PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT7172879

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
ESSENTIUM, INC.	09/02/2021

RECEIVING PARTY DATA

Name:	QSHGP, INC.
Street Address:	8801 SOUTH YALE AVE.
Internal Address:	SUITE 380
City:	TULSA
State/Country:	OKLAHOMA
Postal Code:	74137

PROPERTY NUMBERS Total: 29

Property Type	Number
PCT Number:	US2015034004
PCT Number:	US1628436
PCT Number:	US2016040487
PCT Number:	US2017059878
PCT Number:	US2018018629
PCT Number:	US2018033409
PCT Number:	US2018036038
PCT Number:	US2018062605
PCT Number:	US2019017235
PCT Number:	US1943894
PCT Number:	US2014072441
PCT Number:	US1963275
PCT Number:	US2016982
PCT Number:	US2016983
PCT Number:	US2019043427
PCT Number:	US2020059151
PCT Number:	US2130075
PCT Number:	US2059154
PCT Number:	US2016979

PATENT REEL: 058994 FRAME: 0272

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Property Type	Number
PCT Number:	US2019023197
PCT Number:	US2041504
PCT Number:	US2019245
PCT Number:	US2063736
PCT Number:	US2024682
PCT Number:	US2129075
PCT Number:	US2021030225
PCT Number:	US2136150
PCT Number:	US2139841
PCT Number:	US2018057084

CORRESPONDENCE DATA

Fax Number: (214)661-4552

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: 2149536500

Email: ptomail1@bakerbotts.com **Correspondent Name:** BAKER BOTTS L.L.P.

Address Line 1: 2001 ROSS AVENUE, SUITE 900

Address Line 4: DALLAS, TEXAS 75201

ATTORNEY DOCKET NUMBER:	004157.0614
NAME OF SUBMITTER:	ESMERALDA E. PADEN
SIGNATURE:	/EEPaden/
DATE SIGNED:	02/11/2022

Total Attachments: 12

source=Essentium - IP Security Agreement (executed)_Active_67296435_1#page1.tif source=Essentium - IP Security Agreement (executed)_Active_67296435_1#page2.tif source=Essentium - IP Security Agreement (executed)_Active_67296435_1#page3.tif source=Essentium - IP Security Agreement (executed)_Active_67296435_1#page4.tif source=Essentium - IP Security Agreement (executed)_Active_67296435_1#page5.tif source=Essentium - IP Security Agreement (executed)_Active_67296435_1#page6.tif source=Essentium - IP Security Agreement (executed)_Active_67296435_1#page7.tif source=Essentium - IP Security Agreement (executed)_Active_67296435_1#page8.tif source=Essentium - IP Security Agreement (executed)_Active_67296435_1#page10.tif source=Essentium - IP Security Agreement (executed)_Active_67296435_1#page10.tif source=Essentium - IP Security Agreement (executed)_Active_67296435_1#page11.tif source=Essentium - IP Security Agreement (executed)_Active_67296435_1#page11.tif source=Essentium - IP Security Agreement (executed)_Active_67296435_1#page11.tif

INTELLECTUAL PROPERTY SECURITY AGREEMENT

This INTELLECTUAL PROPERTY SECURITY AGREEMENT ("IP Security Agreement"), dated as of September 2, 2021, is made by and between Essentium, Inc., a Delaware corporation (the "Grantor") in favor of QSHGP, Inc., a Texas corporation (the "Collateral Agent"), as collateral agent for the purchasers under the Note Purchase Agreement referred to below.

WHEREAS, the Grantor has entered into a Note Purchase Agreement dated as of August 27, 2021 (the "Note Purchase Agreement"), with the Collateral Agent and the purchasers (the "Purchasers") party thereto. Capitalized terms used herein and not otherwise defined herein shall have the respective meanings given to them in the Note Purchase Agreement.

WHEREAS, as a condition precedent to the making of the Loans by the Purchasers under the Note Purchase Agreement, the Grantor has granted to the Collateral Agent, for the benefit of the Purchasers, a security interest in, among other property, certain intellectual property of the Grantor, and has agreed to execute and deliver this IP Security Agreement for recording with the United States Patent and Trademark Office.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

- 1. <u>Grant of Security</u>. The Grantor hereby pledges and grants to the Collateral Agent for the ratable benefit of the Purchasers a security interest in and to all of the right, title, and interest of the Grantor in, to, and under the following (the "**IP Collateral**"):
 - (a) the patents and patent applications set forth in <u>Schedule 1</u> hereto and all reissues, divisions, continuations, continuations-in-part, renewals, extensions, and reexaminations thereof and amendments thereto (the "**Patents**");
 - (b) the trademark registrations and applications set forth in <u>Schedule 2</u> hereto, together with the goodwill connected with the use thereof and symbolized thereby, and all extensions and renewals thereof (the "**Trademarks**"), excluding only United States intent to use trademark applications to the extent that, and solely during the period in which, the grant, attachment, or enforcement of a security interest therein would, under applicable federal law, impair the registrability of such applications or the validity or enforceability of registrations issuing from such applications;
 - (c) all rights of any kind whatsoever of the Grantor accruing under any of the foregoing provided by applicable law of any jurisdiction, by international treaties and conventions, and otherwise throughout the world;
 - (d) any and all royalties, fees, income, payments, and other proceeds now or hereafter due or payable with respect to any and all of the foregoing; and

