 22:02
S91	1857	(Build\$3 print\$3 work\$3) near5 (plate platen bed platform stage) near5 (removable detachable changeable separable)	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/28 22:02
S92	186	S90 and S91	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/28 22:02
S93	0	("2016/0167303").URPN.	USPAT	OR	ON	2016/06/28 22:02
S94	3660	(Build\$3 print\$3 work\$3) near5 (plate platen bed platform stage) with (removable detachable changeable separable)	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 13:13
S95	8219	B29C67/00\$.cpc. or B33Y\$.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 13:13
S96	203	S94 and S95	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 13:13
S97	16	S94 and S95 and (coat\$3 film\$3 cover\$3) with (polyimide)	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 13:14
S98	1	14/574237.app.	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 14:52
S99	379	(spray\$3 near3 coat\$3) with (Build\$3 print\$3 work\$3) near5 (plate platen bed	US-PGPUB;	OR	ON	2016/06/29 20:30

		platform stage)	USPAT; USOCR			
S100	8219	B29C67/00\$.cpc. or B33Y\$.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2016/06/29 20:30
S101	1	(spray\$3 near3 coat\$3) with (Build\$3 print\$3 work\$3) near5 (plate platen bed platform stage) and S100	US- PGPUB; USPAT; USOCR	OR	ON	2016/06/29 20:30
S102	43	(spray\$3 near3 coat\$3) with (polymer resin) with (Build\$3 print\$3 work\$3) near5 (plate platen bed platform stage)	US- PGPUB; USPAT; USOCR	OR	ON	2016/06/29 20:31
S103	15	(spray\$3 near3 coat\$3) with (plate platen bed platform stage) and S100	US- PGPUB; USPAT; USOCR	OR	ON	2016/06/29 20:36
S104	0	(nano\$2meter micro\$2meter milli\$2meter) near5 (pattern textur\$3 emboss\$3) with (surface) with (polymer resin) with (Build\$3 print\$3 work\$3) near5 (plate platen bed platform stage)	US- PGPUB; USPAT; USOCR	OR	ON	2016/06/29 20:49
S105	502	(pattern\$4 textur\$3 emboss\$3) with (surface) with (Build\$3 print\$3 work\$3) near5 (plate platen bed platform stage) same (adhes\$4 peel\$3)	US- PGPUB; USPAT; USOCR	OR	ON	2016/06/29 20:50
S106	246	(pattern\$4 textur\$3 emboss\$3) with (surface) with (Build\$3 print\$3 work\$3) near5 (plate platen bed platform stage) with (adhes\$4 peel\$3)	US- PGPUB; USPAT; USOCR	OR	ON	2016/06/29 20:50
S107	196	(pattern\$4 textur\$3 emboss\$3) with (surface) with (Build\$3 print\$3 work\$3) near3 (plate platen bed platform stage) with (adhes\$4 peel\$3)	US- PGPUB; USPAT; USOCR	OR	ON	2016/06/29 20:51
S108	2	(pattern\$4 textur\$3 emboss\$3) with (surface) with (Build\$3 print\$3 work\$3) near3 (plate platen bed platform stage) with (adhes\$4 peel\$3) and S100	US- PGPUB; USPAT; USOCR	OR	ON	2016/06/29 20:51
S109	29	(pattern\$4 textur\$3 emboss\$3) with (Build\$3 print\$3 work\$3) near3 (plate platen bed platform stage) same (adhes\$4 peel\$3) and S100	US- PGPUB; USPAT; USOCR	OR	ON	2016/06/29 20:53
S110	2	("2005/0275129").URPN.	USPAT	OR	ON	2016/06/29 21:09
S111	221	(pattern\$4 textur\$3 emboss\$3) with (Build\$3 print\$3 work\$3) near3 (plate platen bed platform stage) and S100	US- PGPUB; USPAT; USOCR	OR	ON	2016/06/29 21:14
S112	33	(grooves! projections! protrusions! ribs!) with (Build\$3 print\$3 work\$3) near3 (plate platen bed platform stage) and S100	US- PGPUB; USPAT; USOCR	OR	ON	2016/06/29 21:15
S113	0	("2012/0328726").URPN.	USPAT	OR	ON	2016/06/29 21:27
S114	23	(thermocouple) with (Build\$3 print\$3 work\$3) near3 (plate platen bed platform stage) and S100	US- PGPUB; USPAT;	OR	ON	2016/06/29 22:32

			USOCR			
S115	3	(thermocouples!) same (Build\$3 print\$3 work\$3) near3 (plate platen bed platform stage) and S100	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 22:34
S116	10	(thermocouples!) with (plate platen bed platform stage) and S100	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 22:34
S117	234	(sensors!) with (plate platen bed platform stage) and S100	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 22:36
S118	67	((therm\$3 heat\$3 temperature) near3 sensors!) with (plate platen bed platform stage) and S100	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 22:36
S119	43	(platform stage table plate) with (coat\$3) with (polyimide).ab.	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 22:52
S120	1572	(B29C67/0092 or B33Y30/00).cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 22:52
S121	105	(platform stage table base) same (plate) same (coat\$3 plat\$3) with ((resin \$4polymer \$4monomer \$5plastic) near5 (layer)) and ((rapid near3 prototyp\$3) (rapid near3 manufactur\$3) (additive near3 manufactur\$3) (3D near3 printing) (3-D near3 printing) (printing near 3D) (three\$1dimensional near3 printing) (S120 near2 D near3 print\$3) (three-d near3 print\$3) (three-dimensional near3 print\$3) (three-d near3 print\$3) (three near3 dimensional near3 print\$3))	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 22:52
S122	281	((heatab\$3 heat\$4 thermal\$3) with (platform stage) with (plate)).ti,ab.	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 22:53
S123	11	(cartridges!) with (Build\$3 print\$3 work\$3) near3 (plate platen bed platform stage) and S100	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 22:55
S124	1	((heat thermal\$3) near3 cartridges!) and (Build\$3 print\$3 work\$3) near3 (plate platen bed platform stage) and S100	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 22:56
S125	9	((heat\$3 heatab\$3 thermal\$3 temperature) near3 cartridges!) and (Build\$3 print\$3 work\$3) near3 (plate platen bed platform stage) and S100	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 22:57
S126	13	((heat\$3 heatab\$3 thermal\$3 temperature) near3 cartridges!) and (plate platen bed platform stage) and S100	US-PGPUB; USPAT; USOCR	OR	ON	2016/06/29 22:58

EAST Search History (Interference)

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<i>Search Notes</i> 	Application/Control No. 14574237	Applicant(s)/Patent Under Reexamination REESE ET AL.
	Examiner JERZI H MORENO HERNANDEZ	Art Unit 1744

CPC- SEARCHED		
Symbol	Date	Examiner
B29C67/0092;B33Y30/00	11/17/2015	JHMH
B29K2879/085;B29L2009/005	11/17/2015	JHMH
Updated search	6/30/2016	JHMH

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
inventor name searched	11/17/2015	JHMH
see EAST search history attached	11/17/2015	JHMH
See updated EAST search history attached	6/30/2016	JHMH

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

/J.H.M./ Examiner.Art Unit 1744	
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/574,237	12/17/2014	Riley Reese	000285/00630

CONFIRMATION NO. 3704

94544
Cittone & Chinta LLP
11 Broadway, Suite 615
New York, NY 10004

PUBLICATION NOTICE



Title: HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS

Publication No. US-2016-0176118-A1

Publication Date: 06/23/2016

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

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Customer No. 94544

Docket No. 000285/00630

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor : Riley Reese Conf. No.3704
Serial No. : 14/574,237
Filed : 12/17/2014
For : HEATED BUILD PLATFORM AND SYSTEM FOR THREE
DIMENSIONAL PRINTING METHODS
Group Art Unit : 1744
Examiner : Moreno Hernandez, Jerzi H.

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AND RESPONSE TO NON-FINAL OFFICE ACTION

A Response to the Non Final Office Action dated November 30, 2015 is due on
February 29, 2016. This response is thus timely filed.

Amendments to the claims begin on page 2 of this paper.

Remarks begin on page 5 of this paper.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listing of the claims in the application.

Listing of claims:

1. (Currently Amended) A build apparatus working as a base for printing 3D objects of ~~high temperature~~ thermoplastics employing additive manufacturing methods, the apparatus comprising:
 - a build platform with a temperature control means for heating the build platform;
 - a thin thermally conductive removable plate having a build surface ~~secured~~ meant to be removably placed on top of the build platform,
 - a ~~high temperature~~ polymer coating ~~evenly applied~~ coated over the surface of the removable plate for maintaining adhesion between the 3D object and the build surface throughout the printing; and
 - where the surface of the ~~high temperature~~ polymer coating is treated ~~or roughened~~ to improve adhesion between the 3D object and the build surface; ~~and~~
 - ~~where the removable plate possesses a relatively low coefficient of thermal expansion such that the removable plate does not deform or deform relatively less on heating.~~
2. (Canceled)
3. (Currently Amended) The build apparatus as claimed in claim 1, wherein the ~~high temperature~~ polymer coating ~~is~~ is a polyimide.
4. (Canceled)
5. (Currently Amended) The build apparatus claimed in claim 1, wherein the temperature control means to heat the build platform comprises heater cartridges that are spaced

- ~~within~~ along the surface of the build platform, ~~and heating pads attached to the build platform.~~
6. (Currently Amended) The build apparatus claimed in claim 1, wherein the build platform ~~may have~~ comprises thermocouples situated at one or several locations to provide feedback to a controller for maintaining temperature set points ~~throughout a build.~~
 7. (Currently Amended) The build apparatus claimed in claim 1, wherein ceramic, or other high temperature dielectric is used to insulate the build platform ~~and protect the a build platform support from~~ external means.
 8. (Currently Amended) The build apparatus as claimed in claim 1, wherein the build platform, the removable plate, and the ~~high-temperature~~ polymer coating are able to withstand high temperature ranging between 150 degree Celsius and 300 degree Celsius.
 9. (Original) The build apparatus claimed in claim 1, wherein the material for the removable plate may be aluminum, steel, brass, ceramic, glass, or alloys similar with a low coefficient of thermal expansion (CTE).
 10. (Original) The build apparatus claimed in claim 1, wherein the material for the build platform may be aluminum, steel, brass, ceramic, glass, or alloys with a low coefficient of thermal expansion (CTE).
 11. (Original) The build apparatus claimed in claim 1, wherein the removable plate thickness ranges from 0.025-0.5” and wherein the thickness is selected depending on the flexural character of the material.
 12. (Canceled)
 13. (Currently Amended) The build apparatus claimed in claim 1, wherein the ~~high temperature~~ polymer coating is spray coated over the removable plate. ~~and imparts~~

~~adherence properties both to the bottom thermoplastic layer of a 3D object and the removable plate.~~

14. (Canceled)

15. (Currently Amended) The build apparatus claimed in claim 1, wherein the thickness of the ~~high temperature~~ polymer coating may range from 0.001” to 0.1”.

