

PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT6013212

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	PATENT SECURITY AGREEMENT

CONVEYING PARTY DATA

Name	Execution Date
CLEVELAND-CLIFFS INC.	03/13/2020
AK STEEL CORPORATION	03/13/2020
AK STEEL PROPERTIES, INC.	03/13/2020

RECEIVING PARTY DATA

Name:	BANK OF AMERICA, N.A., AS AGENT
Street Address:	135 S. LASALLE ST., SUITE 927 ATTN: ABL PORTFOLIO MANAGEMENT
City:	CHICAGO
State/Country:	ILLINOIS
Postal Code:	60603

PROPERTY NUMBERS Total: 62

Property Type	Number
Patent Number:	8590392
Patent Number:	6599371
Patent Number:	6645306
Patent Number:	6746614
Patent Number:	6802965
Patent Number:	6929705
Patent Number:	7140417
Patent Number:	7377986
Patent Number:	7887645
Patent Number:	8128754
Patent Number:	9212414
Patent Number:	9580831
Patent Number:	9816163
Patent Number:	9850395
Patent Number:	9881720
Patent Number:	6739384
Application Number:	14010646
Application Number:	14279768

PATENT

Property Type	Number
Application Number:	14280045
Application Number:	14279818
Application Number:	14995409
Application Number:	15160714
Application Number:	15160573
Application Number:	15211467
Application Number:	15407922
Application Number:	15583450
Application Number:	15672387
Application Number:	15723812
Application Number:	15801415
Application Number:	15788387
Application Number:	15819564
Application Number:	15924720
Application Number:	15908152
Application Number:	15903288
Application Number:	15974801
Application Number:	16051993
Application Number:	16051929
Application Number:	16179387
Application Number:	16179425
Application Number:	16263044
Application Number:	16256208
Application Number:	16296882
Application Number:	16367779
Application Number:	16371901
Application Number:	15850033
Application Number:	16546539
Application Number:	10242885
Application Number:	10374595
Application Number:	62933642
Application Number:	16775613
Application Number:	62882866
Application Number:	62808399
Application Number:	62808899
Application Number:	15935800
Application Number:	29654633
Application Number:	62834598

Property Type	Number
Application Number:	62829891
Application Number:	62829741
Application Number:	62847496
Application Number:	62847511
Application Number:	62899288
Application Number:	62930239

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: 202.370.4750
Email: ipteam@cogencyglobal.com
Correspondent Name: STEWART WALSH
Address Line 1: 1025 VERMONT AVE NW, SUITE 1130
Address Line 2: COGENCY GLOBAL INC.
Address Line 4: WASHINGTON, D.C. 20005

ATTORNEY DOCKET NUMBER:	1198677 PAT E
NAME OF SUBMITTER:	CHRISTIAN CRAFT
SIGNATURE:	/Christian Craft/
DATE SIGNED:	03/13/2020

Total Attachments: 13

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PATENT SECURITY AGREEMENT

This PATENT SECURITY AGREEMENT (this “Patent Security Agreement”) is made this 13th day of March, 2020, by and among the Grantors listed on the signature pages hereof (collectively, jointly and severally, “Grantors” and each individually “Grantor”), and **BANK OF AMERICA, N.A.** (“Bank of America”), in its capacity as agent for the Lender Group and the Bank Product Providers (in such capacity, together with its successors and assigns in such capacity, “Agent”).