- (e) any and all claims and causes of action with respect to any of the foregoing, whether occurring before, on, or after the date hereof, including all rights to and claims for damages, restitution, and injunctive and other legal and equitable relief for past, present, and future infringement, dilution, misappropriation, violation, misuse, breach, or default, with the right, but no obligation, to sue for such legal and equitable relief and to collect, or otherwise recover, any such damages.
- 2. <u>Recordation</u>. The Grantor authorizes the Commissioner for Patents, the Commissioner for Trademarks and any other government officials to record and register this IP Security Agreement upon request by the Collateral Agent.
- 3. <u>Loan Documents</u>. This IP Security Agreement has been entered into pursuant to and in conjunction with the Note Purchase Agreement, which is hereby incorporated by reference. The provisions of the Note Purchase Agreement shall supersede and control over any conflicting or inconsistent provision herein. The rights and remedies of the Collateral Agent with respect to the IP Collateral are as provided by the Note Purchase Agreement, the Notes and related documents, and nothing in this IP Security Agreement shall be deemed to limit such rights and remedies.
- 4. <u>Execution in Counterparts</u>. This IP Security Agreement may be executed in counterparts (and by different parties hereto in different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. Delivery of an executed counterpart of a signature page to this IP Security Agreement by facsimile or in electronic (i.e., "pdf" or "tif") format shall be effective as delivery of a manually executed counterpart of this IP Security Agreement.
- 5. <u>Successors and Assigns</u>. This IP Security Agreement will be binding on and shall inure to the benefit of the parties hereto and their respective successors and assigns.
- 6. <u>Governing Law</u>. This IP Security Agreement shall be governed by, construed under and enforced in accordance with the laws of the State of New York.

[SIGNATURE PAGE FOLLOWS]

66386758

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

ESSENTIUM, INC.

DocuSigned by: By: Blake Tipel
Name: Blake Teipel

Title: Chief Executive Officer

Address for Notices:

19025 N. Heatherwilde Blvd., Suite 100

Pflugerville, TX 78660

Signature Page to IP Security Agreement

AGREED TO AND ACCEPTED:

QSHGP, INC., as Collateral Agent

--- DocuSigned by: By: Kichard Hopel
Name: Richard C. Hojel

Title: Chairman

Address for Notices:

8801 South Yale Ave., Suite 380

Tulsa, OK 74137

Signature Page to IP Security Agreement

SCHEDULE 1

PATENTS

[See attached.]