16. (Canceled)

17. (Currently Amended) The build apparatus claimed in claim 1, wherein ~~the surface treatment of the high temperature polymer coating imparts a regular or irregular pattern to the coating, where the surface of the high temperature polymer coating is roughened~~ treated at the nano-, micro-, or milli- meter scale to increase polymer adhesion to the ~~high temperature polymer~~ polyimide coated surface.

18. (Currently Amended) The build apparatus claimed in claim 1, wherein the removable plate is flexible in nature, where the flexibility allows for easier dissociation between the 3D object and the removable plate upon cooling and reduces the possibility of damage to the ~~high temperature~~ polymer coating or the 3D object during object removal.

REMARKS

Claims 1 to 18 are subject to examination by the Examiner. Claims 1, 3, 5-8, 13, 15, 17-18 have been amended and claims 2, 4, 12, 14 and 16 have been cancelled. Support for the amendments can be found throughout the specification. More specifically:

Claim 1 has been amended to include “removable plate having a build surface meant to be removably placed on top of the build platform”; and as shown above. Support for this amendment may be found, *inter alia*, in Paragraphs [008], [009], [0019], [0021], [0022], [0024], [0026], [0029], [0030], and [0033] of the specification. Applicant avers that this is a distinguishing point between the present invention and the cited art, the inclusion thereof makes the claims as amended allowable and an early notice of allowance is respectfully requested.

Claims 3, 5-8 and 13, 15, 17-18 have been amended to more clearly disclose the scope of the present invention; no new matter has been added.

Response to Examiner Note

In response to the Office Action’s discussion of claiming either structurally or functionally, Applicant notes and submits that MPEP §§ 2114 R1- 2115 R2 are clear that features of an apparatus may be recited either structurally or functionally. For establishing that a functional limitation is an inherent characteristic of prior art, it has to be explained that the prior art structure inherently possess the functionally-defined limitation of the claimed apparatus. In this regard, Applicant submits that the functional limitations of claim 1, such as “removable plate meant to be removably placed on the build platform”, are not an inherent characteristic of the prior art. For this Applicant relies on submission made hereinafter under heading “35 USC 103”. Further Applicant wishes to submit that the limitation “is treated or roughened” is a structural limitation of the element ‘polymer coating’ and therefore, requests consideration of this as a structural limitation.

Objection to Drawings

Applicant submits that the component “polymer coated surface” is disclosed in FIG. 1 with reference numeral 106. Further claim 5 has been amended and claim 12 has been cancelled to overcome the Office Action’s objection. Applicant respectfully suggests that with these amendments the objections have been overcome and requests withdrawal of the objection.

Objections to Claims

The Examiner has objected to claim 3 because of certain informalities. Applicant submits that the informalities in the claim have been corrected and respectfully requests withdrawal of the objection.

35 U.S.C. § 112

The Office Action has rejected claims 1-18 under 35 U.S.C 112(b), as being indefinite for failing to particularly point out and distinctly claim the subject matter. Applicant respectfully submits that claims have been amended to remove relative terms such as “high temperature”. Further, claim 7 has been amended to provide sufficient antecedent basis.

The Office Action has also rejected claims 2, 4, 13, 14 and 16 under 35 U.S.C. 112 (d) or pre-AIA 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of claim upon which it depends. Claims 2, 4, 14 and 16 have been canceled, thereby removing the objections and claim 13 has been amended to overcome the objection there. Amended claim 13 now recites “The build apparatus as claimed in claim 1, wherein the polymer coating is spray coated over the removable plate” so as to now properly limit the structural feature of claim 1. Claim 13 should now be a proper dependent claim.

With the amendments to the claims, Applicant believes that it has overcome the section 112 rejections and respectfully requests withdrawal of those rejections.

35 U.S.C. § 103

The Office Action has rejected claims 1-18 under 35 U.S.C 103 as being unpatentable over various combinations of U.S. Pat. No. 8282380 (“Pax”) in view of U.S. Pat. Pub. No. 2007/0037509 (“Renz”), U.S. Pat. Pub. No. 2012/0133083 (“Zenere”), U.S. Pat. No. 8119053 (“Bedal”), U.S. Pat. Pub. No. 2010/0174392 (“Fink”), U.S. Pat. Pub. No. 2013/0287934 (“Ramsundar”) and U.S. Pat. Pub. No. 2006/0198918 (“Koyagi”).

In order for a claim to be rendered obvious the cited combination of prior art must teach or suggest all of the claim limitations. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991) MPEP §§ 2142 and 2143. To this end, it is necessary, *inter alia*, to determine (i) the scope of the prior art and (ii) the differences between the claimed subject matter and that of the prior art. *Graham v. John Deere & Co.*, 383 U.S. 1, 17, 18 (1966). Furthermore, a *prima facie* finding of obviousness cannot be established when the “improvement is more than the predictable use of prior art elements according to their established functions.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739 (2007). A reasonable expectation of success is required. MPEP § 2143.02. Lastly, unexpected, i.e. surprising, results rebut a *prima facie* case of obviousness. MPEP § 2144.09. Thus, for this/these reasons, Applicant hereby traverses each of the §103 rejections described below.

Applicant has amended independent claim 1 to read as follows:

A build apparatus working as a base for printing 3D objects of thermoplastics employing additive manufacturing methods, the apparatus comprising:

a build platform with a temperature control means for heating the build platform;

a thin thermally conductive removable plate having a build surface meant to be removably placed on top of the build platform,

a polymer coating coated over the surface of the removable plate for maintaining adhesion between the 3D object and the build surface throughout the printing; and

where the surface of the polymer coating is treated to improve adhesion between the 3D object and the build surface.

Applicant respectfully submits that amended claim 1 discloses a build apparatus for printing 3D printing of thermoplastic material. The build apparatus comprises a build platform with a temperature controlling means for heating the build platform. A thin conductive removable plate having a build surface is placed on the top of the build platform. The thin conductive plate is coated with a polymer coating. The polymer coating is meant for providing adhesion between the print object and the build surface. The polymer coating can be treated or roughened to improve the adhesion between the 3D print object and the build surface.

As can be seen from claim 1, the removable plate is coated with a coating of polymer, such as polyimide. The coating is the inherent structural component of the apparatus and it is not a temporarily applied external material.

Now considering claim 1 in view of citer reference “Pax”, it can be seen that “Pax” discloses a method for providing sequential builds using a conveyor. The conveyor includes a detachable layer of material such as a mesh material, a polyamide, a polyethylene terephthalate (commercially available in bi-axial form as MYLAR), a polyimide film (commercially available as KAPTON) that have a thickness of one to three thousandths of an inch and may move from left to right into a working volume for a build. Applicant respectfully submits that “Pax” fails to disclose a build apparatus having a conductive removable plate that can be removed on completion of printing process in order to remove the printed object. Furthermore, “Pax” fails to disclose a polymer coating permanently coated on the surface of the removable plate. “Pax”, in col. 3, line 6 to 10, discloses that the sheet 118 may be formed of a polyimide film that is

commercially available as ‘KAPTON tape’. This means that a film of Kapton tape is applied over the conveyor¹⁰⁴, whereas in the claim 1 as amended, the removable plate has a surface coating of polyimide. The use of polyimide surface coating over the plate provides numerous advantage over conventionally used Kapton tape in the prior art. Kapton tape does not meet thermal tolerance of high temperature (in range of 150 degree Celsius to 300 degree Celsius) for certain thermoplastic materials such as PEEK, PEI, PPSU, PAI, SRP etc. Persons having ordinary skill in the art will understand the further advantage of using a surface coated polyimide over applying Kapton tape is that using tape results in trapping tiny debris and air bubbles between the tape and the conveyor surface. Upon heating a tape-covered surface, the air gaps expand creating an uneven printing surface. Furthermore, the adhesive used with the Kapton tape tends to burn off under high temperature (150 to 300 degree Celsius) releasing fumes, damaging the coating and requiring re-taping prior to the next use. In sharp contrast, the surface coated polyimide coating of the present invention does not wear away and thus does not need to be replaced after every print of a 3D object. Another disadvantage of Kapton tape of the cited reference over the surface coated polyimide coating of the present invention is that, at elevated temperatures the bottom layer of the Kapton tape can permanently adhere to the printed object damaging the printed object. It is important to note that the coating and removable plate of the present invention are reusable (unlike other cited art build plates). Multiple, successive layers of coating, in the present invention, can be applied without reducing the adhesion strength needed for the removable plate or the 3D print object.

In view of the above amendments and remarks, it can be seen that “Pax” fails to disclose on its own the invention as claimed in claim 1.

Combining the teachings of Renz, as suggested in the Office Action, to the teachings provided by Pax, will be seen to also not teach the present invention as now claimed. It will be

seen that Renz discloses a method of manufacturing a molding through laser melting and like processes, wherein a model of a molding is built from a powdered material, according to CAD data(as Renz is understood, the method uses a build platform and a base plate for application of a powder layer for the manufacture of moldings), where the base plate is detachable in a manner and the build platform is heated, with a temperature ranges from 250 to 600 degree Celsius, for adjustment of the position of the build platform. Renz, however, fails to teach a conductive removable plate that can be removed on completion of printing process in order to remove the printed object such as now disclosed in the claims as amended. Furthermore, Renz fails to teach a polymer-coating on the surface of a removable plate.