W I T N E S S E T H:

WHEREAS, pursuant to that certain Asset-Based Revolving Credit Agreement dated as of March 13, 2020 (as amended, restated, supplemented, or otherwise modified from time to time, the “Credit Agreement”) by and among Cleveland-Cliffs Inc., an Ohio corporation (“Parent”), the Subsidiaries of Parent from time to time party thereto as “Borrowers” (such Subsidiaries, together with Parent, are referred to hereinafter each individually as a “Borrower” and individually and collectively as the “Borrowers”), the lenders party thereto as “Lenders” (each of such Lenders, together with its successors and permitted assigns, is referred to hereinafter as a “Lender”) and Agent, the Lender Group and the Bank Product Providers have agreed to make certain financial accommodations available to Borrowers from time to time pursuant to the terms and conditions thereof;

WHEREAS, the members of Lender Group and the Bank Product Providers are willing to make the financial accommodations to Borrower as provided for in the Credit Agreement, the other Loan Documents, and the Bank Product Agreements, but only upon the condition, among others, that the Grantors shall have executed and delivered to Agent, for the benefit of the Lender Group and the Bank Product Providers, that certain Guaranty and Security Agreement, dated as of March 13, 2020 (including all annexes, exhibits or schedules thereto, as from time to time amended, restated, supplemented or otherwise modified, the “Guaranty and Security Agreement”); and

WHEREAS, pursuant to the Guaranty and Security Agreement, Grantors are required to execute and deliver to Agent, for the benefit of the Lender Group and the Bank Product Providers, this Patent Security Agreement;

NOW, THEREFORE, in consideration of the premises and mutual covenants herein contained and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each Grantor hereby agrees as follows:

1. DEFINED TERMS. All initially capitalized terms used but not otherwise defined herein have the meanings given to them in the Guaranty and Security Agreement or, if not defined therein, in the Credit Agreement, and this Patent Security Agreement shall be subject to the rules of construction set forth in Section 1(b) of the Guaranty and Security Agreement, which rules of construction are incorporated herein by this reference, mutatis mutandis.

2. GRANT OF SECURITY INTEREST IN PATENT COLLATERAL. Each Grantor hereby unconditionally grants, assigns, and pledges to Agent, for the benefit each member of the Lender Group and each of the Bank Product Providers, to secure the Secured Obligations, a continuing security interest (referred to in this Patent Security Agreement as the “Security Interest”) in all of such Grantor’s right, title and interest in and to the following, whether now owned or hereafter acquired or arising (excluding any Excluded Property, collectively, the “Patent Collateral”):

(a) all of its Patents and Patent Intellectual Property Licenses to which it is a party including those referred to on Schedule I;

(b) all divisionals, continuations, continuations-in-part, reissues, reexaminations, or extensions of the foregoing; and

(c) all products and proceeds of the foregoing, including any claim by such Grantor against third parties for past, present or future infringement of any Patent or any Patent exclusively licensed under any Intellectual Property License, including the right to receive damages, or right to receive license fees, royalties, and other compensation under any Patent Intellectual Property License.

3. SECURITY FOR SECURED OBLIGATIONS. This Patent Security Agreement and the Security Interest created hereby secures the payment and performance of the Secured Obligations, whether now existing or arising hereafter. Without limiting the generality of the foregoing, this Patent Security Agreement secures the payment of all amounts which constitute part of the Secured Obligations and would be owed by Grantors, or any of them, to Agent, the other members of the Lender Group, the Bank Product Providers or any of them, whether or not they are unenforceable or not allowable due to the existence of an Insolvency Proceeding involving any Grantor.

4. SECURITY AGREEMENT. The Security Interest granted pursuant to this Patent Security Agreement is granted in conjunction with the security interests granted to Agent, for the benefit of the Lender Group and the Bank Product Providers, pursuant to the Guaranty and Security Agreement. Each Grantor hereby acknowledges and affirms that the rights and remedies of Agent with respect to the Security Interest in the Patent Collateral made and granted hereby are more fully set forth in the Guaranty and Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. To the extent there is any inconsistency between this Patent Security Agreement and the Guaranty and Security Agreement, the Guaranty and Security Agreement shall control.

