

MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION

This application claims the benefit of the priority date under 35USC119 from Provisional Application 60/704,926 filed 3 August 2005.

This invention relates to a method of monitoring at least some of the individual fibers of an optical cable for intrusion.

BACKGROUND OF THE INVENTION

In the following Patent Applications all filed June 15, 2005 of the present applicant are disclosed and claimed techniques for monitoring single mode fibers for intrusion:

Application Serial No. 11/152,679 entitled AN INTRUSION DETECTION SYSTEM FOR USE ON SINGLE MODE OPTICAL FIBER USING FRESNEL REFLECTIONS.

EX1002
CyberSecure
IPR2025-01441

Application Serial No. 11/152,772 entitled AN INTRUSION DETECTION SYSTEM FOR USE ON SINGLE MODE OPTICAL FIBER USING A STORAGE REGISTER FOR DATA.

Application Serial No. 11/152,680 entitled AN INTRUSION DETECTION SYSTEM FOR USE ON SINGLE MODE OPTICAL FIBER USING A SIMPLIFIED POLARIMETER.

Application Serial No. 11/152,663 entitled AN INTRUSION DETECTION SYSTEM FOR USE ON SINGLE MODE OPTICAL FIBER USING A COST REDUCED POLARIMETER.

Application Serial No. 11/152,681 entitled AN INTRUSION DETECTION SYSTEM FOR USE ON SINGLE MODE OPTICAL FIBER USING A POLARIMETER.

In the following Patent Applications both filed May 26, 2005 of the present applicant are disclosed and claimed techniques for monitoring multi-mode fibers for intrusion:

Application Serial No. 11/137,776 entitled AN INTRUSION DETECTION SYSTEM FOR USE ON AN OPTICAL FIBER USING A TRANSLATOR OF TRANSMITTED DATA FOR OPTIMUM MONITORING CONDITIONS.

Application Serial No. 11/137,777 entitled AN INTRUSION DETECTION SYSTEM FOR USE ON MULTI-MODE OPTICAL FIBER USING AN OFFSET LAUNCH AND TAP COUPLER.

Reference is also made to the following application filed on the same day as this application which is Application Serial 11/XXXXXX under Attorney Docket 85570/802 entitled AN INTRUSION DETECTION AND LOCATION SYSTEM FOR USE ON MULTIMODE FIBER OPTIC CABLE

The disclosures of all of the above applications are incorporated herein by reference.

Using the techniques disclosed above, in physical layer intrusion detection, one factor to be considered in protecting a multi-fiber cable is the choice of how many fiber strands to protect. On one hand, a single fiber or fiber pair will protect the cable somewhat, and at a reduced price. At the other extreme, an IDS system per fiber can be quite costly.

SUMMARY OF THE INVENTION

It is one object of the present invention to provide an improved method of monitoring fibers of a cable.

According to the invention there is provide a method for detecting movement of optical fibers of an optical fiber cable comprising:

providing a optical fiber cable having a first end and a second end, the cable having a plurality of fibers;

monitoring a plurality of fibers of the cable by detecting movement at locations along the length thereof by:

providing at least one source of light for injection onto the fibers;

providing at least one sensor arrangement for receiving light transmitted through the fibers;

injecting light from the at least one source into one end of the each of the fibers to be monitored;

in the at least one sensor arrangement, detecting a series of received light signals which have been transmitted along the fibers;

in the at least one sensor arrangement, comparing at least some of the received light signals relative to data obtained from previously received ones of the received light signals to detect changes in the received light signals relative to the previously received light signals;

in the at least one sensor arrangement, analyzing the changes to determine any changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

generating an alarm in response to the detection of any such changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

and using optical communication components to communicate light from the at least one source to more than one of the fibers and to communicate light from more than one of the fibers to the at least one sensor arrangement such that the number of fibers monitored is greater than the number of sources and greater than the number of sensor arrangements.

Preferably there is provided at least one jumper connected between a first and a second fibers so as to loop the monitor light exiting from the first fiber into the second fiber so as to use in monitoring the first and second fibers a common single source.

Preferably there is provided at a first end of the cable a plurality of jumpers each connected between an exit end of a first fiber and an entry end of a next fiber fibers so as to loop the monitor light exiting from the first fiber into the next fiber and there is provided at a second end of the cable a second plurality of jumpers each connected between an exit end of a next fiber and an entry end of a subsequent fiber fibers so as to loop the monitor light exiting from the next fiber into the subsequent fiber such that the light from a common single source passes thorough each fiber sequentially.

Preferably the source and the sensing arrangement are arranged at a first end of the cable and at the second end of the cable is provided a passive unit forming the series of jumpers defining the communication components.

Preferably there is provided a single source and a single sensing arrangement and the monitored fibers are treated as one fiber therebetween.

Preferably the sensing arrangement includes locating arrangement for detecting the location of a detected movement and there is provided a stored table of fiber lengths which allows the sensing arrangement to determine which fiber was is moved.

Preferably there is provided a plurality of wavelength division multiplexers (WDMs) such that each monitored fiber has connected thereto at an entry end and an exit end a respective pair of the WDMs for separating the light from the source from a data signal transmitted simultaneously with the monitoring light through the fiber.

Preferably all transmission on monitored cable is the monitor wavelength of the light source multiplexed to the data wavelength.

Preferably all loop-backs between WDMs is at the monitor wavelength.

Preferably there is provided a plurality of cables arranged in a hub-and-spoke arrangement where a main unit in a central location feeds remote units and wherein the fibers of more than one of the cable are monitored.

Preferably there is provided a plurality of optical switches each arranged at a respective end of a respective fiber.

Preferably the optical switches are arranged to break the circuit of a pair of fibers in the event that a movement is detected.

Preferably the optical switches are arranged to redirect the monitor wavelength round a fiber pair, thereby bypassing a broken link.

Preferably the optical switches are arranged to scan fibers to identify which one has been intruded, precluding the need for locating.

As an alternative method, there is provided for the plurality of fibers a second plurality of independent monitoring signals each of which can be separated from the others wherein the number of signals is less than the number of fibers, each monitoring signal being associated with a respective sensing arrangement.

In this alternative method, there may be provided multiplexing devices arranged such that each of the fibers to be monitored has launched

therein a unique combination of one or more of the independent monitoring signals.

Thus in one arrangement, the invention solves this by allowing a single IDS unit with additional distal-end optics to monitor some or all of the fibers in a cable at a reduced cost..

This invention allows for the monitoring all of the fibers in a cable using a loop-back technique. When used with a locating IDS system, individual fibers can be identified. When used with optical switches, compromised fibers can be eliminated from the data path.

BRIEF DESCRIPTION OF THE DRAWINGS

One embodiment of the invention will now be described in conjunction with the accompanying drawings in which:

Figure 1 shows schematically a system according to the present invention using a dark fiber.

Figure 2 shows schematically a system according to the present invention using an active fiber.

Figure 3 shows schematically a system according to the present invention using a hub and spoke arrangement.

Figure 4 shows schematically a system similar to that of Figure 1 according to the present invention using a dark fiber where there are provided switches for controlling the connection of the fibers.

Figure 5 shows schematically a system similar to that of Figure 2 according to the present invention using an active fiber where there are provided

switches for controlling the connection of the fibers.

Figure 6 shows schematically an alternative system where a broadband laser source is communicated to a series of the fibers of a cable and there are provided dense wave demultiplexers for extracting different signals from different ones of the fibers.

Figure 7 shows a trace of an OTDR modified for intrusion detection where each of the loops of fiber are illustrated by a section of the trace

In the drawings like characters of reference indicate corresponding parts in the different figures.

DETAILED DESCRIPTION

In Figure 1 is shown a cable 10 formed by a series of fibers 11 and connecting from a first end connection system 12 at one end of the cable to a second end connection system 13 at the second remote end of cable. At the first end is provided a monitoring system 17 including a transmitter 15 of light signals which are communicated to a receiver 16 after passing through one or more fibers.

The fibers can be single mode fibers or multi-mode fibers and can use the techniques described in one or more of the above applications to provide monitoring of movement of the fiber indicative of an intrusion event. The disclosure of the above applications are incorporated herein by reference to provide full details of the various techniques available. Other techniques can also be used.

Internal to the monitoring equipment is a series of jumpers 18A at the transmit or first end and 18B at the distal end, with which to loop the monitor light back into the next fiber. At the distal end, a passive unit 13 consisting of a mirror set of loops 18B completes the circuit. The monitoring equipment treats the cable as one fiber. If the monitoring equipment is capable of event location using the techniques described in one or more of the above applications, a stored table of fiber lengths would allow such a device to determine which fiber was compromised.

Thus the arrangement describer herein uses optical communication components to communicate light from the at least one source to more than one of the fibers and to communicate light from more than one of the fibers to the at least one sensor arrangement such that the number of fibers monitored is greater than the number of sources and greater than the number of sensor arrangements.

A similar system is shown in Figure 2 which uses internal wavelength division multiplexers (WDMs) 19A at the transmit first end and WDMs 19B at the remote end.

Thus a first fiber 11A is connected to a WDM 19A at its transmit end so as to receive thereon a monitor signal $M\lambda$ which is multiplexed with a data signal D1. At the remote end the multiplexed signal is separated by the WDM 19B to extract the data signal D1 and the monitor signal $M\lambda$ which is looped back using the jumper 18B. The looped back monitoring signal is again multiplexed at the WDM 19C with data signal D2. The remaining fibers of the cable are

symmetrically monitored and may carry data using the arrangement generally described above in the same symmetrical manner and using the same monitoring signal $M\lambda$. All transmission on monitored cable is the monitor wavelength multiplexed to the data wavelength. All loop-backs between WDMs is at the monitor wavelength. All signals shown entering and leaving the boxes are data at the data wavelength.

As shown in Fig 3 the method can also be used in a hub-and-spoke situation where a main unit 20 in a central location feeds remote units 21 and 22 over cables 10A and 10B. This can be used in a server and computer set up such as in an office environment. .

Turning now to Figure 4 there is shown a further embodiment substantially identical to that of Figure 1 but with the addition of optical switches 30. In this series of embodiments, the optical switches 30 can be used to:

1. Break the circuit of the intruded fiber pair;
2. Redirect the monitor wavelength round a fiber pair, thereby bypassing a broken link; and/or
3. Scan fibers to identify which one has been intruded, precluding the need for locating hardware.

Thus the transmitter 15 is connected to a first optical switch 30A which can switch between two paths feeding the first fiber 11A or the third fiber 11C. At the third fiber 11C is provided a switch 30C which allows the third fiber to select signals from either the transmitter 15 or the second fiber 11B. The fibers 11D, 11E, 11F, 11G, and 11H are connected symmetrically relative to the

switches 30D, 30E, 30F, 30G, and 30H. In this way, for example the switches 30A and 30C can be operated to break the circuit defined by the fiber pair 11A and 11B. In this way, for example the switches 30A, 30C and 30D can be operated to redirect the monitor wavelength round the fiber pair 11A and 11B by using the fiber pair 11C and 11D. In this way, for example by operating the switches in pairs, the monitoring signal can be communicated through selected ones of the pairs of fibers to determine which are compromised.

In Figure 5 is shown an arrangement which uses both the switches 30 and the WDMs 19 for use of the system described above in relation to Figure 4 on an active cable system as shown and described in relation to Figure 2.

Turning now to Figure 6 there is shown an alternative arrangement. The merit of this design is to be able to monitor N fibers with only $\log_2(N+1)$ detectors. For example:

detectors	fibers
1	1
2	3
3	7
4	15
5	31
10	1023

There is provided a broadband laser 40 which generates light at a required number of wavelengths equal to the number of detectors so that in the example shown there are two wavelengths λ_1 and λ_2 and two detectors 50 and 60.

In the example in the above table where there are 3 detectors there will of course be three wavelengths monitored by those detectors.

Each of the fibers 41, 42 and 43 supplies an output to a respective one of three Dense Wave Demultiplexors 44, 45 and 46 which extract wavelengths λ_1 and λ_2 from the broadband signal.

There is an Intrusion Detection Hardware unit 50, 60 for each received wavelength. As explained hereinbefore the Intrusion Detection Hardware units may monitor multi-mode or single mode fibers using the techniques described in one of more of the above patent applications. Each wavelength is independently monitored looking for characteristics indicative of movement of the fiber as described in the above applications.

The signal processing system determines which fiber an event has occurred on by examining activity of the wavelength inputs. If an event occurs only at wavelength λ_1 , the system attributes the event to fiber 41 because the Demultiplexor 44 is the only one which extracts signals which relate only to wavelength λ_1 . If an event occurs only on λ_2 , the system attributes the event to fiber 42 because the Demultiplexor 45 is the only one which extracts signals which relate only to wavelength λ_2 . If the occurs on both λ_1 and λ_2 simultaneously, the system attributes the event to fiber 43 because the Demultiplexor 46 is the only one which extracts signals which relate both to wavelengths λ_1 and λ_2 . It will be appreciated that this scheme can be extrapolated to three or more sensing systems and three or more wavelengths.