With respect to the addition of the remaining cited art references as suggested in the Office Action, a person skilled in art applying the teaching of Zenere to Pax and Renz would not arrive at the claims of the present invention as now claimed. It can be seen that Zenere teaches a stereolithography machine, having a plate made of aluminum, designed to house a container of fluid substance; however Zenere fails to teach a thermally conductive removable plate made of either aluminum, steel, brass, ceramic, glass, or alloys having similar properties with a low coefficient of thermal expansion that can withstand high temperatures, such as temperatures ranges from 150 to 300 degrees Celsius, coated with polymers such as polyimide which is safely secured over a build platform for allowing quick installation and release of the plate, and also for allowing cooling of a printed 3D object separately while simultaneously allowing printing of a subsequent object. As such, no combination of the cited references would be considered by a person having ordinary skill in the art to teach the invention as now claimed.

Applicant submits that as the independent claim of the present invention is not made obvious by the combinations suggested, the dependent claims which include all the limitation of independent claim 1, cannot be obvious either.

Having addressed all outstanding rejections, applicant respectfully submits that this application is in condition for allowance.

No additional fees are believed to be necessary in connection with the filing of this response save the fees discussed herein. However, if any additional fees are necessary, applicants hereby authorize such fees to be charged to Deposit Account 506377.

Respectfully submitted,

Dated: February 22, 2016

/Henry J. Cittone/

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Attorney for Applicant

Electronic Acknowledgement Receipt	
EFS ID:	24987208
Application Number:	14574237
International Application Number:	
Confirmation Number:	3704
Title of Invention:	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS
First Named Inventor/Applicant Name:	Riley Reese
Customer Number:	94544
Filer:	Henry Joseph Cittone.
Filer Authorized By:	
Attorney Docket Number:	000285/00630
Receipt Date:	22-FEB-2016
Filing Date:	17-DEC-2014
Time Stamp:	19:27:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	7-Resp-FOA-285-630.pdf	187960 bfb19e35fa996a174095c852ac12f06e49fb00ef	no	11

Warnings:

Information:

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 14/574,237		Filing Date 12/17/2014		☐ To be Mailed				
ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO													
APPLICATION AS FILED – PART I													
(Column 1)			(Column 2)										
FOR		NUMBER FILED		NUMBER EXTRA		RATE (\$)		FEE (\$)					
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A		N/A		N/A							
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A		N/A		N/A							
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A		N/A		N/A							
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =		*		X \$ =							
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =		*		X \$ =							
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).											
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))													
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL							
APPLICATION AS AMENDED – PART II													
(Column 1)			(Column 2)			(Column 3)							
AMENDMENT	02/22/2016		CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		* 13		Minus	** 20		= 0		X \$40 =		0	
	Independent (37 CFR 1.16(h))		* 1		Minus	***3		= 0		X \$210 =		0	
	☐ Application Size Fee (37 CFR 1.16(s))												
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))												
	TOTAL ADD'L FEE											0	
(Column 1)			(Column 2)			(Column 3)							
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		*		Minus	**		=		X \$ =			
	Independent (37 CFR 1.16(h))		*		Minus	***		=		X \$ =			
	☐ Application Size Fee (37 CFR 1.16(s))												
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))												
	TOTAL ADD'L FEE												
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.													

LIE
/MAMYE WAGSTAFF/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/574,237	12/17/2014	Riley Reese	000285/00630	3704
94544	7590	11/30/2015		
Cittone & Chinta LLP 11 Broadway, Suite 615 New York, NY 10004			EXAMINER MORENO HERNANDEZ, JERZI H	
			ART UNIT 1744	PAPER NUMBER
			NOTIFICATION DATE 11/30/2015	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

hcittone@cittonechinta.com
pchinta@cittonechinta.com
reporting@cittonechinta.com

Office Action Summary	Application No. 14/574,237	Applicant(s) REESE ET AL.	
	Examiner JERZI H. MORENO HERNANDEZ	Art Unit 1744	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 12/17/2014.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☒ Claim(s) 1-18 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☒ Claim(s) 1-18 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10) ☐ The specification is objected to by the Examiner.

11) ☒ The drawing(s) filed on 12/17/2014 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some** c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date 12/17/2014.

3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Note

Examiner wishes to point out to applicant that claim(s) 1-18 is/are directed towards an apparatus and as such will be examined under the following conditions. The material worked upon or the process of using the apparatus is viewed as recitation of intended use and is given patentable weight only to the extent that structure is added to the claimed apparatus (Please see MPEP § 2114 R1-2115 R2 for further details). For an apparatuses, the claim limitations will define structural limitations (See MPEP 2114-2115). For example, the recitations "working as a base for printing 3D objects of high temperature thermoplastics employing additive manufacturing methods", "for maintaining adhesion between the 3D object and the build surface throughout the printing", and "is treated .. to improve adhesion between the 3D object and the build surface;" of claim 1, are considered to be intended use recitations.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed "**surface ... of coating ... roughened at the nano-, micro-, or milli- meter scale**" "**heating pads**" "**guiding legs ... or fasteners ... or magnets**" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Objections

Claim(s) 3 is/are objected to because of the following informalities:

Claim 3, "polymer coating I is" should be changed to --polymer coating is--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of 35 U.S.C. 112(b):

(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

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The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-18 rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph,
as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Claim 1 recites "high temperature thermoplastics" which is considered to be indefinite because the applicant does not provide a clear definition of "high temperature thermoplastics" in the instant specification (it only provides examples, P0003) and "high temperature" is a relative term. Thus, the scope of this limitation is unclear. Claim 1 also recites the limitation "high temperature polymer" which is considered to be indefinite because the applicant does not provide a clear definition of a "high temperature polymer" in the instant specification (it only provides examples, P0024) and "high temperature" is a relative term. Thus, the scope of this limitation is unclear.

Claim 7 recites "the build platform support". There is insufficient antecedent basis for this limitation in the claim because claim 7 depends from Claim 1 and "the build platform support" is not introduced in claim 1.

Claim(s) 2-18 is/are rejected as being dependent from claim 1 and therefor including all the limitation thereof.

The following is a quotation of 35 U.S.C. 112(d):

(d) REFERENCE IN DEPENDENT FORMS.—Subject to subsection (e), a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), fourth paragraph:

Subject to the [fifth paragraph of 35 U.S.C. 112 (pre-AIA)], a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

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Claims 2, 4, 13-14, and 16 are rejected under 35 U.S.C. 112(d) or pre-AIA 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends.

Claim 2 fails to further limit Claim 1 because it fails to recite a structural limitation/feature to further limit claim 1. The material worked upon and the process of using the apparatus are viewed as recitation of intended use and are given no patentable weight (Please see MPEP 2114 R1-2115 R2 for further details). In this case, all the limitations of claim 2 are considered to be merely recitations of intended use.

Claim 4 also fails to further limit Claim 1 because it fails to recite a structural limitation/feature to further limit claim 1.

Claim 13 also fails to further limit Claim 1 because it fails to recite a structural limitation/feature to further limit claim 1.

Claim 14 also fails to further limit Claim 1 because it fails to recite a structural limitation/feature to further limit claim 1.

Claim 16 also fails to further limit Claim 1 because it fails to recite a structural limitation/feature to further limit claim 1.

Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

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A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1-4, 8-11, and 13-18 is/are rejected under 35 U.S.C. 103 as being unpatentable over Pax (US 8282380 –of record) in view of Renz (US 2007/0037509) and Zenere (US 2012/0133083).

Regarding Claims 1-4 and 9-10, and 13-14 and 16, Pax teaches a build apparatus (F1) as a base for printing 3D objects (112) of high temperature thermoplastics (C3, L56-57; C3, L62) employing additive manufacturing methods (C2, L24, C2, L10), the apparatus comprising:

a build platform (102) with a temperature control means capable of heating the build platform (102 with a thermal element 130 and connected to a controller 110, C2, L22-27; C2, L31-35);

a high temperature polymer coating (layer/sheet 118 which can be made of polyimide, C3, L6-10; **polyimide** is well known in the art for its high heat-resistance) evenly applied over (covering) the surface of the platform (it appears from the F1 that the thickness of 118 is uniform and even; using the broadest reasonable interpretation, coating has been interpreted as a covering layer) and capable of aiding adhesion between the 3D object and the build surface throughout the printing and wherein the surface of the high temperature polymer coating is treated (chemically treated) or roughened (abraded or textured) to improve adhesion between the 3D object and the build surface (C3, L18-28).

Pax fails to teach a thin thermally conductive removable plate.

In the same field of endeavor, building apparatuses comprising platforms, Renz teaches a build apparatus (F1-2) comprising a build platform (22) and plate (28), wherein the build platform is heatable (P0004; at very high temperatures), wherein the plate is removable (“detachable”, P0031, P0007), and wherein the plate is thin (as seen from the Figure1-2, 28 is thinner than 22). Renz also recognizes the importance of maintaining “adhesion” between the build object and the plate/platform (P0034, P0054) and the problem of thermal expansion of the platform and base plate at high heating temperatures (P0004, P0007).

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It would have been obvious to one with ordinary skill in art at the time the invention was filed to modify the apparatus of Pax in view of Renz by providing a thin removable plate to the platform for the purpose(s) of easier maintenance (e.g. cleaning, repairing) and/or for facilitating the demolding/detaching of the build object.

The combination is silent to the type of material of the plate and its properties (i.e. thermally conductive and low thermal coefficient of expansion).

In the same field of endeavor, building apparatuses comprising platforms, Zenere teaches a build apparatus (F1) comprising a platform with a plate (2), wherein the plate is made of **aluminum** since aluminum a good mechanical resistance and high heat conductivity (P0045).

Since Renz teaches the thermal expansion is a problem in plates and platforms and efficient heat transfer would have been very desirable, it would have been obvious to one with ordinary skill in art at the time the invention was filed to modify the combination in view of Zenere by making the plate from aluminum since aluminum is a very suitable material as it has a good strength, high thermally conductivity and low thermal coefficient of expansion. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was filed to use materials having a high thermally conductivity and low thermal coefficient of expansion such as aluminum for the plate and platform for the purpose(s) of achieving fast/efficient heat transfer rates while minimizing thermal expansions, since it has been held to be within the ordinary skill of worker in the art to select a known material on the basis of its suitability for the intended use. One would have been motivated to use aluminum as the material for plate and the platform for the purpose of achieving fast/efficient heat transfer rates while minimizing thermal expansion. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). As evidenced by Zenere (US 2005/0275129) or Sambu (US 2005/0275129), the usage of aluminum as the material for platforms is desirable and well known (Zenere, P0045, F1,) or (Sambu, P0023, Claim 25-27, F3c-4).