5. AUTHORIZATION TO SUPPLEMENT. If any Grantor shall obtain 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, the provisions of this Patent Security Agreement shall automatically apply thereto, in each case, to the extent constituting Patent Collateral. Grantors hereby authorize Agent unilaterally to modify this Patent Security Agreement by amending Schedule I to include any such new patent rights of each Grantor, in each case, to the extent constituting Patent Collateral, and subject to the terms and conditions in the Guaranty and Security Agreement. Notwithstanding the foregoing, no failure to so modify this Patent Security Agreement or amend Schedule I shall in any way affect, invalidate or detract from Agent's continuing security interest in all Collateral, whether or not listed on Schedule I.

6. COUNTERPARTS. This Patent Security Agreement is a Loan Document. This Patent Security Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, shall be deemed to be an original, and all of which, when taken together, shall constitute but one and the same Patent Security Agreement. Delivery of an executed counterpart of this Patent Security Agreement by telefacsimile or other electronic method of transmission shall be equally as effective as delivery of an original executed counterpart of this Patent Security Agreement. Any party delivering an executed counterpart of this Patent Security Agreement by telefacsimile or other electronic method of transmission also shall deliver an original executed counterpart of this Patent Security Agreement but the failure to deliver an original executed counterpart shall not affect the validity, enforceability, and binding effect of this Patent Security Agreement.

7. CHOICE OF LAW AND VENUE, JURY TRIAL WAIVER, AND JUDICIAL REFERENCE PROVISION. THIS PATENT SECURITY AGREEMENT SHALL BE SUBJECT TO THE PROVISIONS REGARDING CHOICE OF LAW AND VENUE, JURY TRIAL WAIVER, AND

JUDICIAL REFERENCE SET FORTH IN SECTION 25 OF THE GUARANTY AND SECURITY AGREEMENT, AND SUCH PROVISIONS ARE INCORPORATED HEREIN BY THIS REFERENCE, MUTATIS MUTANDIS.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the parties hereto have caused this Patent Security Agreement to be executed and delivered as of the day and year first above written.

GRANTORS:

CLEVELAND-CLIFFS INC.

By: James D. Graham
Name: James D. Graham
Title: Executive Vice President, Chief
Legal Officer & Secretary

AK STEEL CORPORATION

By: James D. Graham
Name: James D. Graham
Title: Vice President, General Counsel &
Corporate Secretary

AK STEEL PROPERTIES, INC.

By: James D. Graham
Name: James D. Graham
Title: Secretary

[Signature Page to Patent Security Agreement]

PATENT
REEL: 052162 FRAME: 0788

IN WITNESS WHEREOF, the parties hereto have caused this Patent Security Agreement to be executed and delivered as of the day and year first above written.

AGENT:

ACCEPTED AND ACKNOWLEDGED BY:

BANK OF AMERICA, N.A., as Agent

By: Thomas H. Herron
Name: *Thomas H. Herron*
Title: *Senior Vice President*

[Signature Page to Patent Security Agreement]

PATENT
REEL: 052162 FRAME: 0789

SCHEDULE I
to
PATENT SECURITY AGREEMENT

Patents

Title	Application. No	Filed	Patent No.	Grant Date	Current Owner
Compression Test Systems And Methods	12881766	09/14/2010	8590392	11/26/2013	Cleveland-Cliffs Inc.
Hydrogen Peroxide Pickling Scheme for Silicon-Containing Electrical Steel Grades	10/119444	04/09/2002	6599371	07/29/2003	AK Steel Corporation
Hydrogen Peroxide Pickling Scheme for Stainless Steel Grades	10/118765	04/09/2002	6645306	11/11/2003	AK Steel Corporation
Method for Removing Hydrogen Peroxide From Spent Pickle Liquor	10/119112	04/09/2002	6746614	06/08/2004	AK Steel Corporation
Apparatus for Removing Hydrogen Peroxide From Spent Pickle Liquor	10/683717	10/10/2003	6802965	10/12/2004	AK Steel Properties, Inc.
Antimicrobial Coated Metal Sheet	09/938205	08/23/2001	6929705	08/16/2005	AK Steel Properties, Inc.
Method of continuous casting non-oriented electrical steel strip	11/313367	12/21/2005	7140417	11/28/2006	AK Steel Properties, Inc.
Method for production of non-oriented electrical steel strip	11/494369	07/27/2006	7377986	05/27/2008	AK Steel Properties, Inc.
High permeability grain oriented electrical steel	09/847236	05/02/2001	7887645	02/15/2011	AK Steel Properties, Inc.
Ferric pickling of silicon steel	12/616847	11/12/2009	8128754	03/06/2012	AK Steel Properties, Inc.
Meniscus coating apparatus and method	13/479382	05/24/2012	9212414	12/15/2015	AK Steel Properties, Inc.
Stainless steel pickling in an oxidizing, electrolytic	13/627022	09/26/2012	9580831	02/28/2017	AK Steel Properties, Inc.

