

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT6529939

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT	
<b>NATURE OF CONVEYANCE:</b>	SECURITY INTEREST	
<b>CONVEYING PARTY DATA</b>		
<b>Name</b>		<b>Execution Date</b>
3D SYSTEMS, INC.		02/01/2021
<b>RECEIVING PARTY DATA</b>		
<b>Name:</b>	HSBC BANK USA, N.A.	
<b>Street Address:</b>	95 WASHINGTON STREET	
<b>Internal Address:</b>	FLOOR 2 SOUTH	
<b>City:</b>	BUFFALO	
<b>State/Country:</b>	NEW YORK	
<b>Postal Code:</b>	14203	
<b>PROPERTY NUMBERS Total: 49</b>		
<b>Property Type</b>	<b>Number</b>	
Application Number:	16295013	
Application Number:	16365000	
Application Number:	16365010	
Application Number:	16365038	
Application Number:	16837699	
Application Number:	16839117	
Application Number:	16842818	
Application Number:	16842999	
Application Number:	16843133	
Application Number:	16843492	
Application Number:	16845292	
Application Number:	16867322	
Application Number:	16873739	
Application Number:	16899711	
Application Number:	16908382	
Application Number:	16920018	
Application Number:	16920049	
Application Number:	16925975	
Application Number:	16926264	

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Property Type	Number
Application Number:	16938665
Application Number:	16950516
Application Number:	16999406
Application Number:	17001098
Application Number:	17013093
Application Number:	17019600
Application Number:	17060552
Application Number:	17060826
Application Number:	17086049
Application Number:	17097242
Application Number:	17099842
Application Number:	17111094
Application Number:	17126216
Application Number:	17126224
Application Number:	62811620
Application Number:	62824724
Application Number:	62824729
Application Number:	62824734
Application Number:	63010990
Application Number:	63011073
Application Number:	63060396
Application Number:	63065847
Application Number:	63065859
Application Number:	63086837
Application Number:	63087105
Application Number:	63093825
Application Number:	63105951
Application Number:	63114118
Application Number:	63123739
Application Number:	63124156

#### **CORRESPONDENCE DATA**

**Fax Number:**

*Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.*

**Phone:** 212-549-4664

**Email:** shorne@reedsmith.com

**Correspondent Name:** DANIEL M. PHILION

**Address Line 1:** 599 LEXINGTON AVENUE

**Address Line 2:** 22ND FLOOR

**PATENT**

**REEL: 055206 FRAME: 0488**

<b>Address Line 4:</b> NEW YORK, NEW YORK 10022	
<b>NAME OF SUBMITTER:</b>	DANIEL M. PHILION
<b>SIGNATURE:</b>	/Daniel M. Philion/
<b>DATE SIGNED:</b>	02/02/2021
<b>Total Attachments: 9</b> source=HSBC _ 3D - Patent Security Agreement 2021#page1.tif source=HSBC _ 3D - Patent Security Agreement 2021#page2.tif source=HSBC _ 3D - Patent Security Agreement 2021#page3.tif source=HSBC _ 3D - Patent Security Agreement 2021#page4.tif source=HSBC _ 3D - Patent Security Agreement 2021#page5.tif source=HSBC _ 3D - Patent Security Agreement 2021#page6.tif source=HSBC _ 3D - Patent Security Agreement 2021#page7.tif source=HSBC _ 3D - Patent Security Agreement 2021#page8.tif source=HSBC _ 3D - Patent Security Agreement 2021#page9.tif	

**PATENT SECURITY AGREEMENT**

This **PATENT AGREEMENT** (this "Agreement"), dated as of February 1, 2021, made by each of the Persons listed on the signature pages hereto (each a "Grantor" and collectively, the "Grantors"), in favor of HSBC Bank USA, National Association, as Administrative Agent for the benefit of the Secured Parties (in such capacity, the "Administrative Agent").