us us	:62711763	7/30/2018	Converted	HIGH FREQUENCY ADHESIVE BONDING	ESS032	ESS032	ESS032 PCT US	US Patent
Viet Nam	:1-2021-00869	:2/22/2021	Pending	ADHESIVE	:ESS032	ESS032	ESS032_PCT_VN	Foreign Patent
В	19 845 498.5	7/29/2019	Pending	₽	ESS032	ESS032	ESS032_PCT_EP	Foreign Patent
China	2019800511506	2/1/2021	Pending	HIGH FREQUENCY ADHESIVE BONDING	ESS032	ESS032	ESS032_PCT_CN	Foreign Patent
ব্	PCT/US19/17235	2/8/2019	Done	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	ESS031	ESS031	ESS031_PCT	2
US	16967980	8/6/2020	Pending	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	ESS031	ESS031	ESS031_PCT_US	US Patent
US	62627950	2/8/2018	Converted	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	ESS031		ESS031	US Patent
Japan	2020-542788	8/7/2020	Pending	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	ESS031	ESS031	ESS031_PCT_JP	Foreign Patent
뭥	19 750 898.9	8/7/2020	Pending	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	ESS031	ESS031	ESS031_PCT_EP	Foreign Patent
China	2019800218888	9/24/2020	Pending	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	ESS031	ESS031	ESS031_PCT_CN	Foreign Patent
Canada	3090686	8/6/2020	Pending	:NULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	ESS031	ESS031	ESS031_PCT_CA	Foreign Patent
፭	PCT/US18/62605	11/27/2018	Done	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	ESS030	ESS030	ESS030_PCT	ব্
SU	16766533	5/22/2020	Pending	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	ESS030	ESS030	ESS030_PCT_US	US Patent
us	62591015	11/27/2017	:Converted	OF PRODUCING	ESS030		ESS030	US Patent
Singapore	10202106580W		Pending	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	ESS030	ESS030	ESS030_PCT_SG_DIV	Foreign Patent
Singapore	11202004522R		Pending	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	ESS030	ESS030	ESS030_PCT_SG	Foreign Patent
Korea, Republic of	10-2020-7017142		Pending	OF PRODUCING A TOOLING	ESS030	ESS030	ESS030_PCT_KR	Foreign Patent
Japan	2020-546304	:	Pending	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	ESS030	ESS030	ESS030_PCT_JP	Foreign Patent
B	18 882 246.4		Pending	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	ESS030	ESS030	ESS030_PCT_EP	Foreign Patent
China	2018800767274	UI.	Pending	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	ESS030	ESS030	ESS030_PCT_CN	Foreign Patent
Canada		7/5/2021	Pending	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	ESS030	ESS030	ESS030_PCT_CA	Foreign Patent
<u>P</u>	PCT/US18/36038		Done	AND SHORT FIBER MATERIALS	ESS025	ESS025	ESS025_PCT	3
F 6	80061999	7102/6/01	Dending	THORD THEMPHONE ASTIC COMPOSITES WITH LANG AND SHORT FIRED MATERIAL OF THE INTERPRETATION OF THE SHORT HEMPHONE WINDOWS THE SHORT HE SHORT HE SHOTT HE SHORT	E3025	ESSO25	ESSO25 PCT IIS	IIS Patent
Japan	2019-568183		Pending	HIBRID THERMOPLASTIC COMPOSITES WITH LONG AND SHORT FIRED MATERIALS AND NATURAL NANOPARTICLES	ESS025	E55025	ESS025_PCT_JP	Foreign Patent
8	:18812756.7	2	Pending	HYBRID THERMOPLASTIC COMPOSITIES WITH LONG AND SHORT FIBER MATERIALS AND NATURAL NANOPARTICLES	:ESS025	ESS025	ESS025_PCT_EP	Foreign Patent
q	PCT/US18/33409	5/18/2018	Done		ESS024	ESS024	ESS024_PCT	ব
us	16614600		Pending	THREE DIMENSIONAL PRINTER APPARATUS	ESS024	ESS024_PCT	ESS024_PCT_US	US Patent
US	62508464	5/19/2017	Converted	THREE DIMENSIONAL PRINTER APPARATUS	ESS024		ESS024	US Patent
뭥	18 802 059.8		Pending	THREE DIMENSIONAL PRINTER APPARATUS	ESS024	ESS024_PCT	ESS024_PCT_EP	Foreign Patent
China	201880032235	11/15/2019	Pending		ESS024	ESS024_PCT	ESS024_PCT_CN	Foreign Patent
ਧੋ	PCT/US18/18629		Done	PLASMA CONDUCTION PATHWAY FOR THE APPLICATION OF ELECTROMAGENTIC ENERGY TO 3D	ESS018	ESS018	ESS018_PCT	ব্
US	16498079		Pending	ENERGY TO	ESS018	ESS018	ESS018_PCT_US	US Patent
US	62463368	2/24/2017	Converted	ATMOSPHERIC PLASMA CONDUCTION PATHWAY FOR THE APPLICATION OF ELECTROMAGENTIC ENERGY TO 3D PRINTED PARTS	ESS018		ESS018	US Patent
8	18 756 979.3		Pending	APPLICATION OF ELECTROMAGENTIC ENERGY TO	ESS018	ESS018	ESS018_PCT_EP	Foreign Patent
China	201880013621X		Pending	ATMOSPHERIC PLASMA CONDUCTION PATHWAY FOR THE APPLICATION OF ELECTROMAGENTIC ENERGY TO 3D PRINTED PARTS	ESS018	ESS018	ESS018_PCT_CN	Foreign Patent
Ş	:PCT/US17/59878	11/1/2017	:Done	THREE DIMENSIONAL PRINTER APPARATUS	ESS008	ESS008	ESS008_PCT	ব
US S	16467693	6/7/2019	Pending	THREE DIMENSIONAL PRINTER APPARATUS	ESS008	ESS008	ESS008 PCT US	US Patent
noig soig	62/416 900	11/3/2016	rending	THIDEE DIMENSIANAN DENATES ADOADATIS	BOOOS	Doolog	E00000_FC.I_FIX	Foreign Patent
	0.500000033	6102/6/6	rending	THECE DIMENSIONAL PRINTER APPARATICS THECE DIMENSIONAL PRINTER APPARATICS THECE DIMENSIONAL PRINTER APPARATICS	00000	E0008	124 900353	Foreign Patent
China	:17901EGO 0	:6/2/2019	Issued	THREE DIMENSIONAL PRINTER APPARATUS	ESS008	E55008	:ESS008_PCT_CN	Foreign Patent
P.C.	PCT/USZ016/040487	:6/30/2016	Done	SWITHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOMATERIALS	:ESS003	ESS003	ESS003_PCT	,
US	16820026	3/16/2020	Pending	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOMATERIALS	ESS003	ESS003	ESS003_US_DIV	US Patent
us	15739369	12/22/2017	Issued	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOMATERIALS	ESS003	ESS003	ESS003_PCT_US	US Patent
SN	62186417	6/30/2015	Converted	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOMATERIALS	ESS003		ESS003	US Patent
Mexico		12/30/2017	Terminated	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOMATERIALS	ESS003	ESS003	ESS003_PCT_MX	Foreign Patent
Korea, Republic of	2018-7002996	1/30/2018	Pending	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOMATERIALS	ESS003	ESS003	ESS003_PCT_KR	Foreign Patent
Japan	2017-568410	12/28/2017	Issued	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOMATERIALS	ESS003	ESS003	:ESS003_PCT_JP	Foreign Patent
8	16 818 820.9	1/3/2018	Granted	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOMATERIALS	ESS003	ESS003	ESS003_PCT_EPO	Foreign Patent
Canada	2991063	12/28/2017	Pending	SWITHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOMATERIALS	ESS003	ESS003	ESS003 PCT CA	Foreign Patent
ሻ ፣	PCTUS1628436	:4/20/2016	Done	NATURAL FIBER COMPOSITE AND METHOD OF PRODUCTION	ESS002	ESS002	ESS002 PCT	3
ī. 5	31083321	210C/0C/01.	CONVENED	INATI IDAD CATE AND METITOD OF PRODUCTION	ZOOSCII	ECCODO	ZOUCCE:	US Patent
3	16 /83 /63.2	11/1//2017	Pending	NATURAL FIBER COMPOSITE AND METHOD OF PRODUCTION	ESS002	ESSUUZ	ESSUUZ_PCI_EP	Foreign Patent
} 2	PC1/052015/34004	6/3/2015	Done	CELLULOSE NANCACKYS IAL PALITIMEK CAMPADSI IE	ESSUUI	ESSOOT	ESSUOT PCI	2
\	15315550	12/1/2016	Issued	CELLULOSE NANOCRYSTAL POLYMER COMPOSITE	ESS001	ESS001	ESS001_PCT_US	US Patent
S	:62007224	:6/3/2014	Converted	CELLULOSE NANOCRYSTAL POLYMER COMPOSITE	ESS001		:ESS001	US Patent
8	EP15809364.1	12/22/2016	Pending	CELLULOSE NAWOCRYSTAL POLYMER COMPOSITE	ESSUUL	ESS001	ESSUUL PCI LEP	Foreign Faterit
							TOTAL PARTY CO.	