Title	Application. No	Filed	Patent No.	Grant Date	Current Owner
acid bath					
Cost-effective ferritic stainless steel	13/855439	04/02/2013	9816163	11/14/2017	AK Steel Properties, Inc.
Polymer coated metallic substrate and method for making	12/830618	07/06/2010	9850395	12/26/2017	AK Steel Properties, Inc.
Grain oriented electrical steel with improved forsterite coating characteristics	14/468963	08/26/2014	9881720	01/30/2018	AK Steel Properties, Inc.
METHOD OF CONTINUOUSLY CASTING ELECTRICAL STEEL STRIP WITH CONTROLLED SPRAY COOLING	10/243020	09/13/2002	6739384	05/25/2004	AK Steel Properties, Inc.
Ferritic Stainless Steel with Excellent Oxidation Resistance, Good High Temperature Strength, and Good Formability	14/010646	08/27/2013	Pending	N/A	AK Steel Properties, Inc.
High Strength Steel Exhibiting Good Ductility and Method of Production via In-Line Heat Treatment Downstream of Molten Zinc Bath	14/279768	05/16/2014	Pending	N/A	AK Steel Properties, Inc.
High Strength Steel Exhibiting Good Ductility and Method of Production via Quenching and Partitioning Treatment by Zinc Bath	14/280045	05/16/2014	Pending	N/A	AK Steel Properties, Inc.
ZINC-COATED STEEL FOR PRESS HARDENING APPLICATIONS AND METHOD OF PRODUCTION	14/279818	05/16/2014	Pending	N/A	AK Steel Properties, Inc.
Dual Phase Steel with Improved Properties	14/995409	01/14/2016	Pending	N/A	AK Steel Properties, Inc.

Title	Application. No	Filed	Patent No.	Grant Date	Current Owner
LOW ALLOY THIRD GENERATION ADVANCED HIGH STRENGTH STEEL	15/160714	05/20/2016	Pending	N/A	AK Steel Properties, Inc.
HIGH MANGANESE 3RD GENERATION ADVANCED HIGH STRENGTH STEELS	15/160573	05/20/2016	Pending	N/A	AK Steel Properties, Inc.
HIGH FORMABILITY DUAL PHASE STEEL	15/211467	07/15/2016	Pending	N/A	AK Steel Properties, Inc.
WARM ROLLING OF STEELS CONTAINING METASTABLE AUSTENITE	15/407922	01/17/2017	Pending	N/A	AK Steel Properties, Inc.
METHOD FOR EXTENDING THE CAMPAIGN LIFE OF STABILIZERS FOR A COATING LINE	15/583450	05/01/2017	Pending	N/A	AK Steel Properties, Inc.
TUNDISH FUNNEL	15/672387	08/09/2017	Pending	N/A	AK Steel Properties, Inc.
HIGH ELONGATION PRESS HARDENED STEEL AND MANUFACTURE OF THE SAME	15/723812	10/03/2017	Pending	N/A	AK Steel Properties, Inc.
WELD WHEEL CLEANING SYSTEM	15/801415	11/02/2017	Pending	N/A	AK Steel Properties, Inc.
SURFACE MODIFICATION OF STAINLESS STEELS	15/788387	10/19/2017	Pending	N/A	AK Steel Properties, Inc.
CONTINUOUS CASTING NOZZLE DEFLECTOR	15/819564	11/21/2017	Pending	N/A	AK Steel Properties, Inc.
POLYMER COATED METALLIC SUBSTRATE AND METHOD FOR MAKING	15/924720	03/19/2018	Pending	N/A	AK Steel Properties, Inc.
HOT-ROLLED STEEL WITH VERY HIGH STRENGTH AND	15/908152	02/28/2018	Pending	N/A	AK Steel Properties, Inc.