In this way there is provided for the plurality of fibers a second plurality of independent monitoring signals λ_1 and λ_2 each of which can be separated from the others by the Demultiplexors, where the number of signals is less than the number of fibers 41, 42 43, each monitoring signal λ_1 and λ_2 being associated with a respective sensing arrangement 50, 60.

Thus there multiplexing devices arranged such that each of the fibers to be monitored has detected therefrom a unique combination of one or more of the independent monitoring signals, that is λ_1 , λ_2 , and combined λ_1 and λ_2 .

Turning now to Figure 7 is shown the representative trace of an Optical Time Domain Reflectometer (OTDR) which has been modified for intrusion detection. The horizontal axis 61 represents distance in an OTDR, vertical axis 60 represents signal level. Trace portion 62 shows the loss of the first fiber, reflection 63 is representative of the interface between the distal end of fiber one and the distal end of fiber 2. Portion 64 represents fiber 2, however the fiber characteristics are displayed reversed in time as the light is launched into the distal end travelling toward the near end. This pattern continues N times to the final section 65. Using analysis software, the system can identify which fiber has experienced a perturbation by detecting which segment on the virtual modified OTDR trace.

Since various modifications can be made in my invention as herein above described, and many apparently widely different embodiments of same made within the spirit and scope of the claims without department from such

spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

CLAIMS:

1. A method for detecting movement of optical fibers of an optical fiber cable comprising:

providing a optical fiber cable having a first end and a second end, the cable having a plurality of fibers;

monitoring a plurality of fibers of the cable by detecting movement at locations along the length thereof by:

providing at least one source of light for injection onto the fibers;

providing at least one sensor arrangement for receiving light transmitted through the fibers;

injecting light from the at least one source into one end of the each of the fibers to be monitored;

in the at least one sensor arrangement, detecting a series of received light signals which have been transmitted along the fibers;

in the at least one sensor arrangement, comparing at least some of the received light signals relative to data obtained from previously received ones of the received light signals to detect changes in the received light signals relative to the previously received light signals;

in the at least one sensor arrangement, analyzing the changes to determine any changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

generating an alarm in response to the detection of any such changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

and using optical communication components to communicate light from the at least one source to more than one of the fibers and to communicate light from more than one of the fibers to the at least one sensor arrangement such that the number of fibers monitored is greater than the number of sources and greater than the number of sensor arrangements.

2. The method according to claim 1 wherein there is provided at least one jumper connected between a first and a second fibers so as to loop the monitor light exiting from the first fiber into the second fiber so as to use in monitoring the first and second fibers a common single source.

3. The method according to claim 1 wherein there is provided at a first end of the cable a plurality of jumpers each connected between an exit end of a first fiber and an entry end of a next fiber fibers so as to loop the monitor light exiting from the first fiber into the next fiber and wherein there is provided at a second end of the cable a second plurality of jumpers each connected between an exit end of a next fiber and an entry end of a subsequent fiber fibers so as to loop the monitor light exiting from the next fiber into the subsequent fiber such that the light from a common single source passes thorough each fiber sequentially.

4. The method according to claim 3 wherein the source and the sensing arrangement are arranged at a first end of the cable and at the second

end of the cable is provided a passive unit forming the series of jumpers defining the communication components.

5. The method according to claim 3 wherein there is provided a single source and a single sensing arrangement and wherein the monitored fibers are treated as one fiber therebetween.

6. The method according to claim 1 wherein the sensing arrangement includes locating arrangement for detecting the location of a detected movement and wherein there is provided a stored table of fiber lengths which allows the sensing arrangement to determine which fiber was is moved.

7. The method according to claim 1 wherein there is provided a plurality of wavelength division multiplexers (WDMs) such that each monitored fiber has connected thereto at an entry end and an exit end a respective pair of the WDMs for separating the light from the source from a data signal transmitted simultaneously with the monitoring light through the fiber.

8. The method according to claim 7 wherein all transmission on monitored cable is the monitor wavelength of the light source multiplexed to the data wavelength.

9. The method according to claim 7 wherein all loop-backs between WDMs is at the monitor wavelength.

10. The method according to claim 1 wherein there is provided a plurality of cables arranged in a hub-and-spoke arrangement where a main unit in a central location feeds remote units and wherein the fibers of more than one of the cable are monitored.

11. The method according to claim 1 wherein there is provided a plurality of optical switches each arranged at a respective end of a respective fiber.

12. The method according to claim 1 wherein the optical switches are arranged to break the circuit of a pair of fibers in the event that a movement is detected.

13. The method according to claim 1 wherein the optical switches are arranged to redirect the monitor wavelength round a fiber pair, thereby bypassing a broken link.

14. The method according to claim 1 wherein the optical switches are arranged to scan fibers to identify which one has been intruded, precluding the need for locating.

15. The method according to claim 1 wherein there is provided for the plurality of fibers a second plurality of independent monitoring signals each of which can be separated from the others wherein the number of signals is less than the number of fibers, each monitoring signal being associated with a respective sensing arrangement.

The method according to claim 15 wherein there are provided multiplexing devices arranged such that each of the fibers to be monitored has detected therefrom a unique combination of one or more of the independent monitoring signals.

ABSTRACT

Some or all of the optical fibers of a single-mode or multi-mode cable are monitored for intrusion by transmitting through the fibers a signal which can be analyzed for changes in its characteristics which are indicative of movement as a prelude to an intrusion event. To avoid independent monitors of all of the fibers, in some cases the same light signal is looped through a plurality of the fibers in series by passive jumpers. Switches can be used to disconnect out those fibers which are compromised. As an alternative a plurality of separate monitoring signals can be provided each associated with its own sensor where unique combinations of the signals are transmitted through separate fibers allowing a higher number of fibers to be monitored than the number of signals.

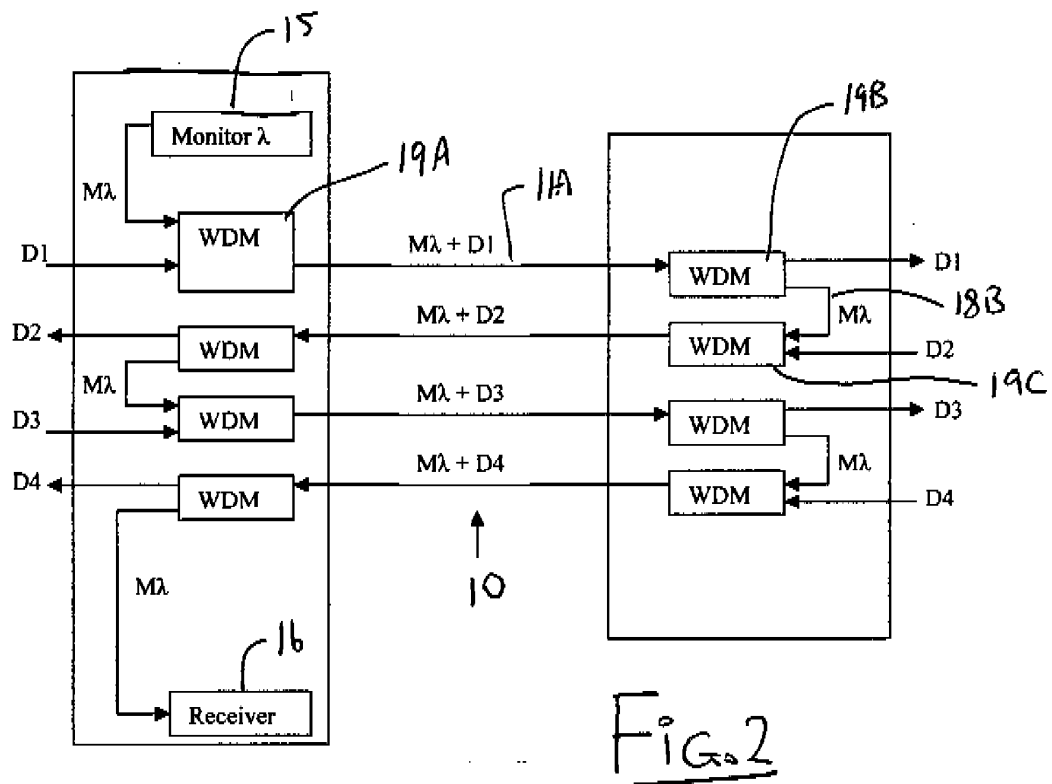
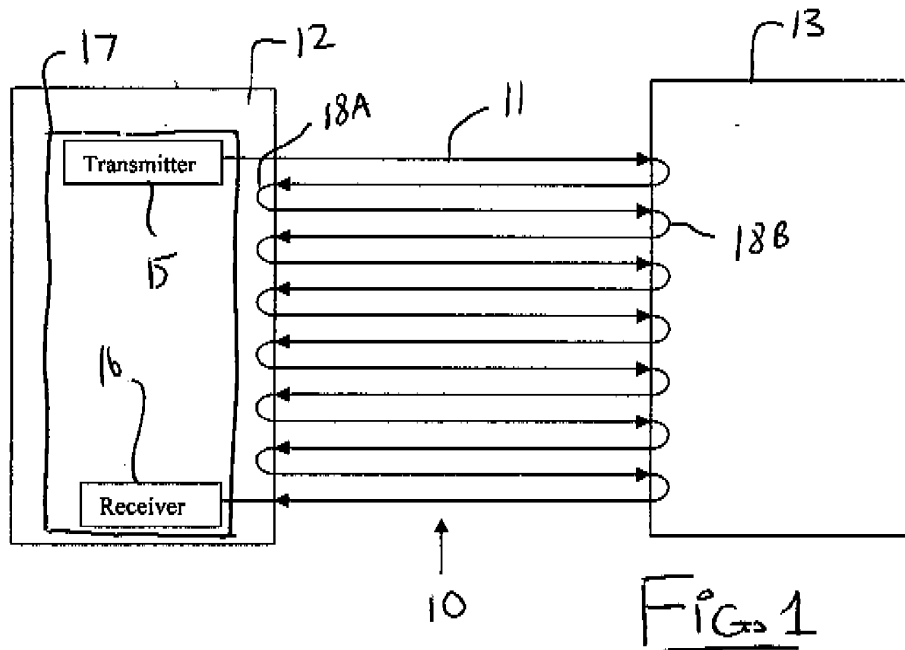
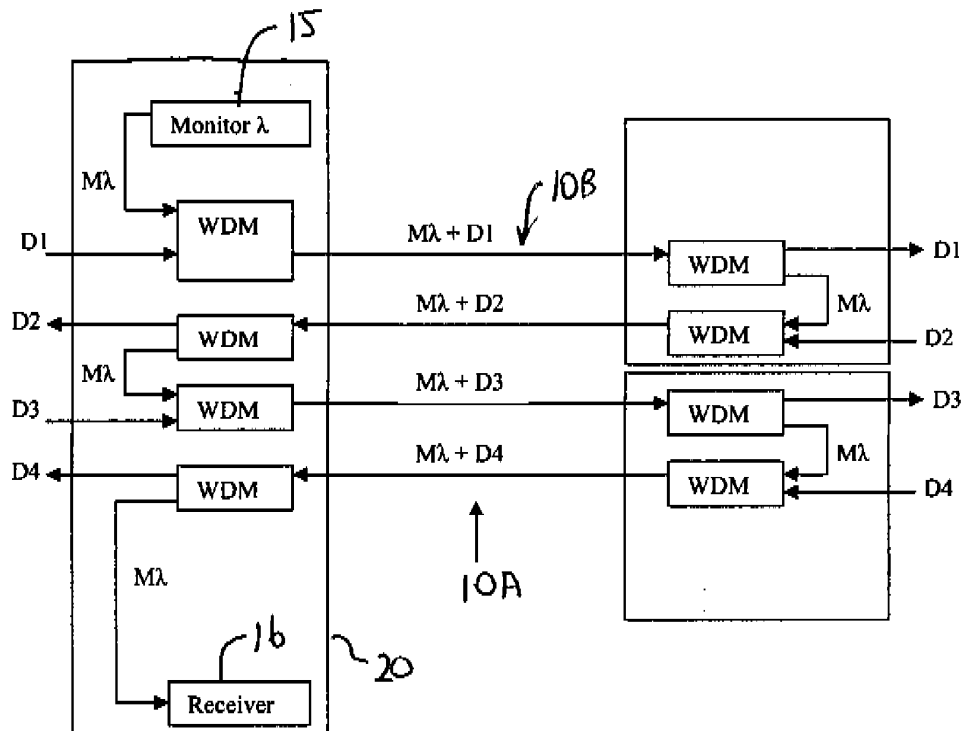