EUIPO	.000 014 414					: ECCOPO		
China	2019304861747	9/4/2019	Issued	FLIMENT OR	ESS058	ESS058	ESS058_CN_DS	Foreign Patent
ğ	PCT/US19/23197	3/20/2019	Done	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	ESS057	:EMS107	ESS057_PCT	3
US	16982859	9/21/2020	Pending	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	ESS057	:EMS107	ESS057_PCT_US	US Patent
us	62646019	3/21/2018	Converted	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	ESS057		EMS107	US Patent
Singapore	11202009061R	9/16/2020	Pending	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	ESS057	EMS107	:ESS057_PCT_SG	Foreign Patent
Korea, Republic of	:10-2020-7029952	10/19/2020	Pending	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	ESS057	:EMS107	ESS057_PCT_KR	Foreign Patent
EPO	19770959.5	10/9/2020	Pending	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	ESS057	:EMS107	ESS057_PCT_EP	Foreign Patent
Chin	35	11/23/2020	Pending	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	ESS057	EMS107	ESS057_PCT_CN	Foreign Patent
	:3094355	9/17/2020	Pending	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	ESS057	EMS107	ESS057_PCT_CA	Foreign Patent
PCT	PCTUS2016979	2/6/2020	Pending	FLAMENT CONTAINER	ESS056	:ESS056_NP	ESS056_NP_PCT	PCI
US	16370135	3/29/2019	Pending	FILAMENT CONTAINER	ESS056		ESS056_NP	US Patent
US	:17366558	7/2/2021	Pending	THREE-DIMENSIONAL PRINTER HEAD INCLUDING AN AUTOWATTIC TOUGHDOWN APPARATUS	ESS054	ESS054_NP	ESS054_US_CNT	US Patent
US	:16359671	:3/20/2019	Issued	THREE-DIMENSIONAL PRINTER HEAD INCLUDING AN AUTOWATTC TOUGHDOWN APPARATUS	ESS054		:ESS054_NP	US Patent
US		1/25/2019	Terminated	;PLASMA FUSING	ESS053		ESS053_NP	US Patent
ব	PCTUS2059154	11/5/2020	Pending	NOZZLE ASSEMBLY FOR PRINTER HEAD OF 30 PRINTER	ESS052	ESS052_NP	ESS052_NP_PCT	ব
US	62930662	:11/5/2019	Converted	NOZZLE ASSEMBLY FOR PRINTER HEAD OF 30 PRINTER	ESS052		:ESS052_NP	US Patent
Taiwan	:109138729	11/5/2020	Pending	NOZZLE ASSEMBLY FOR PRINTER HEAD OF 3D PRINTER	ESS052	ESS052_NP	ESS052_NP_TW	Foreign Patent
ব	PCTUS2130075	4/30/2021	Pending	EMITTER AND METHOD FOR PLASMA FUSING OF MATERIALS	ESS051	:ESS051	ESS051_PCT	፭
us	63018901	5/1/2020	Pending	EMITTER AND METHOD FOR PLASMA FUSING OF MATERIALS	ESS051		ESS051	US Patent
Taiwan	:110115824	4/30/2021	Pending	EMITTER AND METHOD FOR PLASMA FUSING OF MATERIALS	ESS051	ESS051	:ESS051_TW	Foreign Patent
US		10/31/2019	Terminated	NOVEL EXTRUSION METHOD	ESS050		ESS050_NP	US Patent
SUS		10/31/2019	Terminated	COMPOSITE FINANCII	ESS049		ESS049_NP	US Patent
ব	PCT/US2020/059151	11/5/2020	Pending	NOZZLE ASSEMBLY WITH A SERPENTINE PATH FOR PRINTER HEAD OF 3D	ESS048	ESS048_NP	ESS048_NP_PCT	ব
US.	:62930659	11/5/2019	Converted	HEAD OF	ESS048		ESS048_NP	US Patent
Taiwan	109138726	11/5/2020	Pending	NOZZLE ASSEMBLY WITH A SERPENTINE PATH FOR PRINTER HEAD OF 3D	ESS048	ESS048_NP	ESS048_NP_TW	Foreign Patent
us		10/31/2019	Terminated	;PUSMA DE-BIND	ESS047		ESS047_NP	US Patent
US	29679089	2/1/2019	Issued	THREE-DIMENSIONAL PRINTER	ESS045		ESS045	US Patent
EUIPO	006 638 524	}- <i>-</i>	Issued	THREE-DIMENSIONAL PRINTER	ESS045	ESS045	ESS045_EP_DS	Foreign Patent
	PCT/US19/43427		Ö	HIGH SPEED EXTRUSION 3D PRINTER NOZZLE	ESS044	EMS115	ESS044_NP_PCT	፭
us	16268873	2/6/2019	Pending	HIGH SPEED EXTRUSION 3D PRINTER NOZZLE	ESS044	:EMS115	ESS044_NP	US Patent