**WHEREAS**, pursuant to the Security Agreement, dated as of February 27, 2019 (as amended, amended and restated, supplemented or otherwise modified from time to time, the "Security Agreement"; capitalized terms used herein and not otherwise defined herein shall have the meaning assigned to such terms in the Security Agreement), the Grantors, 3D Holdings, LLC and 3D Systems Corporation have granted to the Administrative Agent, for the benefit of the Secured Parties, a security interest in, among other property, certain intellectual property of the Grantors, and have agreed to execute and deliver this Agreement, for recording with national, federal and state government authorities, including, but not limited to, the USPTO.

**NOW THEREFORE**, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each Grantor agrees with the Administrative Agent as follows:

Section 1. **Grant of Security**. Each Grantor hereby unconditionally pledges and grants to the Administrative Agent, for the ratable benefit of the Secured Parties, a continuing security interest in and to all of such Grantor's right, title and interest in or to the following assets and properties whether now owned or hereafter acquired or arising and wherever located or in which such Grantor now has or at any time hereafter acquires any right, title or interest in (collectively, the "Patent Collateral");

(a) the patents and patent applications set forth in Schedule I hereto and all reissues, divisions, continuations, continuations-in-part, renewals, extensions and reexaminations thereof and amendments thereto (the "Patents");

(b) all rights of any kind whatsoever of such Grantor accruing under any of the foregoing provided by applicable law of any jurisdiction, by international treaties and conventions and otherwise throughout the world; and

(c) all proceeds of and revenues from the foregoing, including, without limitation, all proceeds of and revenues from any claim by such Grantor against third parties for past, present or future unfair competition with, or violation of intellectual property rights in connection with or injury to, or infringement or dilution of, any Patent owned by such Grantor (including, without limitation, any United States Patent identified in Schedule I hereto).

Section 2. **Security for Obligations**. The grant of a security interest in the Patent Collateral by each Grantor under this Agreement secures the payment and performance of all of the Obligations of the Secured Parties now or hereafter existing under the Credit Agreement.

Section 3. **Recordation**. Each Grantor authorizes the Commissioner for Patent and any other government officials to record and register this Agreement upon request by the Administrative Agent.

Section 4. **Loan Documents.** This Agreement has been entered into pursuant to and in conjunction with the Security Agreement, which is hereby incorporated by reference. The provisions of the Security Agreement shall supersede and control over any conflicting or inconsistent provision herein. The rights and remedies of the Administrative Agent with respect to the Patent Collateral are as provided by the Credit Agreement, the Security Agreement and related documents, and nothing in this Agreement shall be deemed to limit such rights and remedies.

Section 5. **Authorization to Supplement.** Grantor shall comply with the obligations set forth in Section 4.4(b) of the Security Agreement in connection with obtaining rights to any new patent application or issued patent or become entitled to the benefit of any patent application or patent for any divisional, continuation, continuation-in-part, reissue, or reexamination of any existing patent or patent application. Without limiting Grantors' obligations under this Section, Grantors hereby authorize the Administrative Agent unilaterally to modify this Agreement by amending Schedule I to include any such new patent rights of each Grantor identified on the schedules delivered by Grantors to the Administrative Agent pursuant to Section 4.4(b) of the Security Agreement and which become part of the Collateral under the Security Agreement. Notwithstanding the foregoing, no failure to so modify this Agreement or amend Schedule I shall in any way affect, invalidate or detract from the Administrative Agent's continuing security interest in all Collateral, whether or not listed on Schedule I.

Section 6. **Execution in Counterparts.** This Agreement may be executed in counterparts and by different parties hereto in different counterparts, each of which shall constitute an original and all of which when taken together shall constitute a single contract. Delivery of an executed counterpart of a signature page to this Agreement by facsimile or in electronic (i.e., "pdf" or "tif" format) shall be effective as delivery of a manually executed counterpart of this Agreement.