Regarding Claim 8, the combination further teaches wherein the build platform, the removable plate, and the high temperature polymer coating are able to withstand high temperatures ranging between 150 degrees Celsius to 300 degrees Celsius (aluminum and polyimide can withstand the claimed range temperature; See also Renz P0004).

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Regarding Claim 11, the combination discloses the claimed invention except for wherein the removable plate thickness ranges from 0.025-0.5" and wherein the thickness is selected depending on the flexural character of the material. Nevertheless, it would have been obvious to one having ordinary skill in the art at the time the invention was filed to make the removable plate thickness from 0.025-0.5", since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. One would have been motivated to make the removable plate thickness from 0.025-0.5" for the purpose of providing flexural capabilities to the plate while maximizing heat transfer and/or of reducing cost. It is well known that thickness affects the flexural and heat transfer properties of materials. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

Regarding Claim 15, the combination discloses the claimed invention except for wherein the thickness of the high temperature polymer coating may range from 0.001" to 0.1".

Nevertheless, it would have been obvious to one having ordinary skill in the art at the time the invention was filed to make the thickness of the high temperature polymer coating from 0.001" to 0.1 since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. One would have been motivated to make the thickness of the high temperature polymer coating from 0.001" to 0.1 for the purpose of providing flexural capabilities to the coating while maximizing heat transfer and/or of reducing cost. It is well known that thickness affects the flexural and heat transfer properties of materials. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

Regarding Claim 17, the combination discloses the claimed invention except for wherein the surface of the high temperature polymer coating is roughened at the nano-, micro-, or milli- meter scale.

Nevertheless, it would have been obvious to one having ordinary skill in the art at the time the invention was filed to roughened/textured the high temperature polymer coating at the nano-, micro-, or milli- meter scale since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. One would have been motivated to roughened/textured the high temperature polymer coating at the nano-, micro-, or milli- meter scale for the purpose of increasing the roughness which increases friction which increases adhesion by preventing sliding and at the same time

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increasing air spaces which facilitates demolding. It is well known that roughness affects friction and prevents sliding and creates air spaces. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

Regarding Claim 18, the combination fails to explicitly disclose wherein the removable plate is flexible in nature.

Nevertheless, the combination teaches the claimed thickness and material of the removable plate; thus, the taught removable plate is considered to be flexible in nature.

In addition, as evidenced by Scott (US 2011/0241947, P0014, P0016, P0047, P0070) and Teulet (US 2013/0256953, P0039-0040) it is well known that flexible materials facilitate adhesion and/or demolding/detaching.

Claim 5 is/are rejected under 35 U.S.C. 103 as being unpatentable over Pax (US 8282380 – of record) in view of Renz (US 2007/0037509) and Zenere (US 2012/0133083) as applied to claim 1 above, and further in view of Bedal (US 8119053).

Regarding Claims 5, Pax further teaches that any type of heating elements capable of providing thermoelectric heating can be used (C2, L25-27) or other types can be used (C5, L58-61).

The combination fails to teach heater cartridges and heating pads.

In the same field of endeavor, building apparatuses comprising platforms, Bedal teaches a build apparatus (F3) comprising a platform (240) and heating pads (241A and 241B) attached to the platform for the purpose(s) of heating the platform better (e.g. achieving high temperatures while reducing temperature gradients, C8, L57-60, C8, L64-C9, L2).

It would have been obvious to one with ordinary skill in art at the time the invention was filed to modify the apparatus of the combination in view of Bedal by attaching heating pads to the platform for the purpose(s) of achieving high temperatures while reducing temperature gradients.

Bedal further teaches the usage of cartridge heaters (802) as a heating element within a drum (C5, L62-65; C9, L11-120).

Since Bedal teaches cartridge heaters as heating elements and it is well known that cartridge heaters are a type of thermoelectric heating elements and are desirable to use because they are compact and have a high watt density, it would also have been obvious to one with ordinary skill in art at the time

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the invention was filed to modify the apparatus of the combination in view of Bedal by using heater cartridges as the heating elements and distributing them within the build platform for the purpose(s) of improving heating since heater cartridges are compact and efficient as they are capable of dissipating heat uniformly and efficiently.

Claim 6 is/are rejected under 35 U.S.C. 103 as being unpatentable over Pax (US 8282380 – of record) in view of Renz (US 2007/0037509) and Zenere (US 2012/0133083) as applied to claim 1 above, and further in view of Fink (US 2010/0174392).

Regarding Claim 6, Pax further teaches temperature sensors (thermistor) capable of sensing the surface temperature of the build platform and connected to the controller (Claim 15, C5, L28-34; C5, L20) and Renz also teaches sensors for monitoring temperature of the platform (Claim 14).

The combination fails to teach thermocouples.

In the same field of endeavor, building apparatuses comprising platforms, Fink teaches a build apparatus (F4a-c) comprising a platform (84) and using an aluminum plate having a plurality of thermocouples for the purpose of monitoring and recording temperature at different locations on the aluminum plate (P0026) and detecting thermal gradients (P0061).

Since it is well known that thermocouples are temperature sensors and have the capability of working at elevated temperatures more accurately than thermistors, it would have been obvious to one with ordinary skill in art at the time the invention was filed to modify the apparatus of the combination in view of Fink by replacing thermistors for thermocouples for the purpose of improving the accuracy of temperature monitoring/controlling, especially at high temperatures.

Claim 7 is/are rejected under 35 U.S.C. 103 as being unpatentable over Pax (US 8282380 – of record) in view of Renz (US 2007/0037509) and Zenere (US 2012/0133083) as applied to claim 1 above, and further in view of Ramsundar (US 2013/0287934).

Regarding Claim 7, the combination fails to teach an insulation layer configured to protect a support structure that supports the platform from heat.

In the same field of endeavor, building apparatuses comprising platforms, Ramsundar teaches a build apparatus (F1-3) comprising a platform comprising a table (21), an insulated pad (21), and a

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heatable plate (28) arranged so that 21 is capable of insulating/protecting table 21 from the heat of the heatable plate (P0048-49).

It would have been obvious to one with ordinary skill in art at the time the invention was filed to modify the apparatus of the combination in view of Ramsundar by providing an insulated layer between the heatable platform and a support structure supporting the heatable platform for the purpose(s) of protecting from the heat and increasing the lifetime of the support structure.

The combination fails to teach ceramic or dielectric material as the material for the insulating pad.

As evidenced by Takahashi (US 2013/0098068) or Crump (US 2010/0193998), ceramic is a well-known and suitable thermal insulating material (Takahashi, P0066, Claim 4, F1; Crump, P0019, P0055, P0024, P0074).

It would have been obvious to one having ordinary skill in the art at the time the invention was filed to use ceramic for the material of the thermal insulation pad, since it has been held to be within the ordinary skill of worker in the art to select a known material on the basis of its suitability for the intended use. One would have been motivated to use ceramic for the material of the thermal insulation pad as ceramic is a well-known and suitable thermal insulating material as it is a heat-resistant material (can withstand elevated temperatures) and has low-thermal expansion coefficient. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Claim 12 is/are rejected under 35 U.S.C. 103 as being unpatentable over Pax (US 8282380 – of record) in view of Renz (US 2007/0037509) and Zenere (US 2012/0133083) as applied to claim 1 above, and further in view of Koyagi (US 2006/0198918).

The combination fails to teach the type of connection between the platform and the “detachable” plate.

In the same field of endeavor, building apparatuses comprising platforms, Koyagi teaches a build apparatus (F1-2) comprising a platform comprising a stage (52) and a molding base (plate, 51) and using vacuum suction (91) to configured to attach and detach 51 from 52 (P0053) or other means (P0055).

It would have been obvious to one with ordinary skill in art at the time the invention was filed to modify the apparatus of the combination in view of Koyagi by providing a suction part configured to attach

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and detach the plate from platform via vacuum suction for the purpose(s) of attaching and detaching the plate from platform quickly and easily.

Conclusion

For additional prior art of record and not relied upon that is considered to be pertinent to applicant's disclosure see Notice of References Cited PTOL 892.

Teulet (US 2013/0256953) teaches a build apparatus (F1) comprising a platform with a plate (2), wherein the plate is made of a rigid material which has a specific thermal conductivity coefficient and expansion coefficient (P0003).

Sambu (US 2005/0275129) teaches a build apparatus (F3c-4) comprising coated and textured aluminum platforms, wherein the coating is a polymer (P0023, claim 24-27).

Scott (US 2011/0241947) teaches a build apparatus (F1-2) comprising a coated platform (40) with a flexible material (110, P0014, P0016, P0047, P0070).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JERZI H. MORENO HERNANDEZ whose telephone number is (571)272-0625. The examiner can normally be reached on Monday-Friday: 8AM - 5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, YOGENDRA GUPTA can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/JERZI H MORENO HERNANDEZ/

Examiner, Art Unit 1744

/ALISON HINDENLANG/
Primary Examiner, Art Unit 1744

Notice of References Cited	Application/Control No. 14/574,237	Applicant(s)/Patent Under Reexamination REESE ET AL.	
	Examiner JERZI H. MORENO	Art Unit 1744	Page 1 of 2

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*	C	US-2007/0037509 A1	02-2007	Renz; Bernd	B22F3/003	454/354
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*	E	US-2010/0174392 A1	07-2010	Fink; Jeffrey E.	B29C67/0077	700/104
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	Examiner JERZI H. MORENO	Art Unit 1744	Page 2 of 2

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	E	US-				
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	Examiner JERZI H MORENO HERNANDEZ	Art Unit 1744

CPC- SEARCHED		
Symbol	Date	Examiner
B29C67/0092;B33Y30/00	11/17/2015	JHMH
B29K2879/085;B29L2009/005	11/17/2015	JHMH

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US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
inventor name searched	11/17/2015	JHMH
see EAST search history attached	11/17/2015	JHMH

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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	Filing Date		2014-12-17	
	First Named Inventor	Riley Reese		
	Art Unit	TBA		
	Examiner Name	TBA		
	Attorney Docket Number	00285/00630		

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Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	
	1	7127309	B2	2006-10-24	Stratasys, Inc.	Claim 1, abstract, Fig. 1 with explanation	
	2	8282380	B2	2012-10-09	Makerbot Industries	Abstract, Fig. 1 with explanation	
	3	6722872	B1	2004-04-20	Stratasys, Inc.	Abstract, Fig. 9 with explanation	
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	5	7261542	B2	2007-08-28	Desktop Factory, Inc.	Fig 8D, Summary	
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(Not for submission under 37 CFR 1.99)