us	62703700	7/26/2018	Converted	HIGH SPEED EXTRUSION 3D PRINTER NOZZLE	ESS044		EMS115	US Patent
	10-2021-7004096		Pending	HIGH SPEED EXTRUSION 3D PRINTER NOZZIE	ESS044	EMS115	ESS044_PCT_SK	Foreign Patent
	11202100454X		Pending	HIGH SPEED EXTRUSION 3D PRINTER NOZZILE	ESS044	EMS115	ESS044_PCT_SG	Foreign Patent
B	19 840 371.9		Pending	HIGH SPEED EXTRUSION 3D PRINTER NOZZLE	ESS044	EMS115	ESS044_PCT_EP	Foreign Patent
China	2019800499364	1/26/2021	Pending	HIGH SPEED EXTRUSION 3D PRINTER NOZZLE	ESS044	EMS115	ESS044_PCT_CN	Foreign Patent
Canada	3107073	1/20/2021	Pending	HIGH SPEED EXTRUSION 3D PRINTER NOZZIE	ESS044	EMS115	ESS044_PCT_CA	Foreign Patent
<u></u>	PCTUS2016983	2/6/2020	Pending	FILAMENT BUFFER	ESS043	ESS043 NP	ESS043 NP PCT	3
	16273825	5/12/2019	isalied.	ETI AMENT BI FITTO	FS5043		ESS043 NP	IIS Patient
S 5	PCTUS2016982	2/6/2020	Pending	INPAGED HEATING OF ADDITIVE PRINTED PART	ESS042	ESS042 NP	ESS042 NP PCT	PCT cache
	102/3012	6102/21/8	New	IMPARED HEALTH COR AND THE BOTH THE DATE	24000	ESSOA2 ND	TSCOLUTION CANDON	US Patent
Europe		8/12/2021	New	:NHAARD HEALING OF ADDILIVE PRINTED PART	ESSU42	ESSUAZ_NP	ESS042_PCI_EP	Foreign Patent
China		8/12/2021	New	:NARAGED HEATING OF ADDITIVE PRINTED PART	ESS042	:ESS042_NP	ESS042_PCT_CN	Foreign Patent
ব	PCTUS1963275	11/26/2019	Done	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELLULOSE DURING MANUFACTURING	ESS040	ESS040	ESS040_PCT_NP	2
	17298232	5/28/2021	Pending	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELLULOSE DURING MANUFACTURING	ESS040	ESS040	ESS040_PCT_US	US Patent
US	62773649	11/30/2018	Converted	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELLULOSE DURING MANUFACTURING	ESSO40		ESS040	US Patent
Korea, Republic of	1020217018009	6/11/2021	Pending	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELLULOSE DURING MANUFACTURING	ESS040	ESS040	ESS040_PCT_SK	Foreign Patent
Japan		5/28/2021	Pending	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELLULOSE DURING MANUFACTURING	ESS040	ESS040	ESS040_PCT_JP	Foreign Patent
8	:19890758.6	5/28/2021	Pending	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELLULOSE DURING MANUFACTURING	ESSO40	ESS040	ESSO40 PCT EP	Foreign Patent
China	2019800787338	5/28/2021	Pending	PROJECTS FOR INDROPHOBIC MODIFICATION OF NANOCELLULOSE DURING MANUFACTURING	ESS040	ESS040	ESS040_PCT_CN	Foreign Patent
፭	PCT/US2014/072441	12/26/2014	Pending	STORMAN ENDOCED COCHIZED HEALING OF CAN FIXED POCHMER COMPOSITES FOR ENHANCED IMPERSEND BONDING OF FUSED FIXMENT	ESS035	:ESS035_US_PV	ESS035_PCT_NP	2
US	:61920937	12/26/2013	Converted	FIRECOUNTE INDUCED COCALIZED HEATING OF ON FILLED FORMER COMPOSITES FOR ENHANCED INTER-BEIO BONDING OF FOSED FIDAMENT	ESS035		ESS035 US PV	US Patent
115	15108017	6/24/2016	Tegnard.	FIGURE STEP BOTS.	ESCO35		ESCOSE ND	IIS Patent
SIIS	16517419	9102/276	Pending		ES035	FSS035 NP	ESSOSS ONT	IIS Patent
Topon		9100/20/9:	Dending		26035	ECCOSE ND	GL GN 360553	Foreign Patent
Japan Vocas Benedic of	:2019-136237	7/24/2019	Pending		ESS035	ESS035_NP	ESSO35_JP_DIV	Foreign Patent
EPO	14878393.9	6/24/2016	Pending		ESS035	:ESS035_US_PV	ESS035_EP_NP	Foreign Patent
Canada	2,935,221	12/26/2014	Pending	The state of the s	ESS035	ESS035_NP	ESS035_CA_NP	Foreign Patent