Section 7. **Successors and Assigns.** This Agreement will be binding on and shall inure to the benefit of the parties hereto and their respective successors and assigns.

Section 8. **Governing Law.** This Agreement and any claim, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Agreement and the transactions contemplated hereby and thereby shall be governed by, and construed in accordance with, the laws of the United States and the State of New York, without giving effect to any choice or conflict of law provision or rule (whether of the State of New York or any other jurisdiction).

Section 9. **No Strict Construction.** The parties hereto have participated jointly in the negotiation and drafting of this Agreement. In the event an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the parties hereto and no presumption or burden of proof shall arise favoring or disfavoring any party by virtue of the authorship of any provisions of this Agreement.


Section 10. **Severability.** In case any one or more of the provisions contained in this Agreement should be invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein shall not in any way be affected or impaired thereby.

*[Signature Page Follows]*

**IN WITNESS WHEREOF**, each Grantor has caused this Agreement to be duly executed and delivered by its officer thereunto duly authorized as of the date first above written.

**GRANTOR:**

**3D SYSTEMS, INC.**

By:  \_\_\_\_\_

Name: Andrew M. Johnson

Title: Executive Vice President, Chief Legal  
Officer and Secretary

**AGREED TO AND ACCEPTED:**

**HSBC BANK USA, NATIONAL  
ASSOCIATION,**

as Administrative Agent

By:  \_\_\_\_\_

Name: Ershad Sattar

Title: Vice President

Address for Notices:

HSBC Bank USA, National Association,  
as Administrative Agent

452 Fifth Avenue

New York, NY 10018

Attention: Ershad Sattar

Telephone: (212) 525-7015/ (646) 645-3800

Facsimile No.: (917) 229-6659

Electronic Mail: [ctlany.loanagency@us.hsbc.com](mailto:ctlany.loanagency@us.hsbc.com)



**Patent Applications**

<b>Grantor</b>	<b>Title</b>	<b>Jurisdiction</b>	<b>Application/ Publication No.</b>	<b>Filing Date</b>
3D Systems, Inc.	HIGH RESOLUTION THREE-DIMENSIONAL PRINTING SYSTEM - REMINDER: REVIEW CONTRACT BEFORE ABANDONMENT FOR USA.668	US	62/811,620	2/28/19
3D Systems, Inc.	THREE DIMENSIONAL PRINTING SYSTEM DETECTING OBSTRUCTIONS	US	16/295,013	3/7/19
3D Systems, Inc.	THREE DIMENSIONAL PRINTING SYSTEM ADAPTABLE TO VARYING RESIN TYPES	US	16/365,000	3/26/19
3D Systems, Inc.	THREE DIMENSIONAL PRINTING SYSTEM ADAPTABLE TO VARYING RESIN TYPES	US	16/365,010	3/26/19
3D Systems, Inc.	THREE DIMENSIONAL PRINTING SYSTEM ADAPTABLE TO VARYING RESIN TYPES	US	16/365,038	3/26/19
3D Systems, Inc.	HIGH PRODUCTIVITY SYSTEM FOR PRINTING PRECISION ARTICLES	US	62/824,724	3/27/19
3D Systems, Inc.	LARGE AREA THREE-DIMENSIONAL PRINTER WITH PRECISION OPTICAL PATH	US	62/824,729	3/27/19
3D Systems, Inc.	LOW MOLECULAR WEIGHT GAS FOR PROTECTING LASER WINDOW	US	62/824,734	3/27/19
3D Systems, Inc.	LARGE ARRAY STEREOLITHOGRAPHY WITH EFFICIENT OPTICAL PATH	US	16/837,699	4/1/20
3D Systems, Inc.	LARGE ARRAY STEREOLITHOGRAPHY WITH EFFICIENT OPTICAL PATH	US	16/873,739	4/1/20
3D Systems, Inc.	SYSTEM FOR PRINTING BINDING AGENTS	US	16/839,117	4/3/20
3D Systems, Inc.	METHODS AND APPARATUS FOR 3D PRINTING HYDROGEL MATERIALS	US	16/843,492	4/8/20
3D Systems, Inc.	METHOD OF ALIGNING PIXELATED LIGHT ENGINES	US	16/842,818	4/8/20
3D Systems, Inc.	SYSTEM FOR ALIGNING LASER SYSTEM TO A CARRIER PLATE	US	16/843,133	4/8/20
3D Systems, Inc.	THREE-DIMENSIONAL PRINTING SYSTEM WITH SELF-MAINTAINING POWDER DISTRIBUTION SUBSYSTEM	US	16/842,999	4/8/20