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Filing Date	2014-12-17
First Named Inventor	Riley Reese
Art Unit	TBA
Examiner Name	TBA
Attorney Docket Number	00285/00630

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Application Number	14574237
Filing Date	2014-12-17
First Named Inventor	Riley Reese
Art Unit	TBA
Examiner Name	TBA
Attorney Docket Number	00285/00630

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Henry J. Cittone/	Date (YYYY-MM-DD)	2014-12-17
Name/Print	Henry J. Cittone	Registration Number	57206

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	0	14/574237.app.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:17
S2	1	(B29O67/0092 or B33Y30/00).cpc. and (B29K2879/085 or B29L2009/005).cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:19
S3	1033	(B29O67/0092 or B33Y30/00).cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:19
S4	290	(B29K2879/085 or B29L2009/005).cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:20
S5	12318	(platform stage table base) same (plate) same ((resin \$4polymer \$4monomer \$5plastic) near5 (layer))	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:26
S6	7338	(platform stage table base) same (plate) same (coat\$3 plat\$3) with ((resin \$4polymer \$4monomer \$5plastic) near5 (layer))	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:28
S7	99	(platform stage table base) same (plate) same (coat\$3 plat\$3) with ((resin \$4polymer \$4monomer \$5plastic) near5 (layer)) and ((rapid near3 prototyp\$3) (rapid near3 manufactur\$3) (additive near3 manufactur\$3) (3D near3 printing) (3-D near3 printing) (printing near 3D) (three\$1dimensional near3 printing) (S3 near2 D near3 print\$3) (three-d near3 print\$3) (three- dimensional near3 print\$3) (three-d near3 print\$3) (three near3 dimensional near3 print\$3))	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:29
S8	6	S6 and S3	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 10:30
S9	189	((heatab\$3 heat\$4 thermal\$3) with (platform stage table)) same (plate with (resin \$4polymer \$4monomer \$5plastic) near5 layer)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 11:34
S10	9802	((heatab\$3 heat\$4 thermal\$3) with (platform stage table)).ti,ab.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 11:36

S11	689	B29C67/0092.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 11:56
S12	6847	B29C67/00\$.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 12:44
S13	90	((heatab\$3 heat\$4 thermal\$3) with (platform stage table)) same (plate) and S12	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 12:45
S14	0	("2015/0165687").URPN.	USPAT	OR	ON	2015/11/16 12:55
S15	1	tw adj "102223491"	FPRS; EPO; DERWENT	OR	ON	2015/11/16 14:22
S16	120	H05B3/22.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:25
S17	7	((heatab\$3 heat\$4 thermal\$3) with (platform stage table)) same (plate) and S16	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:42
S20	530	B29C2795\$.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:42
S21	3	((heatab\$3 heat\$4 thermal\$3) with (platform stage table)) same (plate) and S20	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:46
S22	268	((heatab\$3 heat\$4 thermal\$3) with (platform stage) with (plate)).ti,ab.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:47
S23	371	(B33Y30/00).cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:47
S24	12	((heatab\$3 heat\$4 thermal\$3) with (platform stage table)) same (plate) and S23	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:47
S25	0	("2015/0306700").URPN.	USPAT	OR	ON	2015/11/16 14:53
S26	371	B33Y3\$.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:54
S27	6891	S26 or S12	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/16 14:55
S28	4	S22 and S27	US- PGPUB; USPAT;	OR	ON	2015/11/16 14:55

			USOCR			
S29	404650	(platform stage table plate) with (coat\$3)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 14:57
S30	20030	(platform stage table plate) with (temperatur\$3 near10 coat\$3)".ti,ab",	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 14:57
S31	19746	(platform stage table plate) with (temperatur\$3 near10 coat\$3)".ti,ab""."	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 14:57
S32	196	(platform stage table plate) with (temperatur\$3 near10 coat\$3).ti,ab.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 14:58
S33	213	(platform stage table plate) with (temperatur\$3 near10 coat\$3 near10 (resin \$4polymer \$4monomer \$5plastic) near5 layer)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 15:08
S34	2	S33 and S27	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 15:09
S35	9170	(platform stage table plate) with (coat\$3 near10 (resin \$4polymer \$4monomer \$5plastic) near5 layer)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 15:10
S36	34	(platform plate) with (coat\$3 near10 (resin \$4polymer \$4monomer \$5plastic) near5 layer) and S27	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 15:11
S37	1709	((build\$3 construct\$3 mold\$4 mould\$3) near10 (platform plate) with ((resin \$4polymer \$4monomer \$5plastic) near5 (layer)) (resin \$4polymer \$4monomer \$5plastic) near5 layer) and S27	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 15:28
S38	1721	(plastic resin) near5 (build\$3 construct\$3 mold\$4 mould\$3) near10 (platform plate).ab.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 15:29
S39	11	S38 and S27	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 15:29
S40	6	("20010038168" "6722872" "7127309" "7261542" "8282380" "8827684").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 15:57
S44	0	S40 and S5	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 17:06
S45	7148	(platform stage table plate) and (polyimide).ti,ab.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16: 17:08

S47	207	(platform stage table plate) with (polyimide).ti,ab.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 17:09
S48	0	("2013/0098068").URPN.	USPAT	OR	ON	2015/11/16 17:11
S49	0	("2013/0098068").URPN.	USPAT	OR	ON	2015/11/16 17:13
S50	1	"20060191271"	USPAT	OR	ON	2015/11/16 17:35
S51	2	"20060191271"	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 17:35
S52	0	(platform stage table plate) with (coat\$3) with (polyimide) and S27	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 17:41
S53	43	(platform stage table plate) with (coat\$3) with (polyimide).ab.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 17:42
S54	0	("20010038168" "6722872" "7127309" "7261542" "8282380" "8827684").PN. and (platform stage table plate) and (polimide)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 17:44
S55	1	("20010038168" "6722872" "7127309" "7261542" "8282380" "8827684").PN. and (platform stage table plate) and (polyimide)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 17:44
S56	1	("20010038168" "6722872" "7127309" "7261542" "8282380" "8827684").PN. and (polyimide)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 17:46
S57	24	("20020195746" "20040175450" "20040232601" "20120059503" "20120059504" "20120092724" "20120105903" "20120113457" "20120113473" "4097566" "5192559" "5637175" "5730817" "6129872" "6841116").PN. OR ("8282380").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 18:19
S58	6847	B29C67/00\$.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 21:35
S59	371	B33Y3\$.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 21:35
S60	6891	S59 or S58	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 21:35
S61	35	(thermal\$4 heat\$4) near5 (conductiv\$4) near10 (plate stage platform) and S60	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/16 21:35
S62	6853	B29C67/00\$.cpc.	US-	OR	ON	2015/11/17

			PGPUB; USPAT; USOCR			10:33
S63	372	B33Y3\$.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:33
S64	6897	S63 or S62	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:33
S65	858	(aluminum al steel brass ceramic glass alloys) near10 (plate stage platform) and S64	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:33
S66	773	(aluminum al steel brass ceramic glass alloys) near10 (plate platform) and S64	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:33
S67	621	(aluminum al steel brass ceramic glass alloys) near5 (plate platform) and S64	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:33
S68	127	(aluminum al steel brass ceramic glass alloys) near5 (platform) and S64	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:34
S69	50	(aluminum al steel brass alloys) near5 (platform) and S64	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 10:38
S70	19	(platform stage table plate) with (catridge)	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 12:28
S71	1	(platform stage table plate) same (heat\$3 near5 catridge)	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 12:30
S72	3642	(platform stage table plate) same (heat\$3 near5 catridge)	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 12:31
S73	1671	(platform stage table plate) with (heat\$3 near5 catridge)	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 12:31
S74	7	(platform stage table plate) with (heat\$3 near5 catridge) and S64	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 12:31
S75	28	(platform stage table plate) same (heat\$3 near5 catridge) and S64	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 12:33
S76	21	S75 not S74	US- PGPUB; USPAT; USOCR	OR	ON	2015/11/17 12:34

S77	16	(heat\$3 near5 cartridge) near5 (benefit adantage)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 13:44
S78	28	(platform stage table plate) with (thermocouple) and S64	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 14:24
S79	35	(US-20130075575-\$ or US-20070284731-\$ or US-20150306700-\$ or US-20150165687-\$ or US-20150159007-\$ or US-20130327917-\$ or US-20130287934-\$ or US-20130186558-\$ or US-20110256252-\$ or US-20110253035-\$ or US-20070037509-\$ or US-20070026145-\$ or US-20150314373-\$ or US-20130098068-\$ or US-20100316877-\$ or US-20060082708-\$ or US-20040175450-\$ or US-20130341838-\$ or US-20130256953-\$ or US-20100012630-\$ or US-20150174824-\$ or US-20110241947-\$ or US-20100193998-\$ or US-20050275129-\$ or US-20120133083-\$ or US-20100174392-\$).did. or (US-6627376-\$ or US-6096476-\$ or US-4143790-\$ or US-5837960-\$ or US-5025133-\$ or US-5415219-\$ or US-5348693-\$ or US-8282380-\$ or US-8119053-\$).did.	US-PGPUB; USPAT	OR	ON	2015/11/17 17:14
S80	180	(crews fasteners quick\$2release (vacuum near5 suction) magnets electromagnets) with (platform stage table plate) and S64	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 17:17
S81	2	(crews fasteners quick\$2release (vacuum near5 suction) magnets electromagnets) with (platform stage table plate) and S79	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 17:18
S82	21119	(plate stage platform) with (pattern\$3 text\$3 protrusions emboss\$3 abrad\$4 groov\$3) with (\$5meter)	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 18:21
S83	30	(plate stage platform) with (pattern\$3 text\$3 protrusions emboss\$3 abrad\$4 groov\$3) with (\$5meter) and S64	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 18:47
S84	4	(plate stage platform) with (pattern\$3 text\$3 protrusions emboss\$3 abrad\$4 groov\$3) with (nanometer nm micrometer) and S64	US-PGPUB; USPAT; USOCR	OR	ON	2015/11/17 18:48

EAST Search History (Interference)

< This search history is empty >

11/ 17/ 2015 8:06:57 PM**C:\ Users\jhernandez\ Documents\ EAST\ Workspaces\ 14574237.wsp**

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 14/574,237				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A				
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	300		N/A				
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A				
TOTAL CLAIMS (37 CFR 1.16(j))	18	minus 20 = *	x 40 =	0.00	OR					
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1	minus 3 = *	x 210 =	0.00						
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00						
				TOTAL		TOTAL				
* If the difference in column 1 is less than zero, enter "0" in column 2.				730						
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.										