	Termina	Tenning :75-21-2 Terminated :56/6/20	28.
	Pending	2	Pending 4/23/2021
THE SHIFT	SAFIE	Ahandoned	Ahandoned
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THREE-DIMENSIONAL PRINTER COMPRISING FIRST AND SECOND PRINT HEADS AND FIRST, SECOND, AND THIRD DIVIDERS	ERS)ERS Pending)ERS Pending
	Pending	:4/2//: Pending::4/28/2/:	Pending :4/28/2021
	Pending	ĺ.,	ĺ.,
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	Pending	no .	Pending 1/29/2021
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ADAPTIVE TOOLPATH FOR PRODUCING MATERIAL EXTRUSION 3D PRINTED MECHANICAL TESTING SPECIMENS		Pending	Pending
DAPTIVE TOOLPATH FOR PRODUCING MATERIAL EXTRUSION 3D PRINTED MECHANICAL TESTING SPECIMENS		Pending	Pending
	Pending		Pending :6/7/2021
	Pending	<u>.</u>	<u>.</u>
	New	New	New
	Pending	Pending	Pending
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	Abandor	:Abandoned :5/8/20	Abandoned :5/8/2020
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	Pending		Pending (5/1/2020)
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US Patent	ሻ	US Patent	Foreign Patent	Foreign Patent	Foreign Patent	Foreign Patent	Foreign Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent	US Patent
TRI103_NP	TRI101_PCT	TRI101	TRI101_PCT_US	TRI101_PCT_SG	TRI101_PCT_EP	TRI101_PCT_CN	TRI101_PCT_CA	ESS242	ESS241	ESS237	ESS235	ESS234	ESS233	ESS232	ESS231	ESS230	ESS229	ESS228	ESS227	ESS187	ESS186_PRV	ESS182	ESS168	ESS167_US_D	ESS161	ESS160_US_D	:ESS159
	TR1101		TRI101	TRI101	TRI101	TRI101	TRI101																				
TR1103	TRIIOI	TRI101	TRILOI	TRI101	TRI101	TRI101	TRI101	ESS242	ESS241	ESS237	ESS235	ESS234	ESS233	ESS232	ESS231	ESS230	ESS229	ESS228	ESS227	ESS187	ESS186	ESS182	ESS168	ESS167	ESS161	ESS160	:ESS159
 3D Printed Prosthetic Sockets 	THREE DIMENSIONAL PRINT METHOD AND PART				•		T METHOD AND PART	Chamber Catalytic Converter	THERMOSET DEPOSITION SYSTEM	ADDITIVE CHEMISTRIES FOR ENABLING IN-SITU CURING OF THERMOSET RESINS FOR ADDITIVE MANUFACTURING PROCESSES	tment Mechanisms	Testing Wire Traces	Reduction of warpage - preventing potato chipping	Process Controls	Wire Feeding	Environmental Chamber Control	Support Bed	Wire Pre+Heating	Head	Filament Buffer	METHOD AND SYSTEM FOR TRANSFERRING FILES TO AN AIR-GAPPED THREE-DIMENSIONAL PRINTER	AM Value Ranking	3D PRINTER SYSTEM INCLUDING HARDWARE ABSTRACTION LAYER	GRAPHICAL USER INTERFACE FOR PRESENTATION ON A DISPLAY SCREEN OR PORTION THEREOF	Nozzle Pre-Heat	GRAPHICAL USER INTERFACE FOR PRESENTATION ON A DISPLAY SCREEN OR PORTION THEREOF	Dual Head Control
New	Done	Converted	Pending	Pending	Pending	Pending	Pending 4/23/2020 :30	New	Pending	Pending	Abandoned	New	New	New	New	New	Abandoned	New	New	New	Pending	New	Pending	Pending	Pending	Pending	Halted
4/15/2021	10/23/2018	10/23/2017	4/23/2020	4/20/2020	5/22/2020	6/3/2020	4/23/2020	9/2/2021	7/22/2021	7/22/2021		7/30/2021	7/30/2021	7/30/2021	7/30/2021	7/30/2021		7/30/2021	7/30/2021	8/14/2021	6/15/2021	7/21/2021	4/28/2021	4/27/2021	4/28/2021	4/27/2021	:7/1/2021
	PCT/US18/57084	62575810	16758716	11202003570R	18 870 769.9	201880078307X	3080150		63224842	63224844											63210785		63180932	29780999	63180971	29780995	
US	PCT	us	United States of America	Singapore	EPO	China	Canada	US	US	us	US	US	US	SNS	US	SN	US	SN	SUS	SN	US	us	US	SUS	us	SN	ıs