Fig 3

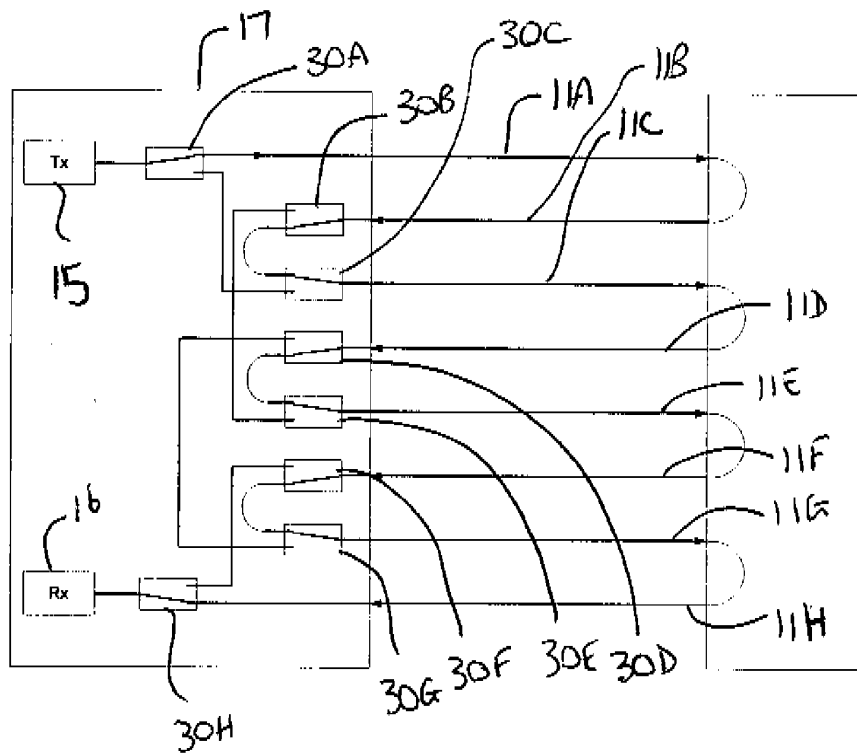
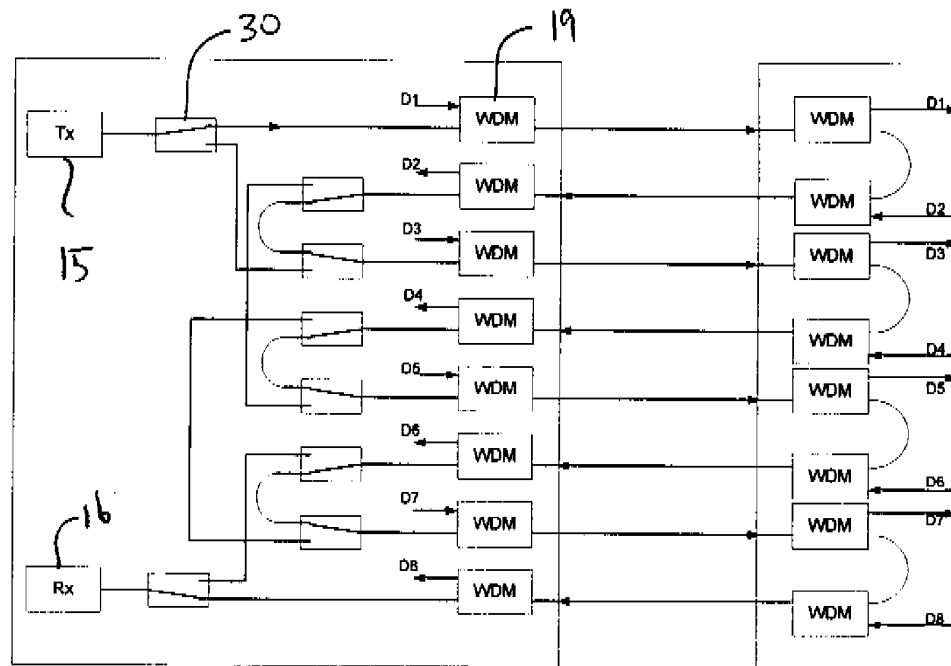
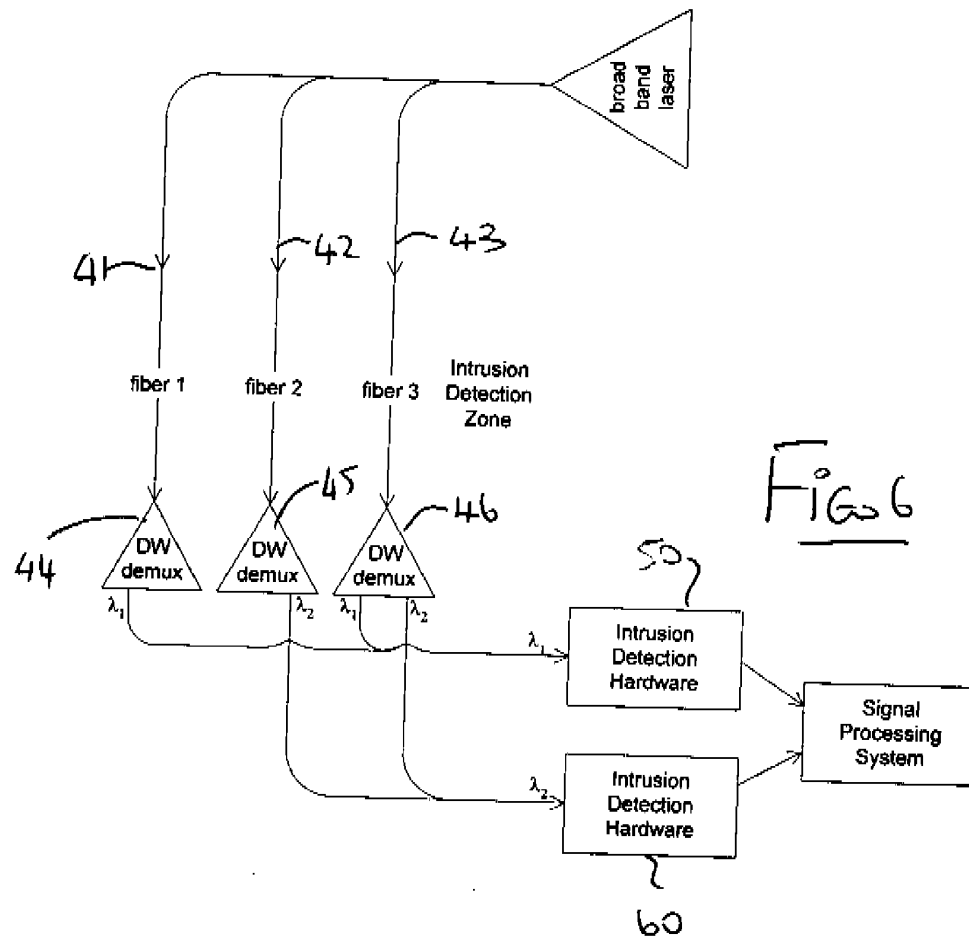


FIG 4



Figs



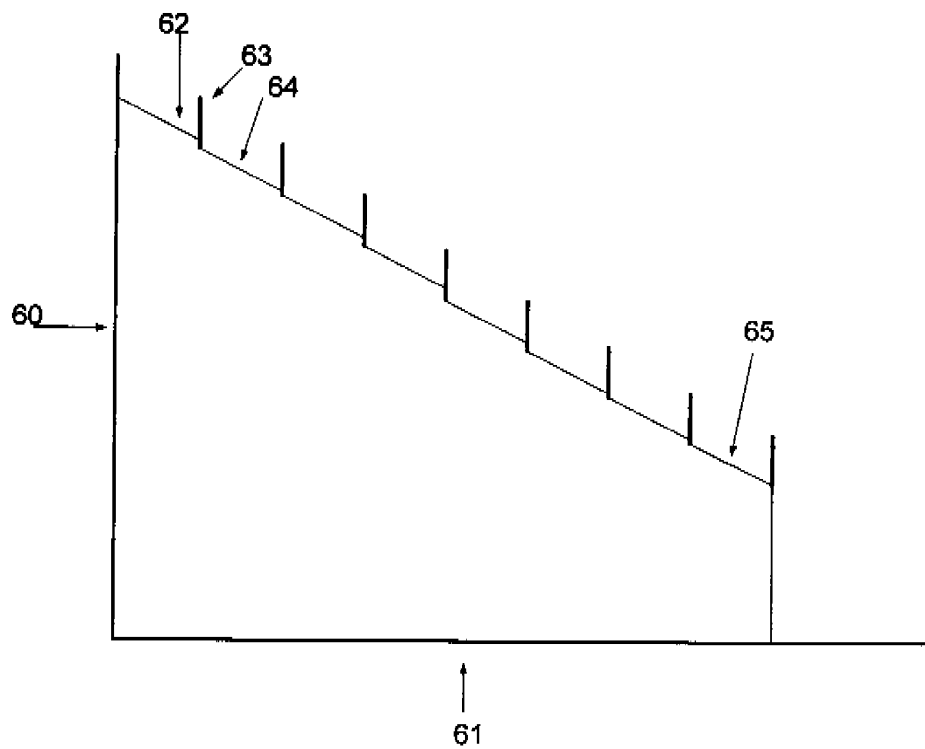


FIG. 7

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	85570-1302
		Application Number	
Title of Invention	MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1					Remove
Applicant Authority		☒ Inventor		☐ Legal Representative under 35 U.S.C. 117	
				☐ Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Cary	R	Murphy		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Newton	State/Province	NC	Country of Residence i	US
Citizenship under 37 CFR 1.41(b) i		US			
Mailing Address of Applicant:					
Address 1		246 Ashford Drive			
Address 2					
City	Newton	State/Province	NC		
Postal Code	28658	Country i	US		
Applicant 2					Remove
Applicant Authority		☒ Inventor		☐ Legal Representative under 35 U.S.C. 117	
				☐ Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Mark	K.	Bridges		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Hickory	State/Province	NC	Country of Residence i	US
Citizenship under 37 CFR 1.41(b) i		US			
Mailing Address of Applicant:					
Address 1		5475 Chestnut Drive			
Address 2					
City	Hickory	State/Province	NC		
Postal Code	28658	Country i	US		
Applicant 3					Remove
Applicant Authority		☒ Inventor		☐ Legal Representative under 35 U.S.C. 117	
				☐ Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Joseph		Giovanni		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Conover	State/Province	NC	Country of Residence i	US

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number		85570-1302	
		Application Number			
Title of Invention		MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION			
Citizenship under 37 CFR 1.41(b) i		US			
Mailing Address of Applicant:					
Address 1		301-10th Street N.W.			
Address 2					
City	Conover	State/Province		NC	
Postal Code	28613	Country ⁱ	US		
Applicant 4					Remove
Applicant Authority ☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name		Suffix
	David	E.	Vokey		
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service					
City	Sydney	Country Of Residence ⁱ		CA	
Citizenship under 37 CFR 1.41(b) i		CA			
Mailing Address of Applicant:					
Address 1		1728 Shearwater Terrace			
Address 2					
City	Sydney	State/Province		BC	
Postal Code	V8L 5L4	Country ⁱ	CA		
Applicant 5					Remove
Applicant Authority ☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name		Suffix
	Daniel	M.	Goertzen		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Conover	State/Province	NC	Country of Residence ⁱ US	
Citizenship under 37 CFR 1.41(b) i		US			
Mailing Address of Applicant:					
Address 1		301-10th Street			
Address 2					
City	Conover	State/Province		NC	
Postal Code	28613	Country ⁱ	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. Add					

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).	
☐ An Address is being provided for the correspondence Information of this application.	
Customer Number	23529

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	85570-1302
		Application Number	
Title of Invention	MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION		
Email Address	uspto@adeco.com	Add Email	Remove Email

Application Information:

Title of the Invention	MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION		
Attorney Docket Number	85570-1302	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter			
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)		Suggested Figure for Publication (if any)	
Publication Information:			
☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)			
☐ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not been and will not be the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing.			

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.			
Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ US Representative (37 CFR 11.9)
Customer Number	23529		

Domestic Priority Information:

This section allows for the applicant to claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c). Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.			
Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	60704926	2005-08-03
Additional Domestic Priority Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	85570-1302
		Application Number	
Title of Invention	MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION		

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

			Remove
Application Number	Country ⁱ	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			☒ Yes ☐ No
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1					Remove
If the Assignee is an Organization check here. ☐					
Prefix	Given Name	Middle Name	Family Name	Suffix	
Mailing Address Information:					
Address 1					
Address 2					
City		State/Province			
Country ⁱ			Postal Code		
Phone Number			Fax Number		
Email Address					
Additional Assignee Data may be generated within this form by selecting the Add button.					Add

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature				Date (YYYY-MM-DD)	2006-08-02
First Name	Adrian	Last Name	Battison	Registration Number	31726

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION		
First Named Inventor:		Cary R. Murphy		
Filer:		Adrian David Battison		
Attorney Docket Number:		85570-1302		
Filed as Small Entity				
Utility Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	75	75
Utility Search Fee	2111	1	250	250
Utility Examination Fee	2311	1	100	100
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				425

Electronic Acknowledgement Receipt

EFS ID:	1138277
Application Number:	11461917
Confirmation Number:	4439
Title of Invention:	MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION
First Named Inventor:	Cary R. Murphy
Customer Number:	23529
Filer:	Adrian David Battison
Filer Authorized By:	
Attorney Docket Number:	85570-1302
Receipt Date:	02-AUG-2006
Filing Date:	
Time Stamp:	16:38:08
Application Type:	Utility
International Application Number:	

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part	Pages
1	Specification	specification.pdf	79573	no	19

Warnings:					
Information:					
2	Drawings	drawings.pdf	34994	no	6
Warnings:					
Information:					
3	Application Data Sheet	US_ADS_Form_SB_14.pdf	1313331	no	5
Warnings:					
Information:					
4	Fee Worksheet (PTO-875)	fee-info.pdf	8379	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			1436277		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/461,917	08/02/2006	Cary R. Murphy	85570-1302

23529
ADE & COMPANY INC.
P.O. BOX 28006 1795 HENDERSON HIGHWAY
WINNIPEG, MB R2G1P0
CANADA

CONFIRMATION NO. 4439
FORMALITIES
LETTER

Date Mailed: 08/15/2006

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
Applicant must submit \$ 75 to complete the basic filing fee for a small entity.
- The oath or declaration is missing. *A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.*
Note: If a petition under 37 CFR 1.47 is being filed, an oath or declaration in compliance with 37 CFR 1.63 signed by all available joint inventors, or if no inventor is available by a party with sufficient proprietary interest, is required.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
 - The drawings have a line quality that is too light to be reproduced (weight of all lines and letters must be heavy enough to permit adequate reproduction) or text that is illegible (reference characters, sheet numbers, and view numbers must be plain and legible) see 37 CFR 1.84(l) and (p)(1)); See Figure(s) 4, 5.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.16(f) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **\$490** for a small entity

- **\$75** Statutory basic filing fee.
- **\$65** Surcharge.
- The application search fee has not been paid. Applicant must submit **\$250** to complete the search fee.
- The application examination fee has not been paid. Applicant must submit **\$100** to complete the examination fee for a small entity in compliance with 37 CFR 1.27.

