PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3808552

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
H.C. STARCK INC.	03/24/2016

RECEIVING PARTY DATA

Name:	GLAS TRUST CORPORATION LIMITED, AS SECURITY AGENT FOR THE BENEFIT OF THE SECOND LIEN SECURED PARTIES
Street Address:	2 LONDON WALL BUILDINGS
City:	LONDON
State/Country:	UNITED KINGDOM
Postal Code:	EX2M 5UU

PROPERTY NUMBERS Total: 90

Property Type	Number
Patent Number:	6269536
Patent Number:	5940675
Patent Number:	5918104
Patent Number:	6197082
Application Number:	09081321
Application Number:	09177181
Patent Number:	7794554
Patent Number:	7651658
Patent Number:	7368176
Patent Number:	8499606
Patent Number:	8061177
Patent Number:	7754185
Patent Number:	8425833
Patent Number:	8088232
Patent Number:	9017600
Application Number:	14608995
Application Number:	15061566
Patent Number:	7666243
Patent Number:	7416789
Patent Number:	7837929

<u>PATENT</u>

REEL: 038311 FRAME: 0472

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Property Type	Number
Patent Number:	8911528
Patent Number:	6261337
Patent Number:	6521173
Patent Number:	8491959
Patent Number:	8883250
Application Number:	14482251
Patent Number:	8197894
Patent Number:	8715386
Patent Number:	8226741
Patent Number:	7850876
Patent Number:	7452488
Application Number:	12109765
Application Number:	14751224
Patent Number:	9095885
Patent Number:	8250895
Patent Number:	8043655
Patent Number:	8470396
Patent Number:	8961867
Patent Number:	8246903
Application Number:	12915781
Patent Number:	9017762
Application Number:	14669258
Patent Number:	9150955
Application Number:	14813732
Patent Number:	8449818
Application Number:	13467323
Patent Number:	9293306
Application Number:	15042987
Patent Number:	8703233
Application Number:	13628090
Application Number:	13628088
Patent Number:	8734896
Application Number:	13628093
Application Number:	14259800
Patent Number:	8743926
Application Number:	14950249
Application Number:	13793043
Application Number:	13799796

Property Type	Number
Application Number:	14288719
Patent Number:	9299472
Application Number:	15048335
Application Number:	14296800
Application Number:	14908396
Application Number:	14681660
Application Number:	14936916
Application Number:	14992266
Application Number:	62117192
Application Number:	15045791
Application Number:	15045825
PCT Number:	US1618238
Application Number:	62144688
Application Number:	62149011
Application Number:	62149026
Application Number:	62151664
Application Number:	62156436
Application Number:	62192321
Patent Number:	9255309
Patent Number:	9233419
Patent Number:	8562715
Application Number:	14269836
Patent Number:	8784729
Patent Number:	8002169
Patent Number:	8113413
Patent Number:	8448840
Patent Number:	8777090
Patent Number:	9095932
Application Number:	12305740
Application Number:	62287690
Application Number:	62302847
Application Number:	14636594

CORRESPONDENCE DATA

(302)636-5454 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.

202-408-3121 X62348 Phone:

jean.paterson@cscglobal.com Email:

Correspondent Name: CORPORATION SERVICE COMPANY Address Line 1: 1090 VERMONT AVENUE NW, SUITE 430

Address Line 4: WASHINGTON, D.C. 20005

ATTORNEY DOCKET NUMBER:	978839
NAME OF SUBMITTER:	JEAN PATERSON
SIGNATURE:	/jep/
DATE SIGNED:	03/31/2016

Total Attachments: 8

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Intellectual Property Security Agreement

WHEREAS reference is made to (i) the Amended and Restated Senior Term and Revolving Facilities Agreement and Second Lien Facility Agreement, dated as of March 24, 2016 (as amended, restated, supplemented or otherwise modified from time to time, the "Senior Facilities Agreement"), by and among OPUS HOLDCO S.À R.L. (the "Parent"), H.C. STARCK GMBH (the "Company"), H.C. STARCK and certain other subsidiaries party thereto as guarantors, the several banks and other financial institutions or entities from time to time (the "Senior Lenders"), GLOBAL LOAN AGENCY SERVICES LIMITED, as agent, GLAS TRUST CORPORATION LIMITED, as security agent (in such capacity, the "Security Agent"), and the other agents named therein and (ii) each Hedging Agreement (as defined in the Senior Facilities Agreement);

WHEREAS as required by the Senior Facilities Agreement, certain subsidiaries of Obligors as grantors are parties to that certain Amended and Restated Security Agreement, dated as of March <u>24</u>, 2016, in favor of the Security Agent (as amended, supplemented, replaced or otherwise modified from time to time, the "Security Agreement");

WHEREAS, under the terms of the Security Agreement, the Grantor has granted a security interest in certain property, including, without limitation, certain Intellectual Property of the Grantor to the Security Agent and have agreed pursuant to Sections 3.01 and 3.06 thereof to execute this Intellectual Property Security Agreement for recording with the United States Patent and Trademark Office and other applicable Governmental Authorities.