**SCHEDULE I**

<b>Grantor</b>	<b>Title</b>	<b>Jurisdiction</b>	<b>Application/ Publication No.</b>	<b>Filing Date</b>
3D Systems, Inc.	THREE DIMENSIONAL PRINTING SYSTEM WITH PARTIALLY IMMERSED IMAGING BAR DEFINING BUILD PLANE BELOW A FREE SURFACE OF PHOTOCURABLE RESIN	US	16/845,292	4/10/20
3D Systems, Inc.	LARGE AREA THREE DIMENSIONAL PRINTING SYSTEM WITH PRECISION OPTICAL PATH	US	63/010,990	4/16/20
3D Systems, Inc.	THREE-DIMENSIONAL PRINTING SYSTEM THROUGHPUT IMPROVEMENT BY SENSING VOLUME COMPENSATOR MOTION	US	63/011,073	4/16/20
3D Systems, Inc.	SYSTEM AND METHOD FOR REAL-TIME RENDERING OF COMPLEX DATA	US	16/867,322	5/5/20
3D Systems, Inc.	POLYPROPYLENE-BASED PARTICLES FOR ADDITIVE MANUFACTURING	US	16/899,711	6/12/20
3D Systems, Inc.	THREE-DIMENSIONAL PRINthead INCLUDING TWO-DIMENSIONAL SCANNING SYSTEM WITH ENCLOSED PRINthead	US	16/908,382	6/22/20
3D Systems, Inc.	THREE-DIMENSIONAL PRINTING SYSTEM WITH MULTI-FLUID SERVICING MODULE	US	16/920,018	7/2/20
3D Systems, Inc.	THREE-DIMENSIONAL PRINTING SYSTEM WITH HIGH CAPACITY SERVICING MODULE	US	16/920,049	7/2/20
3D Systems, Inc.	PRECISION MECHANISM FOR POSITIONING LOWER FACE OF ARTICLE AT BUILD PLANE	US	16/926,264	7/10/20
3D Systems, Inc.	BUILD MATERIALS FOR 3D PRINTING	US	16/925,975	7/10/20
3D Systems, Inc.	THREE-DIMENSIONAL PRINTING SYSTEM WITH IMPROVED OPTICAL PATH	US	16/938,665	7/24/20
3D Systems, Inc.	SYSTEM AND METHOD FOR DETERMINING A BUILD PLAN BASED UPON AN ANALYZED BUILD PLATE GEOMETRIC SIGNATURE	US	63/060,396	8/3/20