Replies should be mailed to: Mail Stop Missing Parts
 Commissioner for Patents
 P.O. Box 1450
 Alexandria VA 22313-1450

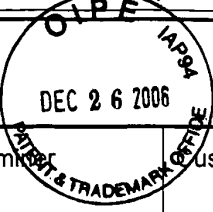
*A copy of this notice **MUST** be returned with the reply.*


Office of Initial Patent Examination (571) 272-4000, or 1-800-PTO-9199, or 1-800-972-6382
PART 3 - OFFICE COPY

IFuz

Response To Notice To File Missing Parts Of Application Filing Date Granted (PTO-1533)(Small Entity)				Docket No. 85570-1302 ADB	
In Re Application Of: Cary R. Murpy et al					
Application No. 11/461,917	Filing Date August 2, 2006	Examiner TRADEMARK OFFICE	Customer No. 23529	Group Art Unit 2874	Confirmation No. 4439
Invention: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION					
Mail Stop Missing Parts COMMISSIONER FOR PATENTS: This is a response to the Notice to File Missing Parts of Application - Filing Date Granted (PTO-1533) mailed on <u>August 15, 2006</u> Date Enclosed herewith for filing are the following: ☒ A copy of the Notice to File Missing Parts of Application - Filing Date Granted (PTO-1533). (REQUIRED) ☐ An oath or declaration in compliance with 37 CFR 1.63, including residence information and identifying the application by the above Application Number and Filing Date. ☒ A properly signed oath or declaration in compliance with 37 CFR 1.63. ☐ An oath or declaration in compliance with 37 CFR 1.63 listing the names of all inventors and signed by the omitted inventor(s), identifying this application by the above Application Number and Filing Date. ☐ A verified English translation of the non-English language application papers as originally filed. It is requested that this translation be used as the copy for examination purposes in the United States Patent and Trademark Office. ☒ <u>1</u> verified small entity declaration(s) ☒ is/are attached. ☐ was/were filed on _____ 12/27/2006 MBERHE 00000042 11461917 05 FC:2253 510.00 OP Repln. Ref: 12/27/2006 MBERHE 0010001200 Date: 12/27/06 Name/Number: 11461917 FC: 9204 \$/3.00 CR ☐ A separate request for refund. ☒ Other (list): Preliminary Amendment, copy of filing certificate, replacement drawings (2 sheets), copies of original drawings (2 sheets) Assignment Cover Sheet Assignment fee - \$40 M.O.					

Response To Notice To File Missing Parts Of Application Filing Date Granted (PTO-1533)(Small Entity)				Docket No. 85570-1302 ADB	
In Re Application Of: Cary R. Murpy et al					
Application No. 11/461,917	Filing Date August 2, 2006	Examiner	Customer No. 23529	Group Art Unit 2874	Confirmation No. 4439
Invention: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION					
<u>TO THE COMMISSIONER FOR PATENTS:</u> <u>Mail Stop Missing Parts</u>					
☒ Completion of application fees as calculated below:					
☒ Utility application basic fee				\$75.00	
☐ Design application basic fee					
☒ Search Fee				\$250.00	
☒ Examination Fee				\$100.00	
☒ Total number of independent claims = 1					
☒ Total number of claims = 16					
☐ Multiple dependent claims					
☒ Surcharge for late payment of filing fee and/or late filing of original declaration or oath				\$65.00	
☐ Petition and fee for filing by other than all the inventors or a person not the inventor					
☐ Fee for processing an application filed with a non-English language specification					
☐ Fee for processing and retention of application					
Total completion of application fees				\$490.00	
This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a response to the above-identified Notice to File Missing Parts of Application. The requested extension is as follows (check time period desired). If an additional time extension is required, please consider this a petition therefor.					
☐ One month ☐ Two months ☒ Three months ☐ Four months ☐ Five months					
from: <u>October 15, 2006</u>		until: <u>January 15, 2007</u>			
Date		Date			
Total time extension fees				\$510.00	
Total fees due				\$1,000.00	

Response To Notice To File Missing Parts Of Application Filing Date Granted (PTO-1533) (Small Entity)				Docket No. 85570-1302 ADB				
In Re Application Of: Cary R. Murpy et al								
Application No. 11/461,917	Filing Date August 2, 2006		Customer No. 23529	Group Art Unit 2874	Confirmation No. 4439			
Invention: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION								
<u>TO THE COMMISSIONER FOR PATENTS:</u> <u>Mail Stop Missing Parts</u>								
The fee of \$1,075.00 is to be paid as follows: ☒ A check in the amount of the fee is enclosed. ☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account No. 01-0310 Enclosed is \$1075 for the filing fee, would you please credit our Deposit Account with \$75 for the overpayment. ☒ If an additional extension of time is required, please consider this a petition therefor and charge any additional fees which may be required to Deposit Account No. 01-0310 ☐ Payment by credit card. Form PTO-2038 is attached. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.								
 _____ Signature		Dated: December 22, 2006						
Ryan W. Dupuis Registration No: 47,345 /ll CC:		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;"> I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____ (Date) </td> </tr> <tr> <td style="padding: 5px;"> _____ Signature of Person Mailing Correspondence </td> </tr> <tr> <td style="padding: 5px;"> _____ Typed or Printed Name of Person Mailing Correspondence </td> </tr> </table>				I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____ (Date)	_____ Signature of Person Mailing Correspondence	_____ Typed or Printed Name of Person Mailing Correspondence
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____ (Date)								
_____ Signature of Person Mailing Correspondence								
_____ Typed or Printed Name of Person Mailing Correspondence								



UNITED STATES PATENT AND TRADEMARK OFFICE



UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/461,917	08/02/2006	Cary R. Murphy	85570-1302

CONFIRMATION NO. 4439

FORMALITIES
LETTER

23529
 ADE & COMPANY INC.
 P.O. BOX 28006 1795 HENDERSON HIGHWAY
 WINNIPEG, MB R2G1P0
 CANADA

Date Mailed: 08/15/2006

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)2/27/2006 MBERHE 00000042 11461917

Filing Date Granted

01 FC:4011	75.00 OP
02 FC:2111	250.00 OP
03 FC:2311	100.00 OP
04 FC:2051	65.00 OP

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
Applicant must submit \$ 75 to complete the basic filing fee for a small entity.
- The oath or declaration is missing. A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
Note: If a petition under 37 CFR 1.47 is being filed, an oath or declaration in compliance with 37 CFR 1.63 signed by all available joint inventors, or if no inventor is available by a party with sufficient proprietary interest, is required.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
 - The drawings have a line quality that is too light to be reproduced (weight of all lines and letters must be heavy enough to permit adequate reproduction) or text that is illegible (reference characters, sheet numbers, and view numbers must be plain and legible) see 37 CFR 1.84(l) and (p)(1)); See Figure(s) 4, 5.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.16(f) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

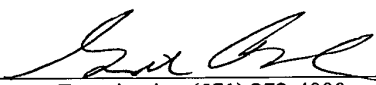
SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **\$490** for a small entity

- **\$75** Statutory basic filing fee.
- **\$65** Surcharge.
- The application search fee has not been paid. Applicant must submit **\$250** to complete the search fee.
- The application examination fee has not been paid. Applicant must submit **\$100** to complete the examination fee for a small entity in compliance with 37 CFR 1.27.

Replies should be mailed to: Mail Stop Missing Parts
 Commissioner for Patents
 P.O. Box 1450
 Alexandria VA 22313-1450

*A copy of this notice **MUST** be returned with the reply.*


Office of Initial Patent Examination (571) 272-4000, or 1-800-PTO-9199, or 1-800-972-6382
PART 2 - COPY TO BE RETURNED WITH RESPONSE



Docket No.
85570-1302 ADB

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION

the specification of which

(check one)

☐ is attached hereto.

☒ was filed on August 2, 2006 as United States Application No. or PCT International Application Number 11/461,917 and was amended on _____

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, or plant breeder's rights certificate(s), or 365(a) of any PCT International application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Claimed

(Number)

(Country)

(Day/Month/Year Filed)

☐

(Number)

(Country)

(Day/Month/Year Filed)

☐

(Number)

(Country)

(Day/Month/Year Filed)

☐

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

60/704,926	August 2, 2005
(Application Serial No.)	(Filing Date)
(Application Serial No.)	(Filing Date)
(Application Serial No.)	(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

[illegible]

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

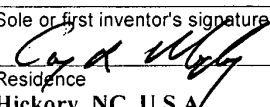
POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

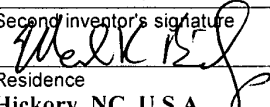
Adrian D. Battison
Michael R. Williams
Ryan W. Dupuis

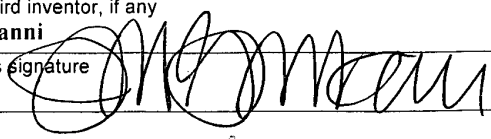
Registration No: 31,726
Registration No: 45,333
Registration No: 47,345

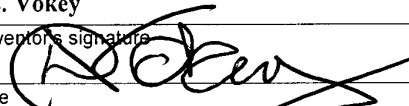
Send Correspondence to: Mr. Adrian D. Battison
Ade & Company Inc.
P.O. Box 28006 - 1795 Henderson Highway
Winnipeg, Manitoba, Canada R2G 4E9

Direct Telephone Calls to: *(name and telephone number)*
Adrian D. Battison - (204)944-0032

Full name of sole or first inventor Cary R. Murphy	
Sole or first inventor's signature 	Date 6 Dec 06
Residence Hickory, NC, U.S.A.	
Citizenship American	
Post Office Address 924-43rd Avenue Ct., N.E., Hickory NC 28601, U.S.A.	

Full name of second inventor, if any Mark K. Bridges	
Second inventor's signature 	Date 6 Dec 06
Residence Hickory, NC, U.S.A.	
Citizenship American	
Post Office Address 5475 Chestnut Drive, Hickory, NC 28602, U.S.A.	

Full name of third inventor, if any Joseph Giovanni	
Third inventor's signature 	Date 12-06-06
Residence ~~Conover, NC, U.S.A.~~ Hickory NC USA	
Citizenship American	
Post Office Address ~~301-10th Street, N.W., Conover NC 28613, U.S.A.~~ 1540 9th Street LN NW, Hickory NC 28601, USA	

Full name of fourth inventor, if any David E. Vokey	
Fourth inventor's signature 	Date 12/06/06
Residence Sidney, British Columbia, Canada	
Citizenship Canadian	
Post Office Address 1728 Shearwater Terrace, Sidney, British Columbia, Canada, V8L 5L4	

Full name of fifth inventor, if any Daniel M. Goertzen	
Fifth inventor's signature	Date
Residence Conover, NC, U.S.A.	
Citizenship American	
Post Office Address 301-10th Street, N.W., Conover NC 28613, U.S.A.	

Full name of sixth inventor, if any	
Sixth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

Adrian D. Battison
Michael R. Williams
Ryan W. Dupuis

Registration No: 31,726
Registration No: 45,333
Registration No: 47,345

Send Correspondence to: Mr. Adrian D. Battison
Ade & Company Inc.
P.O. Box 28006 - 1795 Henderson Highway
Winnipeg, Manitoba, Canada R2G 4E9

Direct Telephone Calls to: (name and telephone number)
Adrian D. Battison (204) 944-0032

Full name of sole or first inventor	Cary R. Murphy
Sole or first inventor's signature	<i>Cary R. Murphy</i> Date 7 9 Nov 06
Residence	Hickory, NC, USA
Citizenship	American
Post Office Address	924-43rd Avenue CT., N.E., Hickory, NC 28601, U.S.A.