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

SECTION 1. <u>Grant of Security.</u> The Grantor hereby grants to the Security Agent for the benefit of the Second Lien Secured Parties a security interest in and to all right, title and interest in and to the following (the "<u>Intellectual Property Collateral</u>"), as collateral security for the prompt and complete payment and performance when due (whether at the stated maturity, by acceleration or otherwise) of the Second Lien Secured Obligations:

(a) (i) all letters patent of the United States or the equivalent thereof in any other country, all registrations and recordings thereof, and all applications for letters patent of the United States or the equivalent thereof in any other country, including registrations, recordings and pending applications in the United States Patent and Trademark Office or any similar offices in any other country, including those listed on Schedule 1, and (ii) all reissues,

continuations, divisions, continuations-in-part, renewals or extensions thereof, and the inventions disclosed or claimed therein, including the right to make, use and/or sell the inventions disclosed or claimed therein (collectively, the "Patents"):

(b) any and all proceeds of the foregoing; <u>provided</u> any General Intangible, Investment Property or other such rights of a Grantor arising under any contract, lease, instrument, license or other document if (but only to the extent that) the grant of a security interest therein would (x) constitute a violation of a valid and enforceable restriction in respect of such General Intangible, Investment Property or other such rights in favor of a third party or under any Law, regulation, permit, order or decree of any Governmental Authority, unless and until all required consents shall have been obtained (for the avoidance of doubt, the restrictions described herein are not negative pledges or similar undertakings in favor of a lender or other financial counterparty) or (y) expressly give any other party in respect of any such contract, lease, instrument, license or other document, the right to terminate its obligations thereunder; <u>provided, however,</u> that the limitation set forth in clause above shall not affect, limit, restrict or impair the grant by a Grantor of a security interest pursuant to this Agreement in any such Collateral to the extent that an otherwise applicable prohibition or restriction on such grant is rendered ineffective by any applicable law, including the UCC.

SECTION 2. <u>Recordation</u>. The Grantor authorizes and requests that the Commissioner of Patents and Trademarks and any other applicable government officer record this Intellectual Property Security Agreement.

SECTION 3. <u>Execution in Counterparts</u>. This Agreement may be executed in any number of counterparts (including by telecopy or other electronic transmission), each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement.

SECTION 4. <u>Governing Law.</u> This Intellectual Property Security Agreement shall be governed by, and construed and interpreted in accordance with, the law of the State of New York.

SECTION 5. <u>Conflict Provision.</u> This Intellectual Property Security Agreement has been entered into in conjunction with the provisions of the Security Agreement and the Senior Facilities Agreement. In the event that any provisions of this Intellectual Property Security Agreement are in conflict with the Security Agreement or the Senior Facilities Agreement, the provisions of the Security Agreement or the Senior Facilities Agreement shall govern.

IN WITNESS WHEREOF, each of the undersigned has caused this Intellectual Property Security Agreement to be duly executed and delivered as of the date first above written.

H.C. STARCK INC.

By: D. Shazhhot

Name: D. SHASHKOV

Title: President & CEO

Schedule 1

PATENTS OWNED BY GRANTORS

U.S. Patent Registrations and U.S. Patent Applications

Our Ref.	Country	Application No.	Application date	Patent No.	Issued date	Status comments
MO 7225	United States of America	08/62362	28 Mar 1996	6269536	07 Aug 2001	
MO 7226	United States of America	08/998101	24 Dec 1997	5940675	17 Aug 1999	
MO 7227	United States of America	08/997907	24 Dec 1997	5918104	29 Jun 1999	
MO 7228	United States of America	09/251567	17.02.1999	6197082	06.03.2001	
MO 7230	United States of America	09/081321	19 May 1998			Publication of Application
MO 7231	United States of America	09/177181	22 Oct 1998			Publication of Application
MO 7287	United States of America	11/038890	19 Jan 2005	7794554	14 Sep 2010	
MO 7306	United States of America	10/501837	22.01.2003	7651658	26 Jan 2010	
MO 7654	United States of America	10/542945	14.01.2004	7368176	06 May 2008	
MO 7704	United States of America	13/301066	21 Nov 2011	8499606	06 Aug 2013	
MO 7704	United States of America	10/593620	23 Mar 2005	8061177	22 Nov 2011	
MO 8113	United States of America	11/334140	29.06.2004	7754185	13 Jul 2010	
MO 8258	United States of America	13/340973	30 Dec 2011	8425833	23 Apr 2013	Publication of application 02. March 2006 US 2006/0042728
MO 8258	United States of America	11/574469	29.08.2005	8088232	03 Jan 2012	Filing 29. August 2005
MO 8258	United States of America	13/849918	25 Mar 2013	9017600	28 Apr 2015	