**SCHEDULE I**

<b>Grantor</b>	<b>Title</b>	<b>Jurisdiction</b>	<b>Application/ Publication No.</b>	<b>Filing Date</b>
3D Systems, Inc.	THREE-DIMENSIONAL PRINTING SYSTEM THAT MINIMIZES USE OF METAL POWDER	US	63/065,847	8/14/20
3D Systems, Inc.	EFFICIENT BULK UNFUSED POWDER REMOVAL SYSTEM AND METHOD	US	63/065,859	8/14/20
3D Systems, Inc.	THREE-DIMENSIONAL PRINTING SYSTEM WITH IMPROVED BUILD CHAMBER	US	16/999,406	8/21/20
3D Systems, Inc.	A METHOD OF OPTIMIZING MANUFACTURE OF A THREE-DIMENSIONAL ARTICLE HAVING AN INTERFACE SURFACE	US	17/001,098	8/24/20
3D Systems, Inc.	METHOD FOR FORMING COMPLEX HALLOW MODELS FROM LOW MODULUS MATERIAL	US	17/013,093	9/04/20
3D Systems, Inc.	SCALABLE AND FAST THREE DIMENSIONAL PRINTING SYSTEM	US	17/019,600	9/14/20
3D Systems, Inc.	SHELF-STABLE BUILD MATERIALS FOR 3D PRINTING	US	17/060552	10/1/20
3D Systems, Inc.	OPTICALLY ACTIVE BUILD MATERIALS FOR 3D PRINTING	US	17/060826	10/1/20
3D Systems, Inc.	THREE-DIMENSIONAL PRINT ENGINE WITH LARGE AREA BUILD PLANE HAVING OPTIMIZED GAS FLOW DIRECTOR STRUCTURES	US	63/086837	10/2/20
3D Systems, Inc.	PULSE TRANSFER FOR LARGE AREA METAL FUSION SYSTEM	US	63/087105	10/2/20
3D Systems, Inc.	IMPROVED CUSTOMIZED SURGICAL GUIDES	US	63/093,825	10/20/20
3D Systems, Inc.	THREE-DIMENSIONAL PRINTING SYSTEM WITH IMPROVED MOTION AND IMAGING CONTROL	US	63/105,951	10/27/20
3D Systems, Inc.	THREE-DIMENSIONAL PRINTING SYSTEMS HAVING SEMIPERMEABLE TRANSPARENT SHEET WITH AEROSTATIC SUPPORT	US	17/086,049	10/30/20
3D Systems, Inc.	THREE-DIMENSIONAL PRINTING SYSTEM WITH IMPROVED OPTICAL PATH	US	17/097,242	11/13/20

**SCHEDULE I**

<b>Grantor</b>	<b>Title</b>	<b>Jurisdiction</b>	<b>Application/ Publication No.</b>	<b>Filing Date</b>
3D Systems, Inc.	BUILD MATERIALS FOR PRINTING 3D ARTICLES	US	63/114,118	11/16/20
3D Systems, Inc.	HIGH VOLUME MANUFACTURING METHOD FOR PRECISION ARTICLES BASED ON THREE-DIMENSIONAL PRINTING	US	16/950,516	11/17/20
3D Systems, Inc.	HIGH VOLUME MANUFACTURING METHOD FOR PRECISION ARTICLES BASED ON THREE-DIMENSIONAL PRINTING	US	17/099,842	11/17/20
3D Systems, Inc.	METHOD AND SYSTEM FOR THREE-DIMENSIONAL PRINT ORIENTED IMAGE SEGMENTATION	US	17/111,094	12/3/20
3D Systems, Inc.	FLAME RESISTANT BUILD MATERIALS AND ASSOCIATED PRINTED 3D ARTICLES	US	63/123,739	12/10/20
3D Systems, Inc.	CARRIER MATRIX FOR FACILITATING TRANSFER OF SKIN CORES FROM DONOR SITE TO WOUND SITE	US	63/124,156	12/11/20
3D Systems, Inc.	THREE DIMENSIONAL PRINTER HAVING PLATEN SECTIONS WITH COMPRESSIBLE VERTICAL INTERFACIAL ENGAGEMENT	US	17/126,216	12/18/20
3D Systems, Inc.	THREE-DIMENSIONAL PRINTER HAVING PLATFORM SECTION REMOVABLE FROM ACTUATION IN PRINTER CHASSIS	US	17/126,224	12/18/20

**PATENT****RECORDED: 02/02/2021****REEL: 055206 FRAME: 0498**