Full name of second inventor, if any	Daniel M. Goertzen
Second inventor's signature	<i>Dan Goertzen</i> Date 7 18 Dec 2006
Residence	Conover, NC, USA - Winnipeg MB Canada
Citizenship	American Canadian
Post Office Address	301-10th Street, N.W., Conover, NC 28613, USA.
	27 Coleman Cove Winnipeg MB R3N 4H3 CANADA



Cary R. Murphy et al
REPLACEMENT Sheet 3 of 6
Battison - 85570-1302 ADB

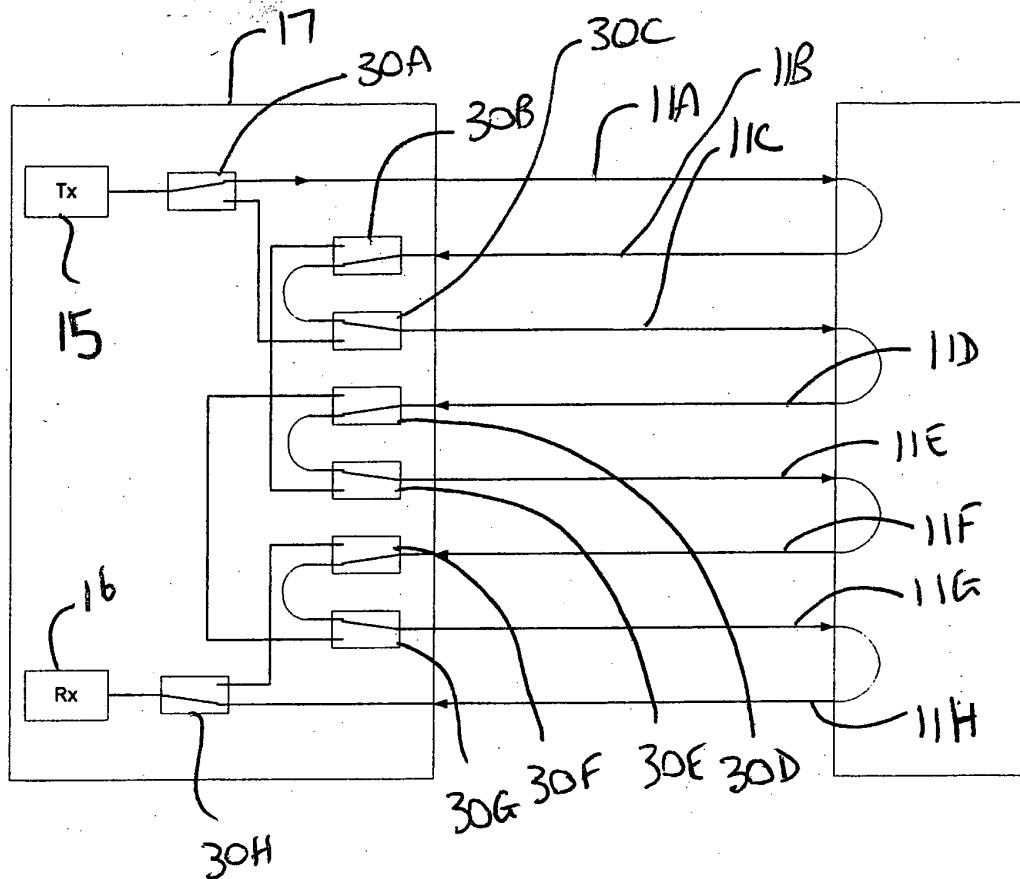


Fig 4

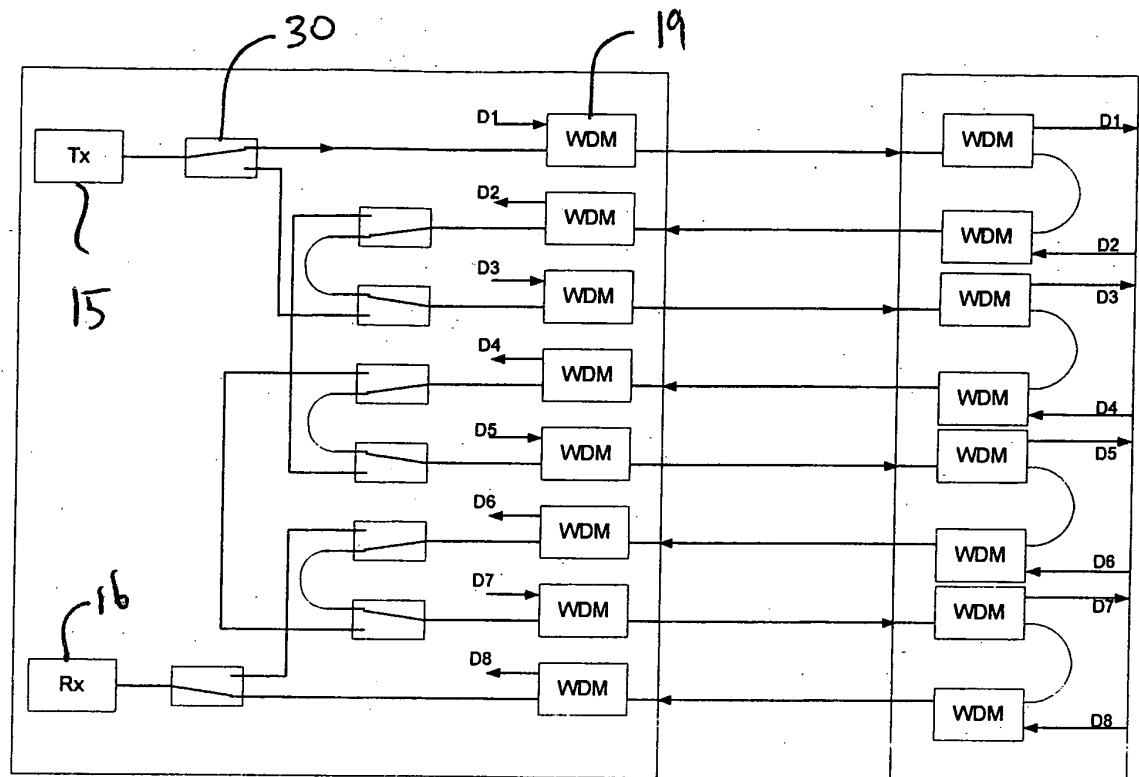


FIG 5



EXAMINER:

GROUP: 2874

APPLICANT: Cary R. Murphy et al

SERIAL NO: 11/461,917

FILED: August 2, 2006

FOR: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE
FOR INTRUSION

U.S. Patent and Trademark Office
Customer Service Window Missing Parts
Randolph Building
401 Dulany Street
Alexandria, VA 22314
U.S.A.

Dear Sir:

In responding to the Notice to File Missing Parts of Application - Filing
Date Granted dated August 15, 2006, please find enclosed herewith the following:

In the Specification:

Please replace the following amended paragraphs:

Page 3, paragraph 1, lines 1 to 4 insert the following paragraph:

Reference is also made to the following application filed on the same day
as this application which is Application ~~Serial 11/XXXXXX~~ Serial No: 11/461,661 under
Attorney Docket 85570/802 entitled AN INTRUSION DETECTION AND LOCATION
SYSTEM FOR USE ON MULTIMODE FIBER OPTIC CABLE

In the Claims:

Claims 1 to 15 are of record in the case.

Explanation of Amendments in the Claims:

1.(original) A method for detecting movement of optical fibers of an optical fiber cable comprising:

providing a optical fiber cable having a first end and a second end, the cable having a plurality of fibers;

monitoring a plurality of fibers of the cable by detecting movement at locations along the length thereof by:

providing at least one source of light for injection onto the fibers;

providing at least one sensor arrangement for receiving light transmitted through the fibers;

injecting light from the at least one source into one end of the each of the fibers to be monitored;

in the at least one sensor arrangement, detecting a series of received light signals which have been transmitted along the fibers;

in the at least one sensor arrangement, comparing at least some of the received light signals relative to data obtained from previously received ones of the received light signals to detect changes in the received light signals relative to the previously received light signals;

in the at least one sensor arrangement, analyzing the changes to determine any changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

generating an alarm in response to the detection of any such changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

and using optical communication components to communicate light from the at least one source to more than one of the fibers and to communicate light from more than one of the fibers to the at least one sensor arrangement such that the number of fibers monitored is greater than the number of sources and greater than the number of sensor arrangements.

2.(original) The method according to claim 1 wherein there is provided at least one jumper connected between a first and a second fibers so as to loop the monitor light exiting from the first fiber into the second fiber so as to use in monitoring the first and second fibers a common single source.

3.(original) The method according to claim 1 wherein there is provided at a first end of the cable a plurality of jumpers each connected between an exit end of a first fiber and an entry end of a next fiber fibers so as to loop the monitor light exiting from the first fiber into the next fiber and wherein there is provided at a second end of the cable a second plurality of jumpers each connected between an exit end of a next fiber and an entry end of a subsequent fiber fibers so as to loop the monitor light exiting from the next fiber into the subsequent fiber such that the light from a common single source passes thorough each fiber sequentially.

4.(original) The method according to claim 3 wherein the source and the sensing arrangement are arranged at a first end of the cable and at the second end of

the cable is provided a passive unit forming the series of jumpers defining the communication components.

5.(original) The method according to claim 3 wherein there is provided a single source and a single sensing arrangement and wherein the monitored fibers are treated as one fiber therebetween.

6.(original) The method according to claim 1 wherein the sensing arrangement includes locating arrangement for detecting the location of a detected movement and wherein there is provided a stored table of fiber lengths which allows the sensing arrangement to determine which fiber was is moved.

7.(original) The method according to claim 1 wherein there is provided a plurality of wavelength division multiplexers (WDMs) such that each monitored fiber has connected thereto at an entry end and an exit end a respective pair of the WDMs for separating the light from the source from a data signal transmitted simultaneously with the monitoring light through the fiber.

8.(original) The method according to claim 7 wherein all transmission on monitored cable is the monitor wavelength of the light source multiplexed to the data wavelength.

9.(original) The method according to claim 7 wherein all loop-backs between WDMs is at the monitor wavelength.

10.(original) The method according to claim 1 wherein there is provided a plurality of cables arranged in a hub-and-spoke arrangement where a main unit in a

central location feeds remote units and wherein the fibers of more than one of the cable are monitored.

11.(original) The method according to claim 1 wherein there is provided a plurality of optical switches each arranged at a respective end of a respective fiber.

12.(original) The method according to claim 1 wherein the optical switches are arranged to break the circuit of a pair of fibers in the event that a movement is detected.

13.(original) The method according to claim 1 wherein the optical switches are arranged to redirect the monitor wavelength round a fiber pair, thereby bypassing a broken link.

14.(original) The method according to claim 1 wherein the optical switches are arranged to scan fibers to identify which one has been intruded, precluding the need for locating.

15.(original) The method according to claim 1 wherein there is provided for the plurality of fibers a second plurality of independent monitoring signals each of which can be separated from the others wherein the number of signals is less than the number of fibers, each monitoring signal being associated with a respective sensing arrangement.

(currently amended)16.____The method according to claim 15 wherein there are provided multiplexing devices arranged such that each of the fibers to be monitored has detected therefrom a unique combination of one or more of the independent monitoring signals.

In the Drawings:

Figures 4 and 5 have been objected to as having line quality that is not adequate for reproduction. We therefore enclose replacement Figures 4 and 5 (2 sheets) together with a copy of the drawings (2 sheets) as originally filed for the Examiner's convenience.

REMARKS:

It has been noted in the attached Filing Certificate that four of the inventor's addresses are incorrect. Mr. Vokey lives in **Sidney**, Canada and Mr. Murphy and Mr. Giovanni has a new address which is in **Hickory**, NC. And Mr. Goertzen lives in **Winnipeg, Canada**.

Would you please enter the above amendments in this application.