	United		1	Т	12/4/2015	I
MO 9259	States of	1.476.00005	20 In 2015		12/4/2013	
MO 8258			29 Jan 2015			
	America				12/1/2015	
	United				12/4/2015	
MO 8258	States of	15/061566	03 Mar 2016			Filing
	America			_		
	United			7666243	23 Feb 2010	
MO 8366	States of	10/974519	27.10.2004			
	America					
	United			7416789	26 Aug 2008	
MO 8384	States of	10/978940	01.11.2004			
MO 0304	America	10/9/0940	01.11.2004			
	United			7837929	23 Nov 2010	
MO 8634	States of	11/255018	20.10.2005			
	America					
	United			8911528	16 Dec 2014	
MO 8634	States of	12/917668	02 Nov 2010			
	America					
	United					
NRC 06	States of	09/377077	19.08.1999	6261337	17.07.2001	
1.110	America	03/3/7077	19.00.1999	0201337	17.07.2001	
	United					
NRC 06	States of	09/906208	16.07.2001	6521173	18.02.2003	
Tike 00	America	07/700200	10.07.2001	0321173	10.02.2003	
STA-0422	United			8491959	23 Jul 2013	
31A-0422	States of	13/465475	07 May 2012	0491939	25 Jul 2015	
	America	13/403473	07 May 2012			
STA-0422	United			8883250	11 Nov 2014	
S1A-0422		12/020524	18 Jun 2013	8883230	11 Nov 2014	
	States of	13/920534				
GE 4 0 100	America			-		
STA-0422	United					
	States of	14/482251	10 Sep 2014			Publication of Application
	America			<u> </u>		
STA-0422	United			8197894	12 Jun 2012	
	States of	11/937164	08 Nov 2007			
	America					
STA-0444	United			8715386	06 May 2014	
	States of	13/529148	21 Jun 2012			
	America					
STA-0444	United			8226741	24 Jul 2012	
	States of	12/444263	03 Oct 2007			
	America					
STA-0446	United			7850876	14 Dec 2010	
	States of	12/268713	11 Nov 2008	1		
	America			<u> </u>		
STA-0446	United			7452488	18 Nov 2008	
	States of	11/590179	31 Oct 2006	1		
	America			1		
STA-0447	United					Publication of Application
	States of	12/109765	25 Apr 2008	1		
	America	12.107.00		1		
STA-0467	United			1		Publication of Application
2111 0 107	States of	14/751224	26 Jun 2015	1		I solution of repriention
	America	17//31227	20 3411 2013	1		
STA-0467	United			9095885	04 Aug 2015	
51A-040/	States of	12/221,646	05 Aug 2008	7073863	OT Aug 2013	
		14/441,040	05 Aug 2008	1		
	America			1		1

STA-0468	United States of America	12/221759	06 Aug 2008	8250895	28 Aug 2012	
STA-0511	United States of	12/245840	06 Oct 2008	8043655	25 Oct 2011	
STA-0512	America United States of	13/551747	18 Jul 2012	8470396	25 Jun 2013	
STA-0512	America United	13/331747	18 Jul 2012	8961867	24 Feb 2015	
	States of America	13/901301	23 May 2013			
STA-0512	United States of America	12/206944	09 Sep 2008	8246903	21 Aug 2012	
STA-0514	United States of America	12/915781	29 Oct 2010			Publication of Application
STA-0531	United States of America	13/856617	04 Apr 2013	9017762	28 Apr 2015	
STA-0531	United States of America	14/669258	26 Mar 2015			Publication of Application
STA-0532	United States of America	13/857508	05 Apr 2013	9150955	06 Oct 2015	
STA-0532	United States of America	14/813,732	30 Jul 2015			Publication of Application
STA-0532	United States of America	12/827562	30 Jun 2010	8449818	28 May 2013	
STA-0538	United States of America	13/467323	09 May 2012			Publication of Application
STA-0546	United States of America	14/793931	08 Jul 2015	9293306	22 Mar 2016	
STA-0546	United States of America	15/042987	12 Feb 2016			Filing
STA-0546	United States of America	13/628089	27 Sep 2012	8703233	22 Apr 2014	
STA-0546	United States of America	13/628090	27 Sep 2012			Publication of Application
STA-0546	United States of	13/628088	27 Sep 2012			Publication of Application
STA-0546	America United States of	13/628092	27 Sep 2012	8734896	27 May 2014	
STA-0546	America United States of	13/628093	27 Sep 2012			Publication of Application
STA-0548	America United States of America	14/259800	23 Apr 2014			Publication of Application