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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
14/574,237	12/17/2014	2853	730	000285/00630	18	1

CONFIRMATION NO. 3704

94544

Cittone & Chinta LLP
11 Broadway, Suite 615
New York, NY 10004

FILING RECEIPT



OC000000072660650

Date Mailed: 01/05/2015

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Riley Reese, Carpinteria, CA;
Hemant Bheda, Saratoga, CA;

Applicant(s)

Arevo Inc., Saratoga, CA

Power of Attorney: The patent practitioners associated with Customer Number 94544

Domestic Applications for which benefit is claimed - None.

A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

If Required, Foreign Filing License Granted: 01/02/2015

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/574,237**

Projected Publication Date: 06/23/2016

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS

Preliminary Class

347

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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Application Number	TBA
Filing Date	12-17-2014
First Named Inventor	Riley Reese
Title	Heated Build Platform and System for Three Dimensional Printing M
Art Unit	TBA
Examiner Name	TBA
Attorney Docket Number	000285/00630

SIGNATURE of Applicant or Patent Practitioner

Signature	/Henry J. Cittone/	Date	DEC 17, 2014
Name	Henry J. Cittone	Telephone	212-710-5619
Registration Number	57206		

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SIGNATURE of Applicant for Patent

Signature	<i>Hemant Bheda</i>	Date	NOV 21, 2014
Name	Hemant Bheda	Telephone	408.205.1051
Title and Company	CEO - Arevo Inc.		

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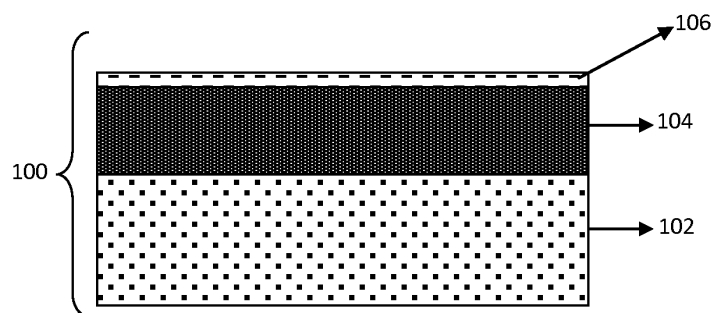


FIG. 1

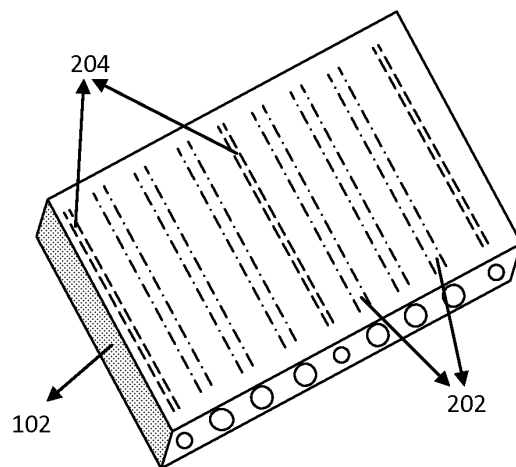


FIG. 2

HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING

METHODS

FIELD OF THE INVENTION

[001] The present invention generally relates to the field of 3D printing of objects, and more particularly relates to developing a heated build platform for supporting the three dimensional objects using high temperature polymers.

BACKGROUND

[002] Additive and subtractive manufacturing technologies enable computer designs, such as CAD files, to be made into three dimensional (3D) objects. 3D printing, also known as additive manufacturing, typically comprises depositing, curing, fusing, or otherwise forming a material into sequential cross-sectional layers of the 3D object. One type of additive manufacturing commonly referred to as fused filament fabrication involves a number of printed layers of a building material, which are extruded from an extruding head of a 3D printer and deposited over a build plate over which the 3D object is formed. The build plate serves as a platform on which a 3D printed object is constructed. Also, the temperature of the build plate must be controlled and varied depending on deposited layers, the building material and other parameters of printing process. The heating of the build plate helps in maintaining the temperature of the first layer and hence fusion of the subsequent layers over the first layer.

[003] The current 3D printing methods involve heated build plate using silicone pads and have PID control of heated plate. Also, the present methods use polyimide tape as a substrate on the build plate for 3D part adherence. Use of polyimide tape or ultem plates does not meet the thermal requirements for high temperature thermoplastics (e.g. Polyether ether ketone (PEEK),

Polyetherimide (PEI), Polyphenylsulfone (PPSU), Polyamide-imide (PAI), self-reinforced polyphenylene (SRP), etc. which require the plate to be in the range of 150-300°C). When using high temperature thermoplastics during fused filament fabrication, a heated build plate and a tacky surface are necessary to maintain adhesion between the plate and bottom layer of the printing part. If the build plate is not heated, the initial layer will not adhere to the build plate or the part will pull off the plate as the polymer contracts and cools down. If the build plate does not have a tacky surface then the polymer will slide along the plate or stick to extruding nozzle.

[004] Polyimide tape has been applied to heated build plates for its tactility and performance under high temperatures. Applying polyimide tape is a difficult process inevitably allowing for tiny debris or air to be trapped between the tape and metal surface. Once the metal surface is heated, the air gaps expand creating an uneven printing surface. Further, the adhesive for the polyimide tape can burn off under high temperatures releasing fumes and damaging the coating.

[005] Even if a part is built on an area of polyimide tape without debris or air bubbles, the tape can be easily damaged upon removal of the part. At elevated temperatures, the bottom layer of tape can permanently adhere to the 3D part causing the tape to tear or bubbles to form between the tape and build plate. Even when the part has been fully cooled, the polyimide tape can still adhere to the bottom layer resulting in damage or tearing of the tape upon part removal.

[006] Another problem with the current structures of the build platform is that a user has to wait for the build platform to cool to reduce the risk of damage to the part during removal and even when plate is cooled, the part may be difficult to remove without damaging the part and/or the polyimide tape

[007] Therefore, there exists a need in the three dimensional printing methods for developing a heated build platform for supporting 3D objects of high temperature thermoplastics. Further,

there also exists a need for facilitating modular and easy removal of built parts from the build surface or platform.

SUMMARY OF THE INVENTION

[008] An objective of the present invention is to design and develop a temperature controlled build platform for three dimensional printing methods for high temperature thermoplastics.

[009] Another objective of the present invention is to provide a removable plate that is thermally conductive and is safely secured over the build platform allowing quick installation and release of the plate, and also allowing cooling of a 3D object separately while simultaneously allowing printing of a subsequent object.

[0010] Another objective of the present invention is to apply a high temperature polymer coating on the surface of the removable plate, secured over the heated build, providing tactility for improving adhesion between printable layers and the printing surface and maintain adhesion throughout the build.

[0011] A further objective of the present invention is to provide easy dissociation of the 3D object from the build platform without damaging the 3D object and/or tacky surface provided by the coating.

[0012] A further objective of the present invention is to provide an even surface of build platform by avoiding trapping of debris or air bubbles between the tacky coating or surface and the build platform.

[0013] Another objective of the present invention is to reduce warping/bowing of the removable plate, where the thermal expansion of the plate can cause bowing and/or rippling, creating an uneven printing surface.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1 shows a build platform with a removable thermally conductive and coated plate for three dimensional printing methods, in accordance with an embodiment of the present invention;

[0015] FIG. 2 shows a build platform with holes for heater cartridges and thermocouples, in accordance with an embodiment of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0016] In the following detailed description of embodiments of the invention, numerous specific details are set forth in order to provide a thorough understanding of the embodiment of invention. However, it will be obvious to a person skilled in art that the embodiments of invention may be practiced with or without these specific details. In other instances well known methods, procedures and components have not been described in detail so as to not unnecessarily obscure aspects of the embodiments of the invention.

[0017] Furthermore, it will be clear that the invention is not limited to these embodiments only. Numerous modifications, changes, variations, substitutions and equivalents will be apparent to those skilled in the art, without parting from the spirit and scope of the invention.

[0018] To address major issues in current build platforms or plates employed in three dimensional printing methods, one of them may be poor adhesion between the 3D object and the

build platform, embodiments of the present invention provides a system and an apparatus (100) performing as a base for depositing extruded layers of polymeric material from a printhead of a 3D printer, and in result a supporting structure for a 3D object. The polymeric materials are high temperature thermoplastics, such as and not limited to PEEK, PEI, PPSU, PAI, SRP and the like. The high temperature thermoplastics demand high thermal requirements for the build platforms in order to withstand the high temperatures and heat involved during the printing process.

[0019] FIG. 1 shows a build platform with a removable thermally conductive and coated plate for three dimensional printing methods, in accordance with an embodiment of the present invention. As shown in FIG. 1, the build apparatus (100) comprises a build platform (102), a thermally conductive removable plate (104) and a high temperature polymer coating (106). The build platform (102) has a temperature control means that controls the temperature of the build platform (102). The surface of the build platform (102) is evenly heated using the temperature control means. In an embodiment, the build platform (102) may be evenly heated using heater cartridges (202) with thermal control from PID controllers connected to thermocouples (204) spaced evenly in the build platform (102), where the heater cartridges are acting as temperature control means for the build platform 102. In an embodiment, the material of build platform 102 may be aluminum, steel, brass, ceramic, glass, or alloys similar with low coefficient of thermal expansion (CTE).

[0020] FIG. 2 shows a build platform with holes for heater cartridges and thermocouples, in accordance with an embodiment of the present invention. As shown in FIG. 2 the heater cartridges are spaced evenly along the surface of the build platform 102, comprising, for example, an aluminum block. In another embodiment for controlling temperature of the build platform (102), one or more thermocouples can be situated at one or several locations (204) on

the block 102 to provide feedback to a controller, such as a PID controller, and hence maintain temperature set points throughout a build. Also, a ceramic, or other high temperature dielectric, can be used to insulate the build platform 102 and protect build platform support 102 from emitted heat. The number of holes depends on the number of heating cartridges and/or thermocouples.