Respectfully submitted

CARY R. MURPHY ET AL



PER: _____
Ryan W. Dupuis
Registration No: 47,345

ADB/II
December 22, 2006
Enc.(5)

Adrian D. Battison Winnipeg, Manitoba, Canada
Telephone (204) 944-0032 - FAX (204) 942-5723

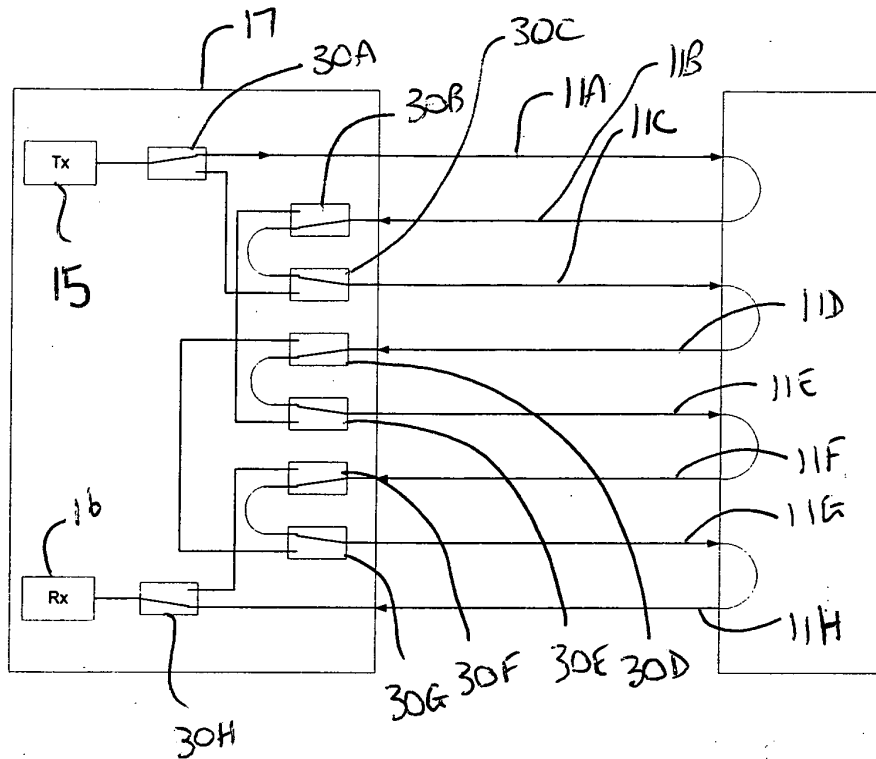
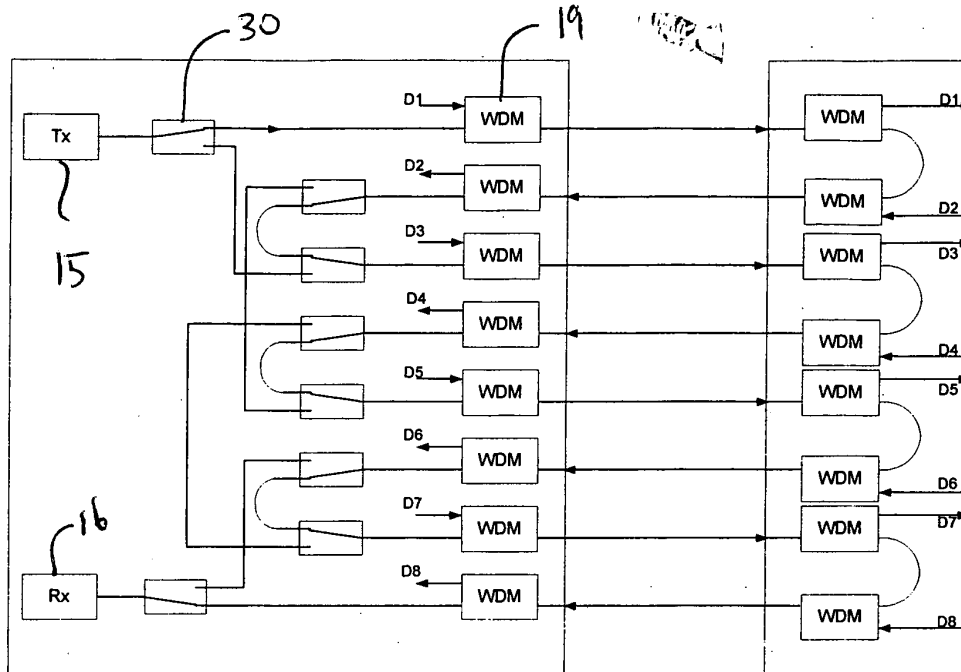


Fig 4



Figs



EXAMINER:

GROUP: 2874

APPLICANT: Cary R. Murphy et al

SERIAL NO: 11/461,917

FILED: August 2nd, 2006

FOR: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL
CABLE FOR INTRUSION

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 222313-1450
U.S.A.

Dear Sir:

Small Entity Statement under 37 CFR 1.27

Network Integrity Systems Inc., whose full post office address is 301-10th Street, N.W., Conover, NC 28613, U.S.A., a small business concern identified in the attached Assignment declare that they qualify as a small business concern for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code.

They declare that rights under contract or law have been conveyed to and remain with them with regard to the invention identified above.

Respectfully submitted

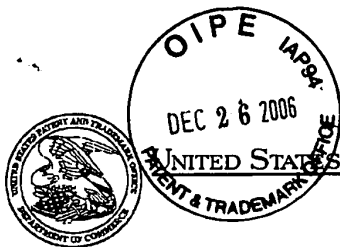
CARY R. MURPHY ET AL


PER: _____

Ryan W. Dupuis
Registration No: 47,345

ADB/II
December 22, 2006
Adrian D. Battison

Winnipeg, Manitoba, Canada
Telephone (204) 944-0032- FAX (204) 942-5723



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
11/461,917	08/02/2006	2874	0.00	85570-1302	6	15	1

23529
 ADE & COMPANY INC.
 P.O. BOX 28006 1795 HENDERSON HIGHWAY
 WINNIPEG, MB R2G1P0
 CANADA

RECEIVED
FILING RECEIPT

AUG 31 2006

0C000000020029449*

CONFIRMATION NO. 4439

ADE & COMPANY INC.

Date Mailed: 08/15/2006

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

Cary R. Murphy, Newton, NC;
 Mark K. Bridges, Hickory, NC;
 Joseph Giovanni, Conover, NC;
 David E. Vokey, Sydney, CANADA;
 Daniel M. Goertzen, Conover, NC;

Power of Attorney: None**Domestic Priority data as claimed by applicant**

This appln claims benefit of 60/704,926 08/03/2005

Foreign Applications

If Required, Foreign Filing License Granted: 08/15/2006

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US11/461,917**

Projected Publication Date: To Be Determined - pending completion of Missing Parts**Non-Publication Request:** No**Early Publication Request:** No**** SMALL ENTITY ****

Title

MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION

Preliminary Class

385

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER**Title 35, United States Code, Section 184****Title 37, Code of Federal Regulations, 5.11 & 5.15****GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

PATENT APPLICATION FEE DETERMINATION RECORD

Effective December 8, 2004

Application or Docket Number

11/461917

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
U.S. NATIONAL STAGE FEES		
BASIC FEE	SMALL ENT. = \$ 150	LARGE ENT. = \$ 300
EXAMINATION FEE	Satisfies PCT Article 33(1)-(4) = \$ 50 / \$ 100	All other situations = \$ 100 / \$ 200
SEARCH FEE	U.S. is ISA = \$ 50 / \$ 100 ALL other countries = \$ 200 / \$ 400	All other situations = \$ 250 / \$ 500
FEE FOR EXTRA SPEC. PGS.	minus 100 =	/ 50 =
TOTAL CHARGEABLE CLAIMS	15 minus 20 =	
INDEPENDENT CLAIMS	1 minus 3 =	
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

SMALL ENTIT. TYPE ☐ OR

OTHER THAN SMALL ENTITY

RATE	FEE		RATE	FEE
BASIC FEE	paid	OR	BASIC FEE	
EXAM. FEE			EXAM. FEE	
SEARCH FEE			SEARCH FEE	
X \$ 125 =			X \$ 250 =	
X \$ 25 =		OR	X \$ 50 =	
X \$ 100 =		OR	X \$ 200 =	
+ \$ 180 =		OR	+ \$ 360 =	
TOTAL		OR	TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	* 16 Minus	** 20	=
Independent	* 1 Minus	*** 3	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

SMALL ENTITY OR

OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X \$ 25 =		OR	X \$ 50 =	
X \$ 100 =		OR	X \$ 200 =	
+ \$ 180 =		OR	+ \$ 360 =	
TOTAL ADDIT. FFF		OR	TOTAL ADDIT. FFF	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	* Minus	**	=
Independent	* Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X \$ 25 =		OR	X \$ 50 =	
X \$ 100 =		OR	X \$ 200 =	
+ \$ 180 =		OR	+ \$ 360 =	
TOTAL ADDIT. FFF		OR	TOTAL ADDIT. FFF	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than "20", enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than "3", enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
11/461,917	08/02/2006	2874	490	85570-1302	6	16	1

CONFIRMATION NO. 4439

23529
ADE & COMPANY INC.
2157 Henderson Highway
WINNIPEG, MBR2G1P9
CANADA

UPDATED FILING RECEIPT

Date Mailed: 01/05/2007

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).**

Applicant(s)

Cary R. Murphy, Hickory, NC;
Mark K. Bridges, Hickory, NC;
Joseph Giovanni, Hickory, NC;
David E. Vokey, Sidney, CANADA;
Daniel M. Goertzen, Winnipeg, CANADA;

Power of Attorney:

Adrian Battison--31726
Michael Williams--45333
Ryan Dupuis--47345

Domestic Priority data as claimed by applicant

This appln claims benefit of 60/704,926 08/03/2005

Foreign Applications

If Required, Foreign Filing License Granted: 08/15/2006

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is
US11/461,917

Projected Publication Date: 04/19/2007

Non-Publication Request: No

Early Publication Request: No

** SMALL ENTITY **

Title

MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION

Preliminary Class

385

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
11/461,917	08/02/2006	2874	490	85570-1302 ADB	6	16	1

CONFIRMATION NO. 4439

23529
ADE & COMPANY INC.
2157 Henderson Highway
WINNIPEG, MBR2G1P9
CANADA

UPDATED FILING RECEIPT

Date Mailed: 01/08/2007

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).**

Applicant(s)

Cary R. Murphy, Hickory, NC;
Mark K. Bridges, Hickory, NC;
Joseph Giovanni, Hickory, NC;
David E. Vokey, Sidney, CANADA;
Daniel M. Goertzen, Winnipeg, CANADA;

Power of Attorney:

Adrian Battison--31726
Michael Williams--45333
Ryan Dupuis--47345

Domestic Priority data as claimed by applicant

This appln claims benefit of 60/704,926 08/03/2005

Foreign Applications

If Required, Foreign Filing License Granted: 08/15/2006

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is
US11/461,917

Projected Publication Date: 04/19/2007

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION

Preliminary Class

385

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/461,917	08/02/2006	Cary R. Murphy	85570-1302 ADB	4439

23529 7590 01/29/2007
ADE & COMPANY INC.
2157 Henderson Highway
WINNIPEG, MB R2G1P9
CANADA

EXAMINER

ART UNIT	PAPER NUMBER
2874	

MAIL DATE	DELIVERY MODE
01/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

Notice of Non-Compliant Amendment (37 CFR 1.121)	Application No. <i>11/461917</i>	Applicant(s)	
	Examiner	Art Unit	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

The amendment document filed on *12/27/16* considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121 or 1.4. In order for the amendment document to be compliant, correction of the following item(s) is required.

THE FOLLOWING MARKED (X) ITEM(S) CAUSE THE AMENDMENT DOCUMENT TO BE NON-COMPLIANT:

- ☐ 1. Amendments to the specification:
 - ☐ A. Amended paragraph(s) do not include markings.
 - ☐ B. New paragraph(s) should not be underlined.
 - ☐ C. Other _____.
- ☐ 2. Abstract:
 - ☐ A. Not presented on a separate sheet. 37 CFR 1.72.
 - ☒ B. Other _____.
- ☒ 3. Amendments to the drawings:
 - ☒ A. The drawings are not properly identified in the top margin as "Replacement Sheet," "New Sheet," or "Annotated Sheet" as required by 37 CFR 1.121(d).
 - ☐ B. The practice of submitting proposed drawing correction has been eliminated. Replacement drawings showing amended figures, without markings, in compliance with 37 CFR 1.84 are required.
 - ☒ C. Other _____.
- ☒ 4. Amendments to the claims:
 - ☐ A. A complete listing of all of the claims is not present.
 - ☐ B. The listing of claims does not include the text of all pending claims (including withdrawn claims)
 - ☒ C. Each claim has not been provided with the proper status identifier, and as such, the individual status of each claim cannot be identified. Note: the status of every claim must be indicated after its claim number by using one of the following status identifiers: (Original), (Currently amended), (Canceled), (Previously presented), (New), (Not entered), (Withdrawn) and (Withdrawn-currently amended).
 - ☐ D. The claims of this amendment paper have not been presented in ascending numerical order.
 - ☒ E. Other: *Claim 16 should be a new claim not currently amended.*
- ☐ 5. Other (e.g., the amendment is unsigned or not signed in accordance with 37 CFR 1.4):

For further explanation of the amendment format required by 37 CFR 1.121, see MPEP § 714.

TIME PERIODS FOR FILING A REPLY TO THIS NOTICE:

- Applicant is given **no new time period** if the non-compliant amendment is an after-final amendment, an amendment filed after allowance, or a drawing submission (only). If applicant wishes to resubmit the non-compliant after-final amendment with corrections, the **entire corrected amendment** must be resubmitted.
- Applicant is given **one month**, or thirty (30) days, whichever is longer, from the mail date of this notice to supply the correction, if the non-compliant amendment is one of the following: a preliminary amendment, a non-final amendment (including a submission for a request for continued examination (RCE) under 37 CFR 1.114), a supplemental amendment filed within a suspension period under 37 CFR 1.103(a) or (c), and an amendment filed in response to a Quayle action. If any of above boxes 1. to 4. are checked, the correction required is only the **corrected section** of the non-compliant amendment in compliance with 37 CFR 1.121.

