

PATENT ASSIGNMENT

Electronic Version v1.1
 Stylesheet Version v1.1

| SUBMISSION TYPE: | NEW ASSIGNMENT | | | | | | | | | | | | |
|--|--|---------------|----------------|-----------------------|------------|--------------------|------------|-------------------|------------|-------------|------------|----------------------|------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT | | | | | | | | | | | | |
| CONVEYING PARTY DATA | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Scott Jeffrey Volchko</td> <td>11/05/2012</td> </tr> <tr> <td>William Loewenthal</td> <td>11/19/2012</td> </tr> <tr> <td>Stefan Zimmermann</td> <td>11/15/2012</td> </tr> <tr> <td>Mark Gaydos</td> <td>11/05/2012</td> </tr> <tr> <td>Steven Alfred Miller</td> <td>11/07/2012</td> </tr> </tbody> </table> | | Name | Execution Date | Scott Jeffrey Volchko | 11/05/2012 | William Loewenthal | 11/19/2012 | Stefan Zimmermann | 11/15/2012 | Mark Gaydos | 11/05/2012 | Steven Alfred Miller | 11/07/2012 |
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| Steven Alfred Miller | 11/07/2012 | | | | | | | | | | | | |
| RECEIVING PARTY DATA | | | | | | | | | | | | | |
| Name: | H.C. Starck Inc. | | | | | | | | | | | | |
| Street Address: | 45 Industrial Place | | | | | | | | | | | | |
| City: | Newton | | | | | | | | | | | | |
| State/Country: | MASSACHUSETTS | | | | | | | | | | | | |
| Postal Code: | 02461 | | | | | | | | | | | | |
| PROPERTY NUMBERS Total: 1 | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13628090</td> </tr> </tbody> </table> | | Property Type | Number | Application Number: | 13628090 | | | | | | | | |
| Property Type | Number | | | | | | | | | | | | |
| Application Number: | 13628090 | | | | | | | | | | | | |
| CORRESPONDENCE DATA | | | | | | | | | | | | | |
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| <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i> | | | | | | | | | | | | | |
| Phone: | 617-951-8000 | | | | | | | | | | | | |
| Email: | susan.lanney@bingham.com | | | | | | | | | | | | |
| Correspondent Name: | Bingham McCutchen LLP | | | | | | | | | | | | |
| Address Line 1: | 2020 K Street NW | | | | | | | | | | | | |
| Address Line 4: | Washington, DISTRICT OF COLUMBIA 20006 | | | | | | | | | | | | |
| ATTORNEY DOCKET NUMBER: | HCS-014B/7308202002 | | | | | | | | | | | | |
| NAME OF SUBMITTER: | Susan Lanney | | | | | | | | | | | | |
| Total Attachments: 6 | | | | | | | | | | | | | |

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PATENT APPLICATION
Assignment

For good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned, co-inventors:

SCOTT JEFFREY VOLCHKO

WILLIAM LOEWENTHAL

STEFAN ZIMMERMANN

MARK GAYDOS

STEVEN ALFRED MILLER

Who have created a certain invention for which an application for United States Letters Patent entitled **METHODS OF MANUFACTURING LARGE-AREA SPUTTERING TARGETS USING INTERLOCKING JOINTS**, was filed at the U.S. Patent and Trademark Office on September 27, 2012 and assigned U.S. Patent Application Serial No. **13/628,090**.