CTA 0540	TT			19742026	02 I 2014	
STA-0548	United	100-04-		8743926	03 Jun 2014	
	States of	12/853615	10 Aug 2010			
	America					
STA-0550	United					Filing
	States of	14/950,249	24 Nov 2015			
	America					
STA-0553	United					Publication of Application
3212 3000	States of	13/793043	11 Mar 2013			T defication of rippirousen
	America	13/1/3043	11 Wai 2013			
STA-0555	United					Publication of Application
31A-0333		12/700706	1236 2012			Publication of Application
	States of	13/799796	13 Mar 2013			
	America					
STA-0564	United					Publication of Application
	States of	14/288719	28 May 2014			
	America					
STA-0565	United			9299472	3/29/2016	
	States of	14/296796	05 Jun 2014			
	America	11/2/07/90	03 001 201			
STA-0565	United			+		Publication of Application
31A-0303	States of	15/040225	10 E-1- 2016			Fublication of Application
		15/048335	19 Feb 2016			
	America					
STA-0565	United					Publication of Application
	States of	14/296800	05 Jun 2014			
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STA-0567	United					Filing
	States of	14/908,396	31 Jul 2014			
	America	1 1/3 00,03 0	010012011			
STA-0571	United					Publication of Application
31A-03/1	States of	10/10/711	02 Mar 2015			r ubilication of Application
		104106711	03 Mar 2015			
GE 4 0552	America					7711
STA-0573	United					Filing
	States of	14/681660	08 Apr 2015			
	America					
STA-0577	United				Filing	
	States of	14/936,916	10 Nov 2015			
	America	,				
STA-0578	United					Filing
0111 00.0	States of	14/992,266	11 Jan 2016			1
	America	1-1///2,200	11 3411 2010			
STA-0579	United					Filing
31A-03/9		60447400	1.551.0015			Filing
	States of	62/117192	17 Feb 2015			
	America					
STA-0579	United					Filing
	States of	15/045791	17 Feb 2016			
	America					
STA-0579	United					Filing
	States of	15/045825	17 Feb 2016			
	America	10,010020	1.755 2010			
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5111-0319	States of	DCT/HC16/19220	17 Feb 2016			1 11115
		PCT/US16/18238	17 Feb 2016			
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STA-0580	United		1			Filing
	States of	62/144688	08 Apr 2015			
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	States of	62/149011	17 Apr 2015]
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STA-0582	United					Filing
	States of	62/151664	23 Apr 2015			
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STA-0582	United					Filing
	States of	62/156436	04 May 2015			
	America					
STA-0586	United					Filing
	States of	62/192321	14 Jul 2015			
	America					
STA-066018	United			9255309	09 Feb 2016	
	States of	13/463024	03 May 2012			
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	States of	13/968770	16 Aug 2013			
	America					
STA-066019	United			8562715	22 Oct 2013	
	States of	13/124814	14 Oct 2009			
	America	15/12 1011	110012009			
STA-067027	United					Publication of Application
0111 007027	States of	14/269836	05 May 2014			Tuoneation of Application
	America	14/20/030	03 Way 2014			
STA-067027	United			8784729	22 Jul 2014	
31A-00/02/	States of	11/653816	16 Jan 2007	0704729	22 Jul 2014	
	America	11/033610	10 Jan 2007			
STA067052	United			8002169	23 Aug 2011	
S1A067032	States of	12/02/270	14 E-1 2011	8002169	23 Aug 2011	
	1 '	13/026370	14 Feb 2011			
CEL 07.7052	America			0112412	14 E 1 2012	
STA067052	United	10110166	10712011	8113413	14 Feb 2012	
	States of	13/184665	18 Jul 2011			
C=	America			0.1.100.10	2015 2012	
STA067052	United	12/2/2112		8448840	28 May 2013	
	States of	13/343113	04 Jan 2012			
	America					
STA067052	United			8777090	15 Jul 2014	
	States of	13/848404	21 Mar 2013			
	America					
STA067052	United			9095932	04 Aug 2015	
	States of	14/293643	02 Jun 2014	1		
	America					
STA0288	United					
	States of	12/305,740	18 Jun 2007			Publication of Application
	America			<u> </u>		
HCS-082	United					
	States of	62/287690	27 Jan 2016			Filing
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HCS-083	United					
	States of	62/302847	03 Mar 2016			Filing
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