Extensions of time are available under 37 CFR 1.136(a) only if the non-compliant amendment is a non-final amendment or an amendment filed in response to a Quayle action.

Failure to timely respond to this notice will result in:

Abandonment of the application if the non-compliant amendment is a non-final amendment or an amendment filed in response to a Quayle action; or

Non-entry of the amendment if the non-compliant amendment is a preliminary amendment or supplemental amendment.

Legal Instruments Examiner (LIE), if applicable

Telephone No.

Part of Paper No.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/461,917	08/02/2006	Cary R. Murphy	85570-1302 ADB

CONFIRMATION NO. 4439

23529
ADE & COMPANY INC.
2157 Henderson Highway
WINNIPEG, MBR2G1P9
CANADA

Title: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION

Publication No. US-2007-0086694-A1

Publication Date: 04/19/2007

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publicly available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 703-305-3028.

Pre-Grant Publication Division, 703-605-4283

EXAMINER:**GROUP:** 2874**APPLICANT:** Cary R. Murphy et al**SERIAL NO:** 11/461,917**FILED:** August 2, 2006**FOR:** MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE
FOR INTRUSION

U.S. Patent and Trademark Office
Customer Service Window Amendment
Randolph Building
401 Dulany Street
Alexandria, VA 22314
U.S.A.

Dear Sir:

PRELIMINARY AMENDMENT

In response to the Notice of Non-Compliant Amendment dated January
29, 2007.

In the Specification:

Please replace the following amended paragraphs:

Page 3, paragraph 1, lines 1 to 4 insert the following paragraph:

Reference is also made to the following application filed on the same day
as this application which is Application Serial ~~11/XXXXXX~~ Serial No. 11/461,661 under
Attorney Docket 85570/802 entitled AN INTRUSION DETECTION AND LOCATION
SYSTEM FOR USE ON MULTIMODE FIBER OPTIC CABLE

FROM

(TUE) JUN 19 2007 15:34/ST. 15:33/NO. 6310677351 P 2

2

In the Claims:

Claims 1 to 15 are of record in the case.

Explanation of Amendments in the Claims:

1.(original) A method for detecting movement of optical fibers of an optical fiber cable comprising:

providing a optical fiber cable having a first end and a second end, the cable having a plurality of fibers;

monitoring a plurality of fibers of the cable by detecting movement at locations along the length thereof by:

providing at least one source of light for injection onto the fibers;

providing at least one sensor arrangement for receiving light transmitted through the fibers;

injecting light from the at least one source into one end of the each of the fibers to be monitored;

in the at least one sensor arrangement, detecting a series of received light signals which have been transmitted along the fibers;

in the at least one sensor arrangement, comparing at least some of the received light signals relative to data obtained from previously received ones of the received light signals to detect changes in the received light signals relative to the previously received light signals;

in the at least one sensor arrangement, analyzing the changes to determine any changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

generating an alarm in response to the detection of any such changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

and using optical communication components to communicate light from the at least one source to more than one of the fibers and to communicate light from more than one of the fibers to the at least one sensor arrangement such that the number of fibers monitored is greater than the number of sources and greater than the number of sensor arrangements.

2.(original) The method according to claim 1 wherein there is provided at least one jumper connected between a first and a second fibers so as to loop the monitor light exiting from the first fiber into the second fiber so as to use in monitoring the first and second fibers a common single source.

3.(original) The method according to claim 1 wherein there is provided at a first end of the cable a plurality of jumpers each connected between an exit end of a first fiber and an entry end of a next fiber fibers so as to loop the monitor light exiting from the first fiber into the next fiber and wherein there is provided at a second end of the cable a second plurality of jumpers each connected between an exit end of a next fiber and an entry end of a subsequent fiber fibers so as to loop the monitor light exiting from the next fiber into the subsequent fiber such that the light from a common single source passes thorough each fiber sequentially.

4.(original) The method according to claim 3 wherein the source and the sensing arrangement are arranged at a first end of the cable and at the second end of

5

the cable is provided a passive unit forming the series of jumpers defining the communication components.

5.(original) The method according to claim 3 wherein there is provided a single source and a single sensing arrangement and wherein the monitored fibers are treated as one fiber therebetween.

6.(original) The method according to claim 1 wherein the sensing arrangement includes locating arrangement for detecting the location of a detected movement and wherein there is provided a stored table of fiber lengths which allows the sensing arrangement to determine which fiber was is moved.

7.(original) The method according to claim 1 wherein there is provided a plurality of wavelength division multiplexers (WDMs) such that each monitored fiber has connected thereto at an entry end and an exit end a respective pair of the WDMs for separating the light from the source from a data signal transmitted simultaneously with the monitoring light through the fiber.

8.(original) The method according to claim 7 wherein all transmission on monitored cable is the monitor wavelength of the light source multiplexed to the data wavelength.

9.(original) The method according to claim 7 wherein all loop-backs between WDMs is at the monitor wavelength.

10.(original) The method according to claim 1 wherein there is provided a plurality of cables arranged in a hub-and-spoke arrangement where a main unit in a

central location feeds remote units and wherein the fibers of more than one of the cable are monitored.

11.(original) The method according to claim 1 wherein there is provided a plurality of optical switches each arranged at a respective end of a respective fiber.

12.(original) The method according to claim 1 wherein the optical switches are arranged to break the circuit of a pair of fibers in the event that a movement is detected.

13.(original) The method according to claim 1 wherein the optical switches are arranged to redirect the monitor wavelength round a fiber pair, thereby bypassing a broken link.

14.(original) The method according to claim 1 wherein the optical switches are arranged to scan fibers to identify which one has been intruded, precluding the need for locating.

15.(currently amended) The method according to claim 1 wherein there is provided for the plurality of fibers a second plurality of independent monitoring signals each of which can be separated from the others wherein the number of signals is less than the number of fibers, each monitoring signal being associated with a respective sensing arrangement.

~~The method according to claim 15 wherein there are provided multiplexing devices arranged such that each of the fibers to be monitored has detected therefrom a unique combination of one or more of the independent monitoring signals.~~

Add new claim as follows:

16. The method according to claim 15 wherein there are provided multiplexing devices arranged such that each of the fibers to be monitored has detected therefrom a unique combination of one or more of the independent monitoring signals.

In the Drawings:

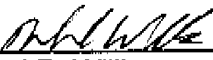
Figures 4 and 5 have been objected to as having line quality that is not adequate for reproduction. We therefore enclose replacement Figures 4 and 5 (2 sheets) together with a copy of the drawings (2 sheets) as originally filed for the Examiner's convenience.

REMARKS:

We believe that all requirements have been met in the Notice of Non-Compliant Amendment and it is requested that the attached amendments be entered.

Respectfully submitted

CARL L. MURPHY ET AL

PER: 
Michael R. Williams
Registration No: 45,333

ADB/II
June 19, 2007
Enc.(5)