Do hereby sell, assign and transfer to **H.C. Starck Inc.**, a corporation having a place of business at 45 Industrial Place, Newton, MA 02461, its successors, assigns, and legal representatives, the full and exclusive right to said invention and said application and to any and all inventions described in said invention and said application and to any and all inventions described in said application for the United States, its territorial possessions and all foreign countries, and the entire right, title and interest in and to any and all Letters Patent which may be granted therefor in the United States, its territorial possessions and all foreign countries; and in and to any and all provisionals, continuations-in-part, continuations, divisions, substitutes, reissues, extensions thereof, and all other applications for Letters Patent relating thereto which have been or shall be filed in the United States, its territorial possession and/or any foreign countries, and all rights, together with all priority rights, under any of the international conventions, unions, agreements, act, and treaties, including all future conventions, unions, agreements, acts, and treaties;

Agree that **H.C. Starck Inc.**, hereinafter referred to as Assignee, may apply for and receive Letters Patent for said invention and said inventions, hereinafter referred to as said invention, in its own name, in the United States, its territorial possessions, and all foreign countries; and that, when requested to carry out in good faith the intent and purpose of this assignment, at the expense of said Assignee, its successors, assigns and legal representatives, the undersigned will execute all continuations-in-part, continuations, divisions, substitutes, reissues, extensions thereof, execute all rightful oaths, assignments, powers of attorney and other papers, testify in any legal or quasi legal proceedings; communicate to said Assignee, its successors, assigns or legal representatives all facts known to the undersigned relating to said invention and the history thereof; and generally do everything possible which said Assignee, its successors, assigns, or legal representatives shall consider desirable for aiding in securing, maintaining and enforcing proper patent protection for said invention and for vesting title to said invention and all applications for patents on said invention in said Assignee, successors, assigns, or legal representatives; and

Covenant with said Assignee, its successors, assigns, or legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same has herein expressed is possessed by the undersigned.

IN THE TESTIMONY WHEREOF we have hereunto set our signatures on the date indicated below.


SCOTT JEFFREY VOLCHKO

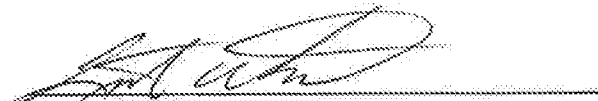
Date: 11-5-12

United States of America)
State of Ohio) ss.:
County of Cuyahoga)

On this 5th day of November, 2012, before me personally came SCOTT JEFFREY VOLCHKO, to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same.



LUTHER THOMAS
Notary Public, State of Ohio
My Commission Expires
November 12, 2016


Notary Public

William Loewenthal
WILLIAM LOEWENTHAL

Date: Nov. 19, 2012

United States of America)
State of Ohio) ss.:
County of Lake)

On this 19 day of November, 2012, before me personally came WILLIAM LOEWENTHAL, to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same.



EMILJANA VUKOVIC
Notary Public, State of Ohio
My Comm. Expires Sept. 25, 2016

Emiljana Vukovic
Notary Public

S. Zim

STEFAN ZIMMERMANN

Date: 15.11.2012

United States of America)
State of _____)
County of _____)

ss.:

Notariat Bad Säckingen
D-79713 Bad Säckingen
Scheffelstraße 3

On this 15th day of November, 2012, before me
personally came Dr. STEFAN ZIMMERMANN, to me known to be the individual
described in and who executed the foregoing instrument, and acknowledged execution
of the same.

[Signature]

Notary Public
Hauschildt, Notar



TUR 1594/2002

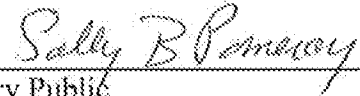


MARK GAYDOS

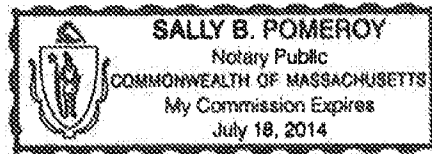
Date: November 5, 2012

United States of America)
State of Massachusetts) ss.:
County of Middlesex)

On this 5th day of November, 2012, before me
personally came MARK GAYDOS, to me known to be the individual
described in and who executed the foregoing instrument, and acknowledged execution
of the same.



Notary Public



SA Miller
STEVEN ALFRED MILLER

Date: November 7, 2012

United States of America)
State of Massachusetts) ss.:
County of Middlesex)

On this 7th day of November, 2012, before me personally came STEVEN ALFRED MILLER, to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same.

Sally B Pomeroy
Notary Public