Title	Application No	Filed	Patent No.	Grant Date	Current Owner
METHOD FOR PRODUCTION					
PRESS HARDENED STEEL WITH EXTREMELY HIGH STRENGTH AND METHOD FOR PRODUCTION	15/903288	02/23/2018	Pending	N/A	AK Steel Properties, Inc.
SLAB REHEAT FURNACE SKID BUTTON AND METHOD TO REDUCE GOUGE OF STAINLESS STEEL SLABS	15/974801	05/09/2018	Pending	N/A	AK Steel Properties, Inc.
MANUFACTURING ULTRA-HIGH STRENGTH LOAD BEARING PARTS USING HIGH STRENGTH/LOW INITIAL YIELD STEELS THROUGH TUBULAR HYDROFORMING PROCESS	16/051993	08/01/2018	Pending	N/A	AK Steel Properties, Inc.
METHOD FOR FACILITATING THERMOMECHANICAL FORMING PROCESS OF AUSTENITE CONTAINING GRADES TO PRODUCE TAILORED STRENGTH STRUCTURAL COMPONENTS	16/051929	08/01/2018	Pending	N/A	AK Steel Properties, Inc.
PRESS HARDENED STEEL WITH TAILORED PROPERTIES	16/179387	11/02/2018	Pending	N/A	AK Steel Properties, Inc.
PRESS HARDENED STEEL WITH TAILORED PROPERTIES AFTER NOVEL THERMAL TREATMENT	16/179425	11/02/2018	Pending	N/A	AK Steel Properties, Inc.

Title	Application. No	Filed	Patent No.	Grant Date	Current Owner
METHOD AND APPARATUS FOR EXTENDING THE CAMPAIGN LIFE OF STABILIZERS FOR A COATING LINE	16/263044	01/31/2019	Pending	N/A	AK Steel Properties, Inc.
SUBMERGED ENTRY NOZZLE FOR CONTINUOUS CASTING	16/256208	01/24/2019	Pending	N/A	AK Steel Properties, Inc.
REDUCTION AT ELEVATED TEMPERATURE OF COATED STEELS CONTAINING METASTABLE AUSTENITE	16/296882	03/08/2019	Pending	N/A	AK Steel Properties, Inc.
POLYMER LAMINATE ON ZINC-PHOSPHATE COATED GALVANIZED STEEL	16/367779	03/28/2019	Pending	N/A	AK Steel Properties, Inc.
LOW ALLOY THIRD GENERATION ADVANCED HIGH STRENGTH STEEL AND PROCESS FOR MAKING	16/371901	04/01/2019	Pending	N/A	AK Steel Properties, Inc.
GRAIN ORIENTED ELECTRICAL STEEL WITH IMPROVED FORSTERITE COATING CHARACTERISTICS	15/850033	12/21/2017	Pending	N/A	AK Steel Properties, Inc.
ROLL FOR USE IN A HOT DIP COATING LINE	16/546539	08/21/2019	Pending	N/A	AK Steel Properties, Inc.
METHOD OF PRODUCING (110)[001] GRAIN ORIENTED ELECTRICAL STEEL USING STRIP CASTING	10/242885	09/13/2002	6749693	06/15/2004	AK Steel Properties, Inc.
METHOD OF CONTINUOUS CASTING NON-ORIENTED	10/374595	02/25/2003	7011139	03/14/2006	AK Steel Properties, Inc.