[0021] In an embodiment of the present invention, the build platform 102 must be able to withstand high temperatures. Since, embodiments of the present invention involve use of high temperature thermoplastics, the build platform 102 must have high thermal tolerances, and able to withstand high temperatures, such as and not limited to temperatures ranging between 150 degrees Celsius to 300 degrees Celsius.

[0022] According to FIG.1, the build apparatus 100 further comprises a removable plate 104 secured over the build platform 102. The removable plate 104 must be thermally conductive in nature, so that it may be heated up due to the heat generated at the build platform 102 because of the temperature control means. Further, the removable plate 104 must be made of a material having a low coefficient of thermal expansion (CTE), to avoid expansion of the plate as it is heated up due to the heated build platform 102. In an embodiment, the material for the removable plate 104 may be aluminum, steel, brass, ceramic, glass, or alloys similar with low coefficient of thermal expansion (CTE). Also, the removable plate 104 must be thin, for example, the thickness of the plate 104 may range from 0.025-0.5". Further, the thickness of the plate 104 also depends on the flexural character of the material. The removable plate 104 must be thin enough to allow for minor flexing for part removal; however, it must not be too thin such that heating of the plate produces rippling, bowing, or warping of the plate, resulting in a print surface that is uneven or not consistently level. Furthermore, the removable plate 104 must be

able to withstand high temperatures, such as and not limited to temperatures ranging up to 300 degrees Celsius.

[0023] According to embodiments of the present invention, the removable plate 104 is removably secured over the build platform 102. This allows for quick install and release of the plate 104 from the build platform 102. The removable plate 104 is preferably appropriately secured to prevent warping/bowing of the removable plate 104 due to the differences in thermal expansion and contraction compared to the build platform 102. It may be obvious to the person skilled in the art, that there exists a variety of methods to removably secure a plate over a build platform. In an embodiment, guiding legs/rails may be used to slide the removable plate 104 into multiple grooves and multiple set screws and fasteners to secure the plate 104 onto build platform 102. In another embodiment, spring/latch quick-release mechanism may be used to secure in place and remove the plate 104. In another embodiment, the method may be vacuum suction of the plate 104 onto build platform 102. In yet another embodiment, the method may be magnets and/or electromagnets to secure the plate 104 onto build platform 102 .

[0024] As shown in FIG. 1, a high temperature polymer coating 106 is applied directly over the surface of the removable plate 104. In an embodiment, the high temperature polymer used for coating may be polyimide. In an embodiment, a high temperature polymer coating 106 is spray coated over the plate 104. It may be obvious to a person skilled in the art that there exists a variety of coating methods and types of high temperature polymer coatings that can be used to create a coated layer 106 over the plate 104. Further, the thickness of the high temperature polymer coating may range from 0.001" to 0.1". The surface of the removable plate 104 is coated with thin layer of a high temperature polymer in order to impart better adherence properties both to the bottom layer of a 3D object and the plate 104 over the current methods of

using polyimide plate. The high temperature polymer coating 106 provides a tacky surface preventing the extrudate (material extruded from the nozzle) from sliding along the plate 104 or sticking to extruding nozzle. Further, the high temperature polymer coating 106 is resilient in nature and cannot be easily scratched or punctured. The surface toughness of this coating 106 prevents damage from occurring during 3D object removal.

[0025] Furthermore, the high temperature polymer coating 106 does not wear away and thus does not need to be replaced after every build under high temperature. Also, the coating 106 is applied to a clean plate 104 that further minimizes or eliminates the potential for occurrence of trapped debris or air bubbles between the coating 106 and the plate surface 104. Advantageously, the high temperature polymer coating 106 can operate at temperatures up to 300°C suitable for any high temperature polymer.

[0026] In order to increase polymer adhesion to the plate surface 104 coated with the high temperature polymer 106, the surface of the high temperature polymer coating 106 may be roughened or treated. The surface treatment of the high temperature polymer coating 106 imparts a regular or an irregular patterned feature to the coating 106. In an embodiment, the surface of the high temperature polymer coating 106 may be roughened at the nano-, micro-, or milli- meter scale using methods like and not limited to sand blasting, bead blasting, and/or metal wire brushing to increase polymer adhesion to the coated surface 106.

[0027] The removable plate 104 also possesses flexibility owing to the type of material it is made of. The flexibility of the plate 104 allows for easier dissociation between the 3D object and the removable plate 104 upon cooling. Further, this flexibility also reduces the possibility of

damage to the high temperature polymer coating 106 or the 3D object during object removal since a blade or wedge is no longer needed to pry off the object.

[0028] The advantage of having the removable plate 104 secured over the build platform 102 is easy removal of the built object upon completion. This happens, since the removable plate 104 is thin and also there is a significant difference in thermal contraction between the removable plate and the 3D printed polymer object. Therefore once the building of the object is finished, the object will pop off the plate 104 when the plate and part have cooled. This efficiently avoids the general issue in the current art, where the 3D object sticks to the heated build platform, and the object has to be dug out from the platform in order to remove it or having to remove the object from a support raft requiring an additional step to dissolve or mechanically remove the support from the part. Another efficient advantage of securing a removable thin plate 104 over the heated build platform 102 is that it allows for quick installation and release of the plate 104 from the build platform 102, further allowing for quick transfer of 3D objects during printing. This helps in continuous operation of the 3D printer, increasing the efficiency of the printer.

[0029] The low coefficient of thermal expansion (CTE) of the plate 104 favors an even flat surface for printing. This is because if the material of the plate 104 has a much higher CTE than the build platform 102 below it, then the plate 104 will bow or deform and actually separates from the build platform 102. Resultantly, the surface for printing a 3D object, which is the surface of the removable plate 104, will become uneven and hence, the printing process doesn't have a flat surface to print on. Therefore, the plate 104 should have a low CTE, so that if the build platform 102 below expands, the plate 104 does not bow or deform, and the printing surface will be flat, level, and consistent. Hence, the material of the plate 104 may be thin ceramic, which is thin enough to still conduct heat and have minimal expansion upon heating.

[0030] The build apparatus 100 described in embodiments of the present invention is suitable for additive manufacturing methods, including and not limited to fused filament fabrication (FFF) and other thermoplastic based reinforced fiber laying processes.

[0031] Advantageously, embodiments of the present invention provides an apparatus comprising a heated build platform 102 over which a removable plate 104 is removably secured, and a layer of a high temperature polymer coating 106 is applied over the surface of the plate 104. The high temperature polymer coating 106 provides adhesion between the 3D object and the surface of the plate 104. Further, embodiments of the present invention disclose surface treatment of the high temperature polymer coating 106 in order to increase polymer adhesion and the plate 106. Therefore, the use of a high temperature polymer coating 106 in an embodiment of the present invention instead of polyimide tape over a removable plate provides a consistent, smooth, tacky, long-lasting surface for the construction of 3D objects via FFF and continuous fiber deposition. Further, a method of securing the coated removable plate 104 to a fixed build platform 102 to allow for easy separation of the object from the removable plate 104 and for quick exchange of objects between builds.

[0032] Furthermore, the polyimide coating 106 has demonstrated better adherence properties both to the bottom layer of a 3D object and the plate 104 over the currently used polyimide tape. This coating 106 is much more resilient compared to polyimide tape, which can be easily scratched or punctured. The surface toughness of this coating 106 prevents damage from occurring during 3D object removal. The polyimide coating 106 does not wear away and thus does not need to be replaced. On the other hand, the current art polyimide tape is preferably replaced after every build under high temperature build platform temperatures. Also, the

polyimide coating 106 is applied to a clean plate minimizing or eliminating the potential for trapped debris or air bubbles between the coating 106 and removable plate surfaces 104.

[0033] Further advantages include, the polyimide coating 106 can operate at high temperatures up to 300 degrees Celsius suitable for any high temperature thermoplastic. The flexibility of the removable plate 104 also reduces the possibility of damage to the coating 106 or the object during object removal since a blade or wedge is no longer needed to pry off the part. The surface of the polyimide coating 106 can be roughened at the nano-, micro-, or milli- meter scale using sand blasting, bead blasting, and/or metal wire brushing to increase polymer adhesion to the coated surface.

We claim:

1. A build apparatus working as a base for printing 3D objects of high temperature thermoplastics employing additive manufacturing methods, the apparatus comprising:
 - a build platform with a temperature control means for heating the build platform;
 - a thin thermally conductive removable plate having a build surface secured on top of the build platform;
 - a high temperature polymer coating evenly applied over the surface of the removable plate for maintaining adhesion between the 3D object and the build surface throughout the printing; and
 - where the surface of the high temperature polymer coating is treated or roughened to improve adhesion between the 3D object and the build surface; and
 - where the removable plate possesses a relatively low coefficient of thermal expansion such that the removable plate does not deform or deform relatively less on heating.
2. The build apparatus claimed in claim 1, wherein the high temperature thermoplastics are used as feed material and are selected from the group consisting of PEEK, PEI, PPSU, PAI, and SRP.
3. The build apparatus claimed in claim 1, wherein the high temperature polymer coating I is a polyimide.
4. The build apparatus claimed in claim 1, wherein the additive manufacturing method is fused filament fabrication (FFF) or a thermoplastic based reinforced fiber laying process.