SCHEDULE 2

TRADEMARKS

[See attached.]

	China	56550758	6/1/2021	Pending	:ESSIOSS :ESSENTIUM Flament Care System		ESS055_CN_TM_17	Foreign Trademark
	China	56565426	6/1/2021	Pending	:ESSENTIUM Filament Care System		ESS055_CN_TM_12	Foreign Trademark
	SU	88285497	2/1/2019	Pending	:ESQ046 Hozzle		ESS046	US Trademark
	China	56551885	6/1/2021		;Hozzle		ESS046_CN_TM_7	Foreign Trademark
	China	56565099	6/1/2021	Pending	ESQ046 Hozzle		ESS046_CN_TM_17	Foreign Trademark
-	SN:	88285473	2/1/2019		;ArborX		ESS041	US Trademark
	:China	56550/34	6/1/2021	Pending	ESSI41 AMOORX	÷	ESSU41_CN_IM_1/	Foreign Trademark
	China	:56563690	6/1/2021	Pending	Arborx		:ESS041_CN_TM_1	Foreign Trademark
	SOS	:88188558	11/13/2018	Abandoned	: HSE 180 S		ESS039	US Irademark
	5		11/13/2018	Pending	;HSL 18U (090)		E55-039	US Irademark
Taiwan		:109093253	12/30/2020	Pending	HSE 180 S		ESS039_TW_TM	Foreign Trademark
Singapore		:40201920216W	9/18/2019	Registered	HSE 180 S		ESS039_SG_TM	Foreign Trademark
EPO .		:018130550	9/30/2019	Registered	H6E 180 S		:ESS039_EP_TM	Foreign Trademark
		42186643	11/6/2019	}	;15E 180 S		ESS039_CN_TM_7	Foreign Trademark
	: ₽	:42148559	11/6/2019	-	HSE 180 S		ESS039_CN_TM_17	Foreign Trademark
	S	88188558	11/9/2018	:	ESSENTUM HIGH SPEED EXTRUSION		ESS038	US Trademark
S		88188657	11/9/2018	Abandoned	HIGH SPEED EXTRUSION		ESS037	US Trademark
	SN	:88188701	11/9/2018	Abandoned	ES006 HEE		ESS036	US Trademark
	•	109093252	12/30/2020	Pending	:		ESS036_TW_TM	Foreign Trademark
Singapore	:	40201926581Q	12/6/2019	Registered	ES036 HSE	ESS036	ESS036_SG_TM	Foreign Trademark
	EPO	:018163942	12/6/2019	Registered	ES036 :HSE	ESS036	ESS036_EP_TM	Foreign Trademark
	:China	:42909322	12/9/2019		ES036 HSE		ESS036_CN_TM_7	Foreign Trademark
China	China	:42885448	12/6/2019	Pending	HSE	ESS036		Foreign Trademark
SUS	SD	88838976	3/18/2020	Pending	Essentium DyBox			US Trademark
China	China	56298365	5/24/2021	Pending	ESSENTUM DRABOX		ESS029_CN_TM_11	Foreign Trademark
	SN;	87872464	4/11/2018	2	ESS028 :FlashFuse Flament :		ESS028	US Trademark
China	China	56320130	5/24/2021	Pending			ESS028_CN_TM_17	Foreign Trademark
SUS	SD:	87375717	3/17/2017	:	À		ESS023	US Trademark
SO	su:	:87375693	3/17/2017	Registered			:ESS022	US Trademark
	China	56296777	5/24/2021	Pending	ESSENTIUM FLLANENT ;p		ESS022_CN_TM_17	Foreign Trademark
		87375669	3/17/2017	ă.			ESS021	US Trademark
China			4/9/2021				:ESS021_CN_TM_42	Foreign Trademark
SUS		87375750	3/17/2017	Registered	:ESSENTUM	÷	ESS020	US Trademark
		109093251	12/30/2020	Pending	HITMESSEH:		ESS020_TW_TM	Foreign Trademark
	sing		9/18/2019	egistered	ESSENTIUM		ESSUZU_SG_IM	Foreign Trademark
	ð	018130536	9/30/2019	Pending	ESSENTIUM		ESS020_EP_TM	Foreign Trademark
China	China	:49199416	8/25/2020	Pending	ESSENTILM		:ESS020_CN_TM2	Foreign Trademark
-		:42140773	11/6/2019	Abandoned	ESSENTIAM		ESS020_CN_TM_9	Foreign Trademark
China		42554728	11/25/2019	Pending	ESSENTUM	÷	:ESS020_CN_TM_7	Foreign Trademark
China	China	:42035003	11/1/2019	Registered	ESSENTIUM		:ESS020_CN_TM_17	Foreign Trademark
Canada	Canada		6/30/2021		ESSENTIUM		ESS020_CA_TM	Foreign Trademark
	S	87320665	2/1/2017	Registered			ESS017	US Trademark
			6/30/2021	Halted			ESS017_CN_TM_9	Foreign Trademark
China	: .	56303424	5/24/2021		ES017 FuseBox p	 	ESS017_CN_TM_7	Foreign Trademark
	S	:87320681	2/1/2017	Abandoned	IES016 :FlashFuse		ESS016	US Trademark
apore	Sin	40201921878V	10/8/2019	Registered	Flacinfuse	ESS016	ESS016_SG_TM	Foreign Trademark
B/	뜃:		10/10/2019	Registered	HashFuse	ESS016	ESS016_EP_TM	Foreign Trademark
۵.,	₽ !		12/9/2019	Registered	Hashfuse		ESS016_CN_TM_7	Foreign Trademark
ΓE	9	: :42847297	12/5/2019	- 7	: Pashiya	ESS016	ESS016 CN TM	Foreign Trademark
S.	SUS		11/24/2016	Halted	Fuse Process		:ESS007	US Trademark
۸-	۲s :		11/24/2016	Halted	Fuse Filament		ESS006	US Trademark
US	S		11/24/2016	alted	Fuse		ESS005	US Trademark
	SU		12/15/2021	New	:HSE (stylized logo)		:EMS114	US Trademark
	SUS		12/15/2021	- 1	HSE Flashfuse	;	EMS113	US Trademark
	۲ ا		3/31/2018	Terminated	HSE 180		EMS112	US Trademark
			3/31/2018		in (vine)		EMS111	US Trademark
	.c.	••••	12/15/2021	Terminated	STE (hhas)		EMS110	US Trademark
			10/15/2020	New	Sury)		EMS109	IIS Trademark
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REEL: 058994 FRAME: 0284