Title	Application. No	Filed	Patent No.	Grant Date	Current Owner
ELECTRICAL STEEL STRIP					
TUNDISH FUNNEL	62/933642	11/11/2019	Pending	N/A	AK Steel Properties, Inc.
HOT ROLLED STEEL WITH VERY HIGH STRENGTH AND METHOD OF PRODUCTION	16/775613	01/29/2019	Pending	N/A	AK Steel Properties, Inc.
SLAB REHEAT FURNACE SKID BUTTON AND METHOD TO REDUCE GOUGE OF STAINLESS STEEL SLABS	62/882866	08/05/2019	Pending	N/A	AK Steel Properties, Inc.
A METHOD FOR FACILITATING THERMOMECHANICAL FORMING PROCESS OF AUSTENITE CONTAINING GRADES TO PRODUCE TAILORED STRENGTH STRUCTURAL COMPONENTS	62/808399	02/21/2019	Pending	N/A	AK Steel Properties, Inc.
PRESS HARDENED STEEL WITH TAILORED PROPERTIES	62/808899	02/22/2019	Pending	N/A	AK Steel Properties, Inc.
PRESS HARDENED STEEL WITH TAILORED PROPERTIES AFTER NOVEL THERMAL TREATMENT	15/935800	03/26/2018	Pending	N/A	AK Steel Properties, Inc.
SUBMERGED ENTRY NOZZLE FOR CONTINUOUS CASTING	29/654633	06/26/2018	Pending	N/A	AK Steel Properties, Inc.
METHOD OF COLORIZING STAINLESS STEEL USING STRIP ANNEAL	62/834598	04/16/2019	Pending	N/A	AK Steel Properties, Inc.

Title	Application. No	Filed	Patent No.	Grant Date	Current Owner
PROCESSING					
A SELF-CONTAINED WELD RESTRAINT METHOD TO PREVENT WELD ZONE FAILURE IN THE TUBE HYDROFORMING PROCESS	62/829891	04/05/2019	Pending	N/A	AK Steel Properties, Inc.
A ROLL FOR USE IN A HOT DIP COATING LINE	62/829741	04/05/2019	Pending	N/A	AK Steel Properties, Inc.
SLAB REHEAT FURNACE SKID BUTTON AND METHOD TO REDUCE GOUGE OF STAINLESS STEEL SLABS	62/847496	05/14/2019	Pending	N/A	AK Steel Properties, Inc.
CURVED SURFACE MENISCUS COATING SYSTEM	62/847511	05/14/2019	Pending	N/A	AK Steel Properties, Inc.
COLD ROLLED ENAMELING SHEET STEEL WITH ENHANCED FORMABILITY	62/899288	09/12/2019	Pending	N/A	AK Steel Properties, Inc.
HIGH ELONGATION PRESS HARDENED STEEL AND MANUFACTURE OF THE SAME	62/930239	11/04/2019	Pending	N/A	AK Steel Properties, Inc.

Patent Licenses

Process License Agreement, dated August 11, 2017, between IronUnits LLC and Kobe Steel, Ltd.

Patents License Agreement, dated as of October 23, 2019, by and among AK Steel Corporation (“AKSC”), as licensee, and Arcelormittal, as licensor.

Patent License Agreement, dated as of December 4, 2009, between AKSC, as licensor, and JFE Steel Corporation (“JFE”), as licensee (as supplemented by the Addendum #1 to 780 Patent License Agreement, dated as of May, 2015).

Patent License Agreement, dated as of February 15, 2008, between AKSC, as licensor, and JFE, as licensee (as supplemented by the Addendum #1 to 980 Patent License Agreement, dated as of May, 2015).

Patent License Agreement, dated as of May 29, 2015, between AKSC, as licensor, and JFE, as licensee.

Patent License Agreement, dated as of December 17, 2013, between AKSC, as licensor, and JFE, as licensee (as supplemented by the Addendum #1 to 440BH Patent License Agreement, dated as of May, 2015).