5. The build apparatus claimed in claim 1, wherein the temperature control means to heat the build platform comprises heater cartridges that are spaced within the build platform, and heating pads attached to the build platform.
6. The build apparatus claimed in claim 1, wherein the build platform may have thermocouples situated at one or several locations to provide feedback to a controller for maintaining temperature set points throughout a build.
7. The build apparatus claimed in claim 1, wherein ceramic, or other high temperature dielectric is used to insulate the build platform and protect the build platform support from heat.
8. The build apparatus claimed in claim 1, wherein the build platform, the removable plate, and the high temperature polymer coating are able to withstand high temperatures ranging between 150 degrees Celsius to 300 degrees Celsius.
9. The build apparatus claimed in claim 1, wherein the material for the removable plate may be aluminum, steel, brass, ceramic, glass, or alloys with a low coefficient of thermal expansion (CTE).
10. The build apparatus claimed in claim 1, wherein the material for the build platform may be aluminum, steel, brass, ceramic, glass, or alloys with a low coefficient of thermal expansion (CTE).
11. The build apparatus claimed in claim 1, wherein the removable plate thickness ranges from 0.025-0.5" and wherein the thickness is selected depending on the flexural character of the material.
12. The build apparatus claimed in claim 1, wherein the removable plate is removably secured over the build platform using guiding legs or rails to slide the removable plate

- into multiple grooves and multiple set screws and fasteners and securing the plate onto the build platform; or using a spring and latch quick-release mechanism to secure in place and remove the plate; or using vacuum suction of the removable plate onto the build platform; or using magnets or electromagnets to secure the plate over the build platform.
13. The build apparatus claimed in claim 1, wherein the high temperature polymer coating is spray coated over the removable plate and imparts adherence properties both to the bottom thermoplastic layer of a 3D object and the removable plate.
 14. The build apparatus claimed in claim 1, wherein the high temperature polymer coating provides a tacky surface preventing the extrudate from sliding along the removable plate or sticking to an extruding nozzle.
 15. The build apparatus claimed in claim 1, wherein the thickness of the high temperature polymer coating may range from 0.001" to 0.1".
 16. The build apparatus claimed in claim 1, wherein the high temperature polymer coating is applied to a clean removable plate for minimizing or eliminating any potential for occurrence of trapped debris or air bubbles between the high temperature polymer coating and the plate surface.
 17. The build apparatus claimed in claim 1, wherein the surface treatment of the high temperature polymer coating imparts a regular or irregular pattern to the coating, where the surface of the high temperature polymer coating is roughened at the nano-, micro-, or milli- meter scale to increase polymer adhesion to the high temperature polymer coated surface.
 18. The build apparatus claimed in claim 1, wherein the removable plate is flexible in nature, where the flexibility allows for easier dissociation between the 3D object and the

removable plate upon cooling and reduces the possibility of damage to the high temperature polymer coating or the 3D object during object removal.

ABSTRACT

An apparatus performing as a base for printing 3D objects using high temperature thermoplastics employing additive manufacturing methods is provided. The apparatus comprises a heated build platform, a thin removable plate secured on top of the build platform, a high temperature polymer coating applied over the removable plate, and surface treatment of high temperature polymer coating to maintain adhesion between 3D object and printing surface, . Also, the removable plate has low coefficient of thermal expansion compared to build platform below it, for avoiding bowing of the plate as it is heated due to heated build platform, hence providing flat printing surface. The thin removable plate allows 3D objects to pop off the plate upon cooling, without damaging the polymer coating, the plate, or the object. It also allows for continuous operation of printing, while the plate is released for cooling, a new plate is installed for printing.

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS		
First Named Inventor/Applicant Name:		Riley Reese		
Filer:		Henry Joseph Cittone.		
Attorney Docket Number:		000285/00630		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				730

Electronic Acknowledgement Receipt	
EFS ID:	20996858
Application Number:	14574237
International Application Number:	
Confirmation Number:	3704
Title of Invention:	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS
First Named Inventor/Applicant Name:	Riley Reese
Customer Number:	94544
Filer:	Henry Joseph Cittone.
Filer Authorized By:	
Attorney Docket Number:	000285/00630
Receipt Date:	17-DEC-2014
Filing Date:	
Time Stamp:	20:01:30
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$730
RAM confirmation Number	6652
Deposit Account	506377
Authorized User	CITONE, HENRY J
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	1-ADS-285-630.pdf	1507873	no	6
			1fd96c6e4c3f8f174ac10ac8a0c5e89db61669b3		
Warnings:					
Information:					
2	Oath or Declaration filed	1-Dec_Hemant_Arevolab.pdf	120245	no	2
			180d464a110b71f6b6a74acb5aab6fc7fd36b22		
Warnings:					
Information:					
3	Oath or Declaration filed	1-Dec_Riley_Arevolab.pdf	129758	no	2
			a6e6ba370c9bacc65dd91ce2b996caacf071f7b6		
Warnings:					
Information:					
4	Power of Attorney	1-POA-285-630.pdf	212222	no	3
			26f67955b608211873808f339a0ce34e521d3ccd		
Warnings:					
Information:					
5	Drawings-only black and white line drawings	1-Drawings-285-630.pdf	31341	no	2
			c70fb8c56ab13780a74275e92f8502586005c9e4e		
Warnings:					
Information:					
6		1-Spec-Claims-Abst-285-630.pdf	152421	yes	16
			34fc83019ed3383d57f82802a0c36505b7f3e294		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	11	
	Claims		12	15	
	Abstract		16	16	

Warnings:					
Information:					
7	Fee Worksheet (SB06)	fee-info.pdf	35178	no	2
			f45a280a27053149b046bdfcd01c400d51540309		
Warnings:					
Information:					
Total Files Size (in bytes):				2189038	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	000285/00630
		Application Number	
Title of Invention	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--

Inventor Information:

Inventor 1					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Riley		Reese		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Carpinteria	State/Province	CA	Country of Residence i	US
Mailing Address of Inventor:					
Address 1		1491 Chaparral Dr.			
Address 2					
City	Carpinteria	State/Province	CA		
Postal Code	93013	Country i	US		
Inventor 2					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Hemant		Bheda		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Saratoga	State/Province	CA	Country of Residence i	US
Mailing Address of Inventor:					
Address 1		14812 Gypsy Hill Road			
Address 2					
City	Saratoga	State/Province	CA		
Postal Code	95070	Country i	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	000285/00630
		Application Number	
Title of Invention	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS		

☐ An Address is being provided for the correspondence information of this application.			
Customer Number	94544		
Email Address	hcittone@cittonchitna.com	Add Email	Remove Email
Email Address	cittonchinta@clairvalex.com	Add Email	Remove Email

Application Information:

Title of the Invention	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS		
Attorney Docket Number	000285/00630	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	2	Suggested Figure for Publication (if any)	1

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.											
<table border="1"> <tr> <td>Please Select One:</td> <td>☒ Customer Number</td> <td>☐ US Patent Practitioner</td> <td>☐ Limited Recognition (37 CFR 11.9)</td> </tr> <tr> <td>Customer Number</td> <td colspan="3">94544</td> </tr> </table>				Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)	Customer Number	94544		
Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)								
Customer Number	94544										

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.			
Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	000285/00630
		Application Number	
Title of Invention	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS		

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove			
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ^j (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

Authorization to Permit Access:

☒ Authorization to Permit Access to the Instant Application by the Participating Offices
If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application. In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application. In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	000285/00630
		Application Number	
Title of Invention	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant 1			Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
Clear			
☒ Assignee	☐ Legal Representative under 35 U.S.C. 117	☐ Joint Inventor	
☐ Person to whom the inventor is obligated to assign.		☐ Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor :			
If the Applicant is an Organization check here. ☒			
Organization Name	Arevo Inc.		
Mailing Address Information:			
Address 1	14812 Gypsy Hill Road		
Address 2			
City	Saratoga	State/Province	CA
Country ⁱ	US	Postal Code	95070
Phone Number	408.205.1051	Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button. Add			

Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	000285/00630
		Application Number	
Title of Invention	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS		

Assignee 1				
Complete this section only if non-applicant assignee information is desired to be included on the patent application publication in accordance with 37 CFR 1.215(b). Do not include in this section an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest), as the patent application publication will include the name of the applicant(s).				
Remove				
If the Assignee is an Organization check here. ☐				
Prefix	Given Name	Middle Name	Family Name	Suffix
Mailing Address Information:				
Address 1				
Address 2				
City		State/Province		
Country i		Postal Code		
Phone Number		Fax Number		
Email Address				
Additional Assignee Data may be generated within this form by selecting the Add button. Add				

Signature: [Remove](#)

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications					
Signature	/Henry J. Cittone/			Date (YYYY-MM-DD)	2014-12-17
First Name	Henry	Last Name	Cittone	Registration Number	57206
Additional Signature may be generated within this form by selecting the Add button. Add					

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS
-------------------------------	--

As the below named inventor, I hereby declare that:

This declaration is directed to: ☒ The attached application, or
☐ United States application or PCT international application number _____
filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Hemant Bheda Date (Optional): NOV 21, 2014
Signature: *Hemant Bheda*

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS
-------------------------------	--

As the below named inventor, I hereby declare that:

This declaration is directed to: ☒ The attached application, or
☐ United States application or PCT international application number _____
filed on _____.

The above-identified application was made or authorized to be made by me.

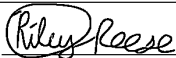
I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Riley Reese Date (Optional): Nov 20 2014
Signature: 

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
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Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		14574237	
	Filing Date		2014-12-17	
	First Named Inventor	Riley Reese		
	Art Unit	TBA		
	Examiner Name	TBA		
	Attorney Docket Number	00285/00630		

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Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	
	1	7127309	B2	2006-10-24	Stratasys, Inc.	Claim 1, abstract, Fig. 1 with explanation	
	2	8282380	B2	2012-10-09	Makerbot Industries	Abstract, Fig. 1 with explanation	
	3	6722872	B1	2004-04-20	Stratasys, Inc.	Abstract, Fig. 9 with explanation	
	4	8827684	B1	2014-09-09	Radiant Fabrication	Claim 1, Claim 4, Abstract	
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	1	20010038168	A1	2001-11-08	Stratasys, Inc.	Description	
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	Filing Date		2014-12-17	
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	Attorney Docket Number	00285/00630		

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		14574237
	Filing Date		2014-12-17
	First Named Inventor	Riley Reese	
	Art Unit	TBA	
	Examiner Name	TBA	
	Attorney Docket Number	00285/00630	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Henry J. Cittone/	Date (YYYY-MM-DD)	2014-12-17
Name/Print	Henry J. Cittone	Registration Number	57206

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Electronic Acknowledgement Receipt	
EFS ID:	20996924
Application Number:	14574237
International Application Number:	
Confirmation Number:	3704
Title of Invention:	HEATED BUILD PLATFORM AND SYSTEM FOR THREE DIMENSIONAL PRINTING METHODS
First Named Inventor/Applicant Name:	Riley Reese
Customer Number:	94544
Filer:	Henry Joseph Cittone.
Filer Authorized By:	
Attorney Docket Number:	000285/00630
Receipt Date:	17-DEC-2014
Filing Date:	
Time Stamp:	20:10:40
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	2-IDS_285-630.pdf	612559 4def7084ffda6dc46c6b061a278435906b43d3c	no	4

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Information:

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

SCORE Placeholder Sheet for IFW Content

Application Number: 14574237

Document Date: 12/17/2014

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

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