Adrian D. Battison

Winnipeg, Manitoba, Canada
Telephone (204) 944-0032 - FAX (204) 942-5723

Cary R. Murphy et al
REPLACEMENT Sheet 3 of 6
Battison - 85570-1302 ADB

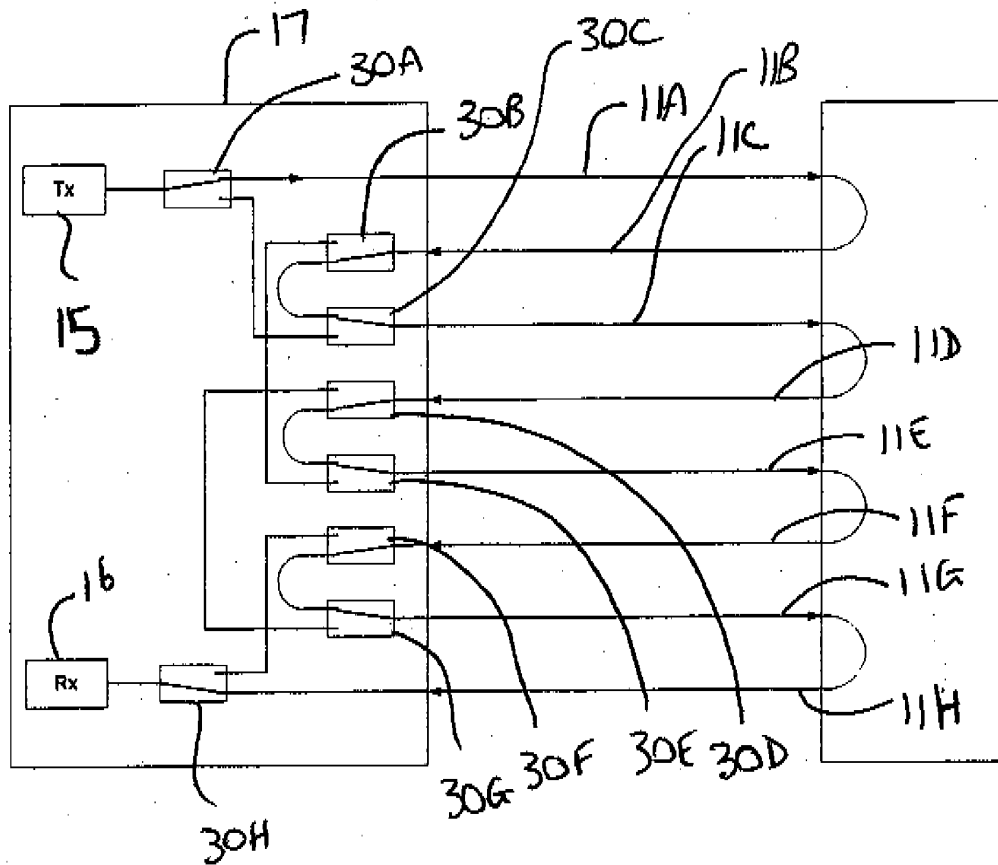


Fig 4

Cary R. Murphy et al
REPLACEMENT Sheet 4 of 6
Battison - 85570-1302 ADB

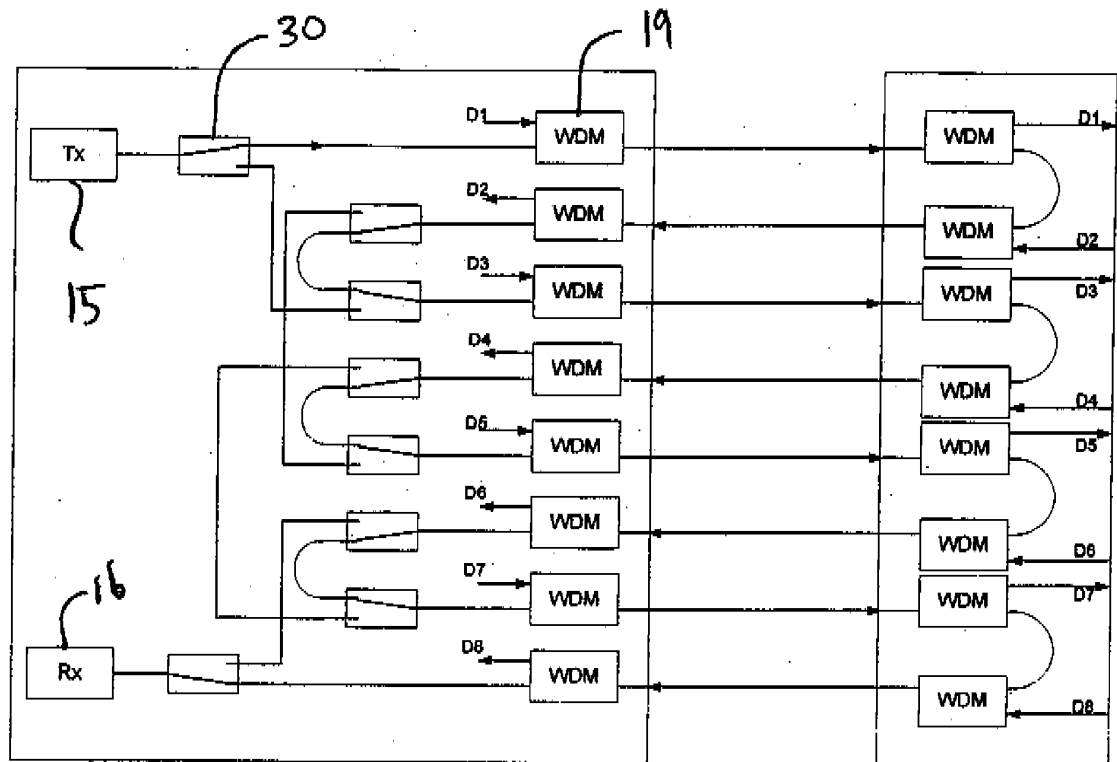


Fig 5

Cary R. Murphy et al
Originally filed Sheet 3 of 6
Battison - 85570-1302 ADB

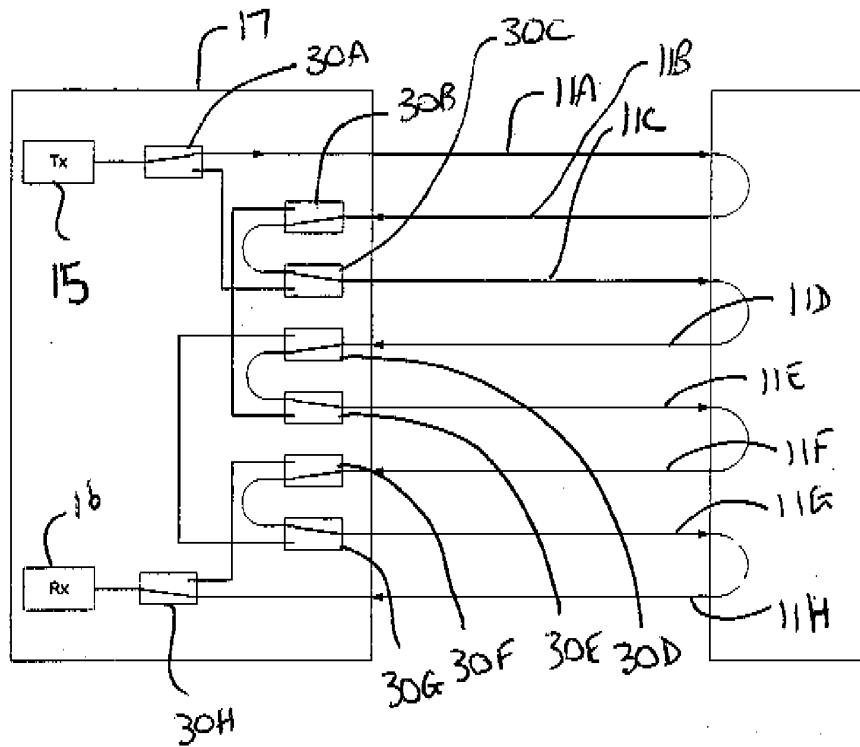
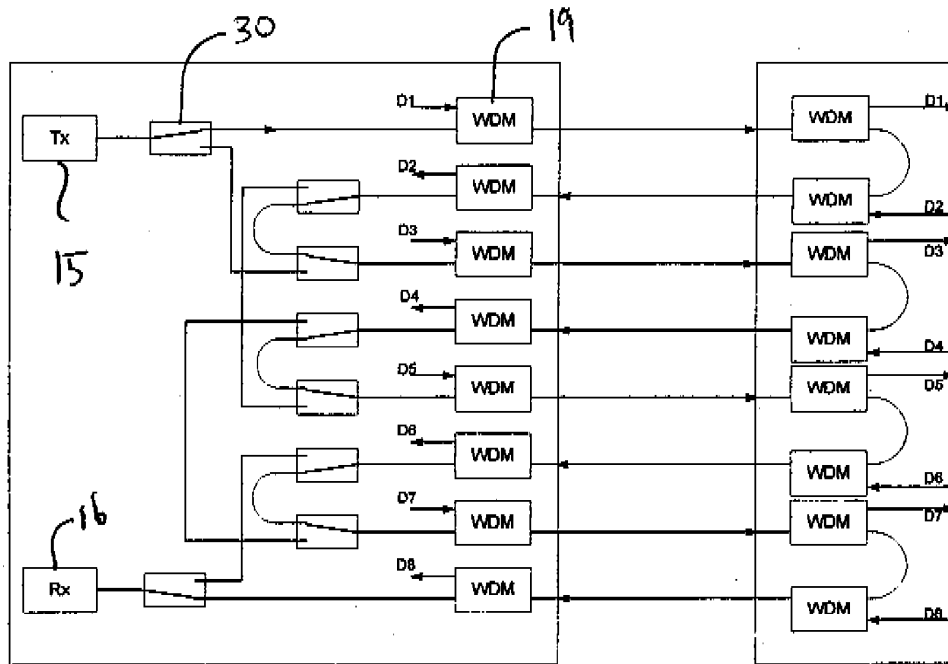


Fig. 4

Cary R. Murphy et al
Originally filed Sheet 4 of 6
Battison - 85570-1302 ADB



Figs

17/6

Electronic Acknowledgement Receipt

EFS ID:	1887849
Application Number:	11461917
International Application Number:	
Confirmation Number:	4439
Title of Invention:	MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION
First Named Inventor/Applicant Name:	Cary R. Murphy
Customer Number:	23529
Filer:	Adrian David Battison
Filer Authorized By:	
Attorney Docket Number:	85570-1302 ADB
Receipt Date:	19-JUN-2007
Filing Date:	02-AUG-2006
Time Stamp:	16:48:38
Application Type:	Utility

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)
1	Preliminary Amendment	preliminaryamendment.pdf	98302	no	9

Warnings:

Information:					
2	Drawings	replacementdrawings.pdf	30046	no	4
Warnings:					
Information:					
Total Files Size (in bytes):			128348		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

PATENT APPLICATION FEE DETERMINATION RECORD

Effective December 8, 2004

Application or Docket Number

11/461917

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
U.S. NATIONAL STAGE FEES		
BASIC FEE	SMALL ENT. = \$ 150	LARGE ENT. = \$ 300
EXAMINATION FEE	Satisfies PCT Article 33(1)-(4) = \$ 50 / \$ 100	All other situations = \$ 100 / \$ 200
SEARCH FEE	U.S. is ISA = \$ 50 / \$ 100 ALL other countries = \$ 200 / \$ 400	ALL other situations = \$ 250 / \$ 500
FEE FOR EXTRA SPEC. PGS.	minus 100 =	/ 50 =
TOTAL CHARGEABLE CLAIMS	15 minus 20 =	
INDEPENDENT CLAIMS	1 minus 3 =	
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐ OR

OTHER THAN SMALL ENTITY

RATE	FEE		RATE	FEE
BASIC FEE	Paid	OR	BASIC FEE	
EXAM. FEE			EXAM. FEE	
SEARCH FEE			SEARCH FEE	
X \$ 125 =			X \$ 250 =	
X \$ 25 =		OR	X \$ 50 =	
X \$ 100 =		OR	X \$ 200 =	
+ \$ 180 =		OR	+ \$ 360 =	
TOTAL		OR	TOTAL	

CLAIMS AS AMENDED - PART II

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	16 Minus	20	=
Independent	1 Minus	3	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

SMALL ENTITY OR

OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X \$ 25 =		OR	X \$ 50 =	
X \$ 100 =		OR	X \$ 200 =	
+ \$ 180 =		OR	+ \$ 360 =	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	16 Minus	20	= 0
Independent	1 Minus	3	= 0
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X \$ 25 =		OR	X \$ 50 =	
X \$ 100 =		OR	X \$ 200 =	
+ \$ 180 =		OR	+ \$ 360 =	
TOTAL ADDIT. FEE	0	OR	TOTAL ADDIT. FEE	0

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than "20", enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than "3", enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/461,917	08/02/2006	Cary R. Murphy	85570-1302 ADB	4439

23529 7590 02/05/2009
ADE & COMPANY INC.
2157 Henderson Highway
WINNIPEG, MB R2G1P9
CANADA

EXAMINER

CONNELLY CUSHWA, MICHELLE R

ART UNIT	PAPER NUMBER
----------	--------------

2874

MAIL DATE	DELIVERY MODE
-----------	---------------

02/05/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 11/461,917	Applicant(s) MURPHY ET AL.	
	Examiner MICHELLE R. CONNELLY CUSHWA	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on ____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-16 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5) ☐ Claim(s) ____ is/are allowed.

6) ☒ Claim(s) 1,2 and 12-14 is/are rejected.

7) ☒ Claim(s) 3-11,15 and 16 is/are objected to.

8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on 02 August 2006 and 26 December 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892) 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.	4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____. 5) ☐ Notice of Informal Patent Application 6) ☐ Other: _____.
--	--

DETAILED ACTION

Drawings

Sheets 1, 2, 5 and 6 of Drawings filed August 2, 2006 and Replacement Sheets 3 and 4 of Drawings filed December 26, 2006 have been accepted by the Examiner.

Specification

Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claims 3-6, 10 are objected to because of the following informalities:

Claim 3, line 3, "fiber fibers" should be changed to --fiber--;

Claim 3, line 6, "fiber fibers" should be changed to --fiber--;

Claim 6, line 2, --a—should be inserted before "locating";

Claim 6, line 4, "was is" should be changed to --has--;

Claim 10, line 3, "one of the cable" should be changed to --one of the cables--;

Claims 4 and 5 contain the deficiencies of the base claims from which they depend.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 12; the claim recites the limitation "the optical switches" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. The Examiner suggests changing "according to claim 1" in line 1 of claim 12 to --according to claim 11-
- to overcome this rejection.

Regarding claim 13; the claim recites the limitation "the optical switches" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. The Examiner suggests changing "according to claim 1" in line 1 of claim 13 to --according to claim 11-
- to overcome this rejection.

Regarding claim 14; the claim recites the limitation "the optical switches" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. The Examiner suggests changing "according to claim 1" in line 1 of claim 14 to --according to claim 11-
- to overcome this rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Beinhocker (US 7,211,783 B2).

Regarding claim 1; Beinhocker discloses a method for detecting movement of optical fibers (see column 3, line 44 through column 4, line 10; an alteration in the optical path including movement caused by nicks, cuts, pinches, compression, stretching, twisting or other damages can be detected) of an optical fiber cable (106; See Figure 1) comprising:

- providing an optical fiber cable (106 in Figure 2; the cable is formed of fibers 412 and 414 in Figure 4; the cable is formed by multiple fibers, including 538, 540 and 542 in Figure 5) having a first end and a second end, the cable having a plurality of fibers (412, 414 in Figure 4; 538, 540, 542 in Figure 5);
- monitoring a plurality of fibers of the cable by detecting movement at locations along the lengths thereof by;
- providing at least one source (200 in Figure 2) of light for injection onto the fibers;
- providing at least one sensor arrangement (202 in Figure 2) for receiving light transmitted through the fibers;
- injecting light from the at least one source into the end of the fibers to be monitored;
- in the at least one sensor arrangement, detecting a series of received light signal which have been transmitted along the fibers

- (an intermittent series of pulses may be optionally detected by the sensor arrangement or a continuous signal may be serially detected by the sensor for comparison with previous signals to determine if the fiber cable is being tampered with; see column 9, lines 38-49, and column 3, line 55, through column 4, line 10);
- in the at least one sensor arrangement, comparing at least some of the received light signals relative to data obtained from previously received ones of the received light signals to detect changes in the received light signals relative to the previously received light signals (the signals received are compared to threshold values established with calibration, etc.);
 - in the at least one sensor arrangement, analyzing the changes to determine any changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof (the detector must analyze the changes to determine if an alarm is needed; see column 6, lines 8-15);
 - generating an alarm in response to the detection of any such changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof (see column 3, lines 67, through column 4, line 1); and
 - using optical communication components to communicate light from the at least one source to more than one of the fibers and to

communicate light from more than one of the fibers to the at least one sensor arrangement such that the number of fibers monitored is greater than the number of sources and greater than the number of sensor arrangements (see Figures 4 and 5).

Regarding claim 2; there is provided at least one jumper (such as 544 and 546 in Figure 5) so as to loop the monitor light exiting from the first fiber into the second fiber so as to use in monitoring the first and second fibers a common single source.

Allowable Subject Matter

Claims 3-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose or render obvious:

- a method, as defined in claim 3, wherein there is provided at **a first end of the cable a plurality of jumpers** each connected between an exit end of a first fiber and an entry end of a next fiber so as to loop the monitor light exiting from the first fiber into the next fiber and there is provided **at a second end of the cable a second plurality of jumpers** each connected between an exit end of a next fiber and an entry end of a subsequent fiber so as to loop the monitor light exiting from the next fiber into the subsequent fiber such that the light from a common single source

- passes through each fiber sequentially in combination with the limitations of claim 1;
- a method, as defined in claim 6, wherein the sensing arrangement includes a locating arrangement for detecting the location of a detected movement and wherein ***there is provided a stored table of fiber lengths which allows the sensing arrangement to determine which fiber has moved*** in combination with the limitations of claim 1;
 - a method, as defined in claim 7, wherein there is provided a plurality of wavelength division multiplexers (WDMs) such that ***each monitored fiber has connected thereto at an entry end and an exit end a respective pair of WDMs*** for separating the light from the source from a data signal transmitted simultaneously with the monitoring light through the fiber in combination with the limitations of claim 1;
 - the method, as defined in claim 10, wherein ***there is provided a plurality of cables arranged in a hub-and-spoke arrangement where a main unit in a central location feeds remote units and wherein the fibers of more than one of the cables are monitored*** in combination with the limitations of claim 1;
 - the method, as defined in claim 11, wherein there is provided ***a plurality of optical switches each arranged at a respective***

end of a respective fiber in combination with the limitations of claim 1; or

- the method, as defined in claim 15, wherein there is provided for the plurality of fibers **a second plurality of independent monitoring signals each of which can be separated from the others wherein the number of signals is less than the number of fibers, each monitoring signal being associated with a respective sensing arrangement** in combination with the limitations of claim 1.

Claims 4 and 5 depend from claim 3; claims 8 and 9 depend from claim 7; and claim 16 depends from claim 15.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Griffiths (US 5,026,141); Swanic (US 5,134,386); Slemon et al. (US 5,680