SOS	88843965	3/23/2020	Pending		 IZ	
US		8/6/2021	;New		ESS	US Trademark ESS226_US_TM
singapore	:4020211/245P	7/20/2021	(logo two line)		Ç	ark
China		6/30/2021) NEW		3 0	Foreign Irademark E55185_CN_IM_42
China		6/30/2021	New			
Canada	:2121832	7/20/2021	Pending			
Singapore	-4020211/244R	//20/2021	¢x Pending			.;
China		6/30/2021	New		ES	
China		6/30/2021	New		SS	
Canada	2121830	7/20/2021	Pending	ESS184 EssentiumWRX	SS	Foreign Trademark ESS184_CA_TM
SD.	90632737	4/8/2021	Pending		22	US Trademark ESS162_US_TM
	54661057	3/25/2021	ĺ	ESS145 Essentium (1	32:	Foreign Trademark ESS145_CN_TM_6
China	54661057	3/25/2021	2) Pending		23	Foreign Trademark ESS145_CN_TM_7
China	54635905	3/25/2021	Essentum (Transiteration 2) Pending	ESS145 Essentium (1	ESS	Foreign Trademark :ESS145_CN_TM_17
China	54635896	3/25/2021	Pending	ESS145 Essentium (1	ESS	Foreign Trademark ESS145_CN_TM_11
		3/25/2021	Ssentium (Transiteration 1) Pending	ESS144 Essentium (1	ES	Foreign Trademark :ESS144_CN_TM_6
China	54661023	3/25/2021	Pending	ESS144 Essentium (1	SS	Foreign Trademark ESS144_CN_TM_7
China	54665548	3/25/2021		ESS144 Essentium (1	SS	
China	54642910	3/25/2021	ssentum (Transiteration 1) Pending	ESS144 Essentium (7	ESS	Foreign Trademark :ESS144_CN_TM_11
SU		1/29/2014	BUILDING THE NEXT GENERATION OF ESSENTIAL MATERIALS Abandoned		SS	US Trademark :ESS129_US_TM
SU	:90168659	9/9/2020	: Pending	ESS117 ESSENTIUM HSE	<u>S</u>	
China	:44873899	3/25/2020	82	ESS115 ESSENTIUM	22:	
	35918051	1/14/2019		ESS114 ESSENTIUM	23.	Foreign Trademark ESS114_CN_TM_7
US	90168613	9/9/2020	;Pending	ESS111 ESSENTIUM HSE 180S	ES	US Trademark ESS111_US_TM
US	90751738		Pending		ESS	
SS	90726842	- :	:Pending		5	ESS095
Singapore	40202117243T	7/20/2021	RX		Ę	
Canada	2121827	7/20/2021	Pending		Ę	
Singapore	:40202003294X	2/14/2020	Registered			
EPO (.018198133	2/19/2020	Registered	ESS092 E (stylized logo - color)	ESS072 ESS	Foreign Trademark :ESS092_EP_TM
Chin in	24240230	2/27/2020	Porturing Doctoring		,	5
China	.44101635	2/24/2020	Panding		P. C.	
China	44240229	2/27/2020	- color)	ESSN92 :F (stylized logo - color)	J. [Foreign Trademark FSS092 CN TM 11
: Idiwali	109093634	1/20/2020	Penuling		5 0	dik
Singapore	-40202003293V	17/30/2020	Registered		ESS0/2	
:EBO	:018198131	2/19/2020	Registered			
China	44182644	2/24/2020	:Pending			Foreign Trademark :ESS072_CN_TM_17
China	44240231	2/27/2020	Registered	ESS072 E (stylized logo - black)	ESS072 ESS	Foreign Trademark ESS072_CN_TM_11
China	44240232	2/27/2020	Registered	ESS072 :E (stylized logo - black)	ESS072 ESS	Foreign Trademark :ESS072_CN_TM
SUS	:88684981	11/8/2019	stylized logo for E Essentium Industrial Additive Allowed	ESS064 stylized logo	SSE	US Trademark ESS064
SU	88684970	11/8/2019			SS	US Trademark ESS063
China	56564298	6/1/2021	ESSENTIUM Industrial Additive Pending	ESS063 ESSENTIUM	SS	Foreign Trademark :ESS063_CN_TM_7
China	56563389	6/1/2021	ESSENTUM Industrial Additive :Pending	ESS063 ESSENTIUM	22	Foreign Trademark ESS063_CN_TM_42
China	56570503	6/1/2021	Pending	ESS063 ESSENTIUM	SZI:	
China	56570494	6/1/2021		ESS063 ESSENTIUM	23	Foreign Trademark :ESS063_CN_TM_17
US	88684853	11/8/2019	Pending		ESS	
China	56553117	6/1/2021	:Pending		ESS	
China	56539216	6/1/2021	:Pending		ESS	
China	56565467	6/1/2021	:Pending		53	
China	56565458	6/1/2021	Pending		23	nark
SUS	88285521	2/1/2019	<u>IEM</u> Allowed		23	US Trademark ESS055
:Culua:	.50540255	(6/1/2021	ESSENTION Flament Care System :Pending			The state of the s

RECORDED: 02/11/2022