

05-04-1999



101028950

To The Honorable Commissioner of Patent:

Original documents or copy thereof.

1. Name of conveying party(ies):  
Applied Optics, Inc.  
4400 South Santa Rita Avenue  
Tucson, Arizona 85714

2. Name and address of receiving party(ies):  
: Star Bank, National Association

04-14-1999

I Address:

U.S. Patent & TMOfc/TM Mail Rcpt Dt. #26

- ☐ Individual ☐ As  
☐ General Partnership ☐ Limited Partnership  
☒ Corporation of Michigan  
☐ Other \_\_\_\_\_  
Additional names of conveying party(ies) attached?  
☐ yes ☒ no

Street Address:  
425 Walnut Street

City Cincinnati  
State Ohio Zip 45202  
☐ Individual ☒ Association  
☐ General Partnership ☐ Limited Partnership  
☐ Corporation  
☐ Other \_\_\_\_\_

Additional name(s) & address(es) attached? ☐ yes ☒ no

3. Nature of Conveyance  
☐ Assignment ☐ Merger  
☒ Security Agreement ☐ Change of Name  
☐ Other \_\_\_\_\_

Execution Date: January 7, 1999

4. Application number(s) or registration number(s): \_\_\_\_\_  
If this document is being filed together with a new application, the execution date of the application is \_\_\_\_\_.

A. Trademark Application No(s): 75/434,945  
B. Trademark Registration No(s). - See Schedule B

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Jeanne E. Longmuir  
Calfee, Halter & Griswold LLP  
800 Superior Avenue - Suite 1400  
Cleveland, Ohio 44114-2688

6. Total number of applications and registrations involved: 1

7. Total fee (37 CVF 3.41): \$40.00  
☒ Enclosed  
☐ Applicant believes that there are no filing fees due at this time.  
☒ Authorization to charge the following:  
☒ Deficiencies or credit any over payment.

8. Deposit account number:

03-0172 The Commissioner is hereby authorized to charge our deposit account for any deficiencies in the enclosed fees.

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Jeanne E. Longmuir  
Name of Person Signing

Signature

Date

4/12/99

Total number of pages comprising cover sheet: 1

CERTIFICATE OF MAILING STAMP ON REVERSE SIDE

TRADEMARK  
REEL: 1891 FRAME: 0012

**SCHEDULE A**  
**to Patent, Trademark and License Security Agreement**  
**(Patents)**

**Applied Optics:**

<b>Description</b>	<b>App/Iss/Reg.</b>	<b>Country</b>	<b>Number</b>
Method for reproducing holograms, kinoforms, diffractive optical elements	Issued 7/23/96	USA	5,538,674
Use of a diffractive structure for .... automotive turn signal Use of diffractive structure for... automotive head lamp Use of diffractive structure for ... automotive tail lamp assembly Use of diffractive structure for ... automotive sidemaker	Applied	USA	

PATENT, TRADEMARK AND  
LICENSE SECURITY AGREEMENT

THIS PATENT, TRADEMARK AND LICENSE SECURITY AGREEMENT ("Agreement") is made by APPLIED OPTICS, INC., a Michigan corporation having its principal office and place of business at 4400 South Santa Rita Avenue, Tucson, Arizona 85714 ("Grantor"), in favor of STAR BANK, NATIONAL ASSOCIATION, a national banking association whose address is 425 Walnut Street, Cincinnati, Ohio 45202 ("Grantee"):

WITNESSETH:

WHEREAS, Grantor, APPLIED COATINGS, INC., a New York corporation ("Applied Coatings"), APPLIED IMAGE, INC., a New York corporation ("Applied Image"), APPLIED GLASSTEC-BUFFALO, INC., a New York corporation ("Applied Glasstec" and collectively with Applied Coatings and Applied Image, the "Co-Borrowers") and Grantee are parties to a certain Amended and Restated Financing Agreement of even date herewith (as the same may hereafter be amended, supplemented, amended and restated, renewed or otherwise modified from time to time, the "Financing Agreement"), which Financing Agreement provides (i) for the Grantee to, from time to time, extend credit to or for the account of Grantor and/or any of the Co-Borrowers and (ii) for the grant by Grantor to Grantee of a security interest in certain of Grantor's assets, including, without limitation, its patents, patent applications, service marks, service mark applications, service names, trademarks, trademark applications, service names, trademarks, trademark applications, trade names, goodwill and licenses;

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

1. Incorporation of Financing Agreement. The Financing Agreement and the terms and provisions thereof are hereby incorporated herein in their entirety by this reference thereto.

2. Security Interest in Patents. To secure the complete and timely satisfaction of all of the "Obligations" (as defined in the Financing Agreement), Grantor hereby grants and conveys to Grantee a lien and security interest in all of the Grantor's right, title and interest in and to all of its now owned or existing and filed and hereafter acquired or arising and filed:

(A) patents and patent applications, including, without limitation, the inventions and improvements described and claimed therein, and those patents listed on Schedule A, attached hereto and made a part hereof, and (a) the reissues, divisions, continuations, renewals, extensions and continuations-in-part thereof, (b) all income, royalties, damages and payments now and hereafter due and/or payable under and with respect thereto, including, without limitation, damages and payments for past or future infringements thereof, (c) the right to sue for past,

present and future infringements thereof, and (d) all rights corresponding thereto throughout the world (all of the foregoing patents and applications, together with the items described in clauses (a)-(d), are sometimes hereinafter individually and/or collectively referred to as the "Patents"); and

(B) license agreements with any other party, whether Grantor is a licensor or licensee under any such license agreement, including, without limitation, the licenses listed on Schedule C attached hereto and made a part hereof, and the right to prepare for sale, sell and advertise for sale, all "Inventory" (as defined in the Financing Agreement) now or hereafter owned by Grantor and now or hereafter covered by such licenses (all of the foregoing is hereinafter referred to collectively as the "Licenses").

3. Security Interest in Trademark and Goodwill. To secure the complete and timely satisfaction of all of the "Obligations" (as defined in the Financing Agreement), Grantor hereby grants and conveys to Grantee a lien and security interest in all of the Grantor's right, title and interest in and to all of its now owned or existing and filed and hereafter acquired or arising and filed:

(A) trademarks, trademark registrations, trade names and trademark applications, service marks, service mark registrations, service names and service mark applications, including, without limitation, the trademarks, trademark registrations, trade names and trademark applications, service marks, service mark registrations, service names and service mark applications listed on Schedule B, attached hereto and made a part thereof, and (a) renewals thereof, (b) all income, royalties, damages and payments now and hereafter due and/or payable with respect thereto, including, without limitation, damages and payment for past or future infringements thereof, (c) the right to sue for past, present and future infringements thereof, and (d) all rights corresponding thereto throughout the world (all of the foregoing trademarks, service marks, trademark and service mark registrations, trade names, service names and applications, together with the items described in clauses (a)-(d), are sometimes hereinafter individually and/or collectively referred to as the "Trademarks"); and

(B) the goodwill of Grantor's business, including, but not by way of limitation, such goodwill connected with and symbolized by the Trademarks.

4. Restrictions on Future Assignments. Grantor agrees that it will not take any action, or permit any action to be taken by others subject to its control, including licensees, or fail to take any action which would affect the validity or enforcement of the rights transferred to Grantee under this Agreement. Grantor further agrees that until the Obligations shall have been satisfied in full and the Financing Agreement shall have been terminated, and provided that an Event of Default has occurred, Grantor will not, without Grantee's prior written consent, enter into any agreement relating to the Patents, Trademarks or Licenses (for example, a license agreement). Prior to the occurrence of an Event of Default, Grantor agrees to give Grantee written notice of any agreements entered into by Grantor relating to the Patents, Trademarks or Licenses within thirty (30) days after such agreement is entered into by Grantor.

5. New Patents, Trademarks, and Licenses. Grantor represents and warrants that the Patents, Trademarks and Licenses listed on Schedules A, B and C, respectively, constitute all of the patents, service marks, trademarks, applications and licenses now owned by

Grantor. If, before the Obligations shall have been satisfied in full, Grantor shall (i) obtain rights to any new patentable inventions, trademarks, trademark registrations, trade names, service marks, service mark registrations, service names, or licenses, or (ii) become entitled to the benefit of any patent, service mark or trademark application, service mark, service mark registration, trademark, trademark registration, or license renewal, or patent for any reissue, division, continuation, renewal, extension, or continuation-in-part of any Patent or any improvement on any Patent, the provisions of this Agreement shall automatically apply thereto and Grantor shall give to Grantee prompt written notice thereof. Grantor hereby authorizes Grantee as attorney in fact to modify this Agreement by amending Schedules A, B and/or C, as applicable, to include any future patents, patent applications, service marks, service mark registrations, service mark applications, service names, trademarks, trademark registrations, trademark applications, trade names and licenses which are Patents, Trademarks or Licenses, as applicable, under Paragraphs 2 and 3 above or under this Paragraph 5, and to file or refile this Agreement with the United States Patent and Trademark Office.

6. Representations and Warranties. Grantor represents and warrants to and agrees with Grantee that:

(i) The Patents and Trademarks are subsisting and have not been adjudged invalid or unenforceable, in whole or in part;

(ii) Each of the Patents and Trademarks is valid and enforceable;

(iii) Grantor is the owner of the Patents and Trademarks and has the power and authority to make, and will continue to have authority to perform, this Agreement according to its terms;

(iv) This Agreement does not violate and is not in contravention of any other agreement to which Grantor is a party or any judgment or decree by which Grantor is bound and does not require any consent under any other agreement to which Grantor is a party or by which Grantor is bound. Upon the occurrence of and during the continuance of an Event of Default, Grantor hereby authorizes the Commissioner of Patents and Trademarks to issue any and all Patents on said inventions and any and all certificates of registration on all Trademarks to Grantee as assignee of Grantor's entire interest;

(v) There has been no prior sale, pledge, encumbrance, assignment or other transfer or disposition of any of the Patents, Trademarks or Licenses or any part thereof and the same are free from all liens, charges and encumbrances of any kind, including but not limited to licenses, shop rights and covenants not to sue third persons, other than Permitted Liens (as defined in the Financing Agreement); and

(vi) The Licenses are valid and binding agreements enforceable according to their terms, subject to any applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting the enforcement of creditors' rights generally and by general equitable principles (whether enforcement is sought by proceedings in equity or at law). Each of the Licenses is in full force and effect and has not been amended or abrogated and there is no default under any of the Licenses.

7. Terms. The term of the security interests granted herein shall extend until the earlier of (i) the expiration of each of the respective Patents, Trademarks and Licenses assigned hereunder, or (ii) the Obligations have been paid in full and the Financing Agreement has been terminated.

8. Contingent Assignment. The Grantor has executed in blank and delivered to the Grantee an assignment of federally registered trademarks in substantially the form of Exhibit 1 hereto (the "Assignment of Trademarks") and an assignment of federally registered patents in substantially the form of Exhibit 2 hereto (the "Assignment of Patents"). The Grantor hereby authorizes the Grantee to complete as assignee and record with the United States Patent and Trademark Office the Assignment of Trademarks and the Assignment of Patents upon the occurrence and during the continuance of an Event of Default and the proper exercise of the Grantee's remedies under this Agreement.

9. Duties of Grantor. Grantor shall have the duty to (i) prosecute diligently any patent application of the Patents made by it and any trademark or service mark application of the Trademarks made by it pending as of the date hereof or thereafter until the Obligations shall have been paid in full, (ii) make application on unpatented but patentable inventions and on trademarks and service marks, as appropriate, and (iii) preserve and maintain all of its rights in patent applications and patents of the Patents and in trademark applications, trademarks, trademark registrations, service mark applications, service marks, and service mark registrations of the Trademarks, provided, however, nothing contained in this Section 9 shall require, prior to the occurrence of an Event of Default, Grantor to take any action pursuant to subsections (i), (ii) and (iii) of this Section 9 with respect to any Patent, Trademark, License or application therefor, if in Grantor's reasonable business judgment, taking such action would not be in its best interests. Any expenses incurred in connection with such applications shall be borne by Grantor. Grantor shall not abandon any right to file a Patent application or Trademark application, or any pending Patent application, Trademark application, Patent, or Trademark without the consent of Grantee.

10. Financing Statements; Documents. At the request of Grantee, Grantor will join with Grantee in executing one or more financing statements pursuant to the Ohio version of the Uniform Commercial Code in form satisfactory to Grantee and will pay the costs of filing and/or recording this Agreement and all financing, continuation and termination statements in all public offices where filing or recording is deemed necessary or desirable by Grantee. Grantor will execute and deliver to Grantee from time to time such supplemental assignments or other instruments, including, but not by way of limitation, additional assignments to be filed with the United States Patent and Trademark Office, as Grantee may require for the purpose of confirming Grantee's interest in the Patents, Trademarks and Licenses.

11. Grantee's Right to Sue. Grantee shall have the same rights, if any, as Grantor has, but shall in no way be obligated, to bring suit in its own name to enforce the Licenses and the Patents and Trademarks, and any licenses thereunder, and, if Grantee shall commence any such suit, Grantor shall, at the request of Grantee, do any and all lawful acts and execute any and all proper documents required by Grantee in aid of such enforcement and Grantor shall promptly, upon demand and as a part of the Obligations, reimburse and indemnify

Grantee for all costs and expenses incurred by Grantee in the exercise of its rights under this Paragraph 11.

12. Waivers. No course of dealing between Grantor and Grantee nor any failure to exercise nor any delay in exercising, on the part of Grantee, any right, power or privilege hereunder or under the Financing Agreement shall operate as a waiver thereof; nor shall any single or partial exercise of any right, power or privilege hereunder or thereunder preclude any other or further exercise thereof or the exercise of any other right, power or privilege.

13. Severability. The provisions of this Agreement are severable, and if any clause or provision shall be held invalid and unenforceable in whole or in part in any jurisdiction, then such invalidity or unenforceability shall affect only such clause or provision, or part thereof, in such jurisdiction, and shall not in any manner affect such clause or provision in any other jurisdiction, or any other clause or provision of this Agreement in any jurisdiction.

14. Modification. This Agreement cannot be altered, amended or modified in any way, except as specifically provided in Paragraph 5 hereof or by a writing signed by the parties hereto.

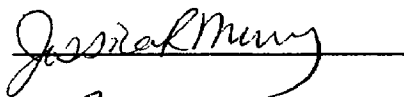
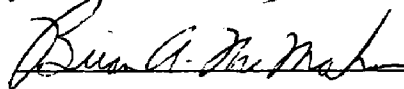
15. Cumulative Remedies; Effect on Financing Agreement. All of Grantee's rights and remedies with respect to the Patents, Trademarks and Licenses, whether established hereby or by the Financing Agreement or any other Loan Document, or by any other agreements or by law shall be cumulative and may be exercised singularly or concurrently. Grantor acknowledges and agrees that this Agreement is not intended to limit or restrict in any way the rights and remedies of Grantee under Financing Agreement but rather is intended to facilitate the exercise of such rights and remedies.

16. Binding Effect; Benefits. This Agreement shall be binding upon the Grantor and its respective successors and assigns, and shall inure to the benefit of Grantee, its successors and assigns.


17. Governing Law. This Agreement has been delivered and accepted in Cleveland, Ohio, and shall be governed by and construed in accordance with the local laws of the State of Ohio.

IN WITNESS WHEREOF, APPLIED OPTICS, INC., by its duly authorized officer, has executed this Agreement as of the 7<sup>th</sup> day of January, 1999.

Signed and acknowledged  
in the presence of:


  


APPLIED OPTICS, INC.

  
Name: Bruno B. Glavich  
Title: President

STATE OF OHIO                     )  
  ) ss:  
COUNTY OF CUYAHOGA )

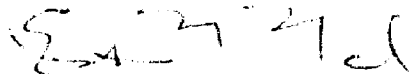
The foregoing Patent, Trademark and License Security Agreement was executed and acknowledged before me this 7th day of January, 1999, by Bruno B. Glavich, the President of APPLIED OPTICS, INC., a Michigan corporation, on behalf of the corporation.

  
Notary Public

**CINDY OBERDORFF**  
Notary Public, State of Ohio  
My Commission Expires Oct. 12, 1999

Accepted at Cleveland, Ohio,  
as of January 7, 1999.

STAR BANK, NATIONAL ASSOCIATION

By:   
Ernest M. Manuel, Vice President



**SCHEDULE A**  
**to Patent, Trademark and License Security Agreement**  
**(Patents)**

**Applied Optics:**

<b>Description</b>	<b>App/Iss/Reg.</b>	<b>Country</b>	<b>Number</b>
Integrated plastic/epoxy diffractive LED lens	Applied		
Objective (EL – 100, 200 & 400)	Applied	USA	
Lab on a Chip: Fabrication and adhesive bonding of microfeatured plastic Near infrared laser welding of microfluidic devices Thermally enhanced diffusion via differing glass temperature Tailored ultrasonic welding of microfeatured plastic for medical devices Ultrasonic microwelding of microfeatured plastic for... medical devices Detection of cancer using a disposable microfluidic device Laser welding of optically transparent plastic using selectively absorbent resins	Applied	USA	
Method for Reproducing Holograms, Kinofroms, Diffractive Optical Elements and Microstructures and a Plastic Binary Optical Element produced by such a method		U.S.	08/656,424

**SCHEDULE A**  
**to Patent, Trademark and License Security Agreement**  
**(Patents)**

**Applied Optics:**

<b>Description</b>	<b>App/Iss/Reg.</b>	<b>Country</b>	<b>Number</b>
Method for Reproducing Holograms, Kinofroms, Diffractive Optical Elements and Microstructures and a Plastic Binary Optical Element produced by such a method		Australia	12098/95
Method for Reproducing Holograms, Kinofroms, Diffractive Optical Elements and Microstructures and a Plastic Binary Optical Element produced by such a method		Canada	2,177,040
Method for Reproducing Holograms, Kinofroms, Diffractive Optical Elements and Microstructures and a Plastic Binary Optical Element produced by such a method		Europe	95 903 122
Method for Reproducing Holograms, Kinofroms, Diffractive Optical Elements and Microstructures and a Plastic Binary Optical Element produced by such a method		Israel	111695

**SCHEDULE A**  
**to Patent, Trademark and License Security Agreement**  
**(Patents)**

**Applied Optics:**

<b>Description</b>	<b>App/Iss/Reg.</b>	<b>Country</b>	<b>Number</b>
Method for Reproducing Holograms, Kinofroms, Diffractive Optical Elements and Microstructures and a Plastic Binary Optical Element produced by such a method		Japan	514587/1995
Method for Reproducing Holograms, Kinofroms, Diffractive Optical Elements and Microstructures and a Plastic Binary Optical Element produced by such a method		Korea	96-702658
Light emitting element having an optical element molded into a face thereof		U.S.	08/965,669
Light emitting element having an optical element molded into a face thereof		PCT States	
Automotive lamp lens and lamp system utilizing diffractive optics and method for making the same		U.S.	08/885,924
Light emitting element having an optical element molded into a face thereof		PCT States	PCT/US98/13610

**SCHEDULE B**  
**to Patent, Trademark and License Security Agreement**  
**(Trademarks)**

**Applied Optics, Inc.:**

<b>Description</b>	<b>App/Iss/Reg.</b>	<b>Country</b>	<b>Number</b>
Donoptics	Applied	USA	75/434,945

**SCHEDULE C**  
**to Patent, Trademark and License Security Agreement**  
**(License Agreements)**

Amendment to Technology Transfer and License Agreement dated January 4, 1999 by  
Donnelly Corporation and Applied Optics, Inc.

EXHIBIT 1

ASSIGNMENT OF TRADEMARKS AND SERVICE MARKS (U.S.)

WHEREAS, Applied Optics, Inc., a corporation organized and existing under the laws of the State of Michigan, having a place of business at 4400 South Santa Rita Avenue, Tucson, Arizona 85714 (the "Assignor"), has adopted and used and is using the trademarks (the "Trademarks") identified on the Annex hereto, and is the owner of the registrations of and pending registration applications for such Trademarks in the United States Patent and Trademark Office identified on such Annex; and

WHEREAS, \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of the State of \_\_\_\_\_, having a place of business at \_\_\_\_\_ (the "Assignee"), is desirous of acquiring the Trademarks and the registrations thereof and registration applications therefor;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, the Assignor does hereby assign, sell and transfer unto the Assignee all right, title and interest in and to the Trademarks, together with (a) the registrations of and registration applications for the Trademarks, (b) the goodwill of the business symbolized by and associated with the Trademarks and the registrations thereof, and (c) the right to sue and recover for, and the right to profits or damages due or accrued arising out of or in connection with, any and all past, present or future infringements or dilution of or damage or injury to the Trademarks or the registrations thereof or such associated goodwill.

This Assignment of Trademarks and Service Marks (U.S.) is intended to and shall take effect as a sealed instrument at such time as the Assignee shall complete this instrument by inserting its name in the second paragraph above and signing its acceptance of this Assignment of Trademarks and Service Marks (U.S.) below.

IN WITNESS WHEREOF, the Assignor, by its duly authorized officer, has executed this assignment, as an instrument under seal, on this \_\_\_\_ day of January, 1999.

APPLIED OPTICS, INC.

\_\_\_\_\_  
Name: Bruno B. Glavich  
Title: President

The foregoing assignment of the Trademarks and the registration thereof and registration applications therefor by the Assignor to the Assignee is hereby accepted as of the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

[Assignee] \_\_\_\_\_

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

Title: \_\_\_\_\_

STATE OF OHIO                                 )  
  ) ss:  
COUNTY OF CUYAHOGA                     )

On this the   5   day of January, 1999, before me appeared Bruno B. Glavich, the person who signed this instrument, who acknowledged that he is the President of Applied Optics, Inc. and that being duly authorized he signed such instrument as a free act on behalf of Applied Optics, Inc.

\_\_\_\_\_  
Notary Public

{Seal}

My commission expires: \_\_\_\_\_



ANNEX

Trademark  
or  
Service Mark

Registrations--  
United States Patent and Trademark Office  
Registration No.                      Registration Date

[List chronologically in ascending numerical order]

Trademark  
or  
Service Mark

Registrations--  
United States Patent and Trademark Office  
Serial No.                      Filing Date

[List chronologically in ascending numerical order]

EXHIBIT 2

ASSIGNMENT OF PATENTS (U.S.)

WHEREAS, APPLIED OPTICS, INC., a corporation organized and existing under the laws of the State of Michigan, having a place of business at 4400 South Santa Rita Avenue, Tucson, Arizona 85714 (the "Assignor"), has adopted and used and is using the patents (the "Patents") identified on the Annex hereto, and is the owner of the registrations of and pending registration applications for such Patents in the United States Patent and Trademark Office identified on such Annex; and

WHEREAS, \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of the State of \_\_\_\_\_, having a place of business at \_\_\_\_\_ (the "Assignee"), is desirous of acquiring the Patents and the registrations thereof and registration applications therefor;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, the Assignor does hereby assign, sell and transfer unto the Assignee all right, title and interest in and to the Patents, together with (a) the registrations of and registration applications for the Patents, (b) the goodwill of the business symbolized by and associated with the Patents and the registrations thereof, and (c) the right to sue and recover for, and the right to profits or damages due or accrued arising out of or in connection with, any and all past, present or future infringements or dilution of or damage or injury to the Patents or the registrations thereof or such associated goodwill.

This Assignment of Patents (U.S.) is intended to and shall take effect as a sealed instrument at such time as the Assignee shall complete this instrument by inserting its name in the second paragraph above and signing its acceptance of this Assignment of Patents (U.S.) below.

IN WITNESS WHEREOF, the Assignor, by its duly authorized officer, has executed this assignment, as an instrument under seal, on this \_\_\_\_ day of January, 1999.

APPLIED OPTICS, INC.

---

Name: Bruno B. Glavich

Title: President

The foregoing assignment of the Patents and the registration thereof and registration applications therefor by the Assignor to the Assignee is hereby accepted as of the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

[Assignee] \_\_\_\_\_

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

Title: \_\_\_\_\_

)

) SS:

)

Notary Public

My commission expires: \_\_\_\_\_

ANNEX

Registrations--  
United States Patent and Trademark Office  
Registration No.                      Registration Date

Patents

[List chronologically in ascending numerical order]

Registrations--  
United States Patent and Trademark Office  
Serial No.                      Filing Date

Patents

[List chronologically in ascending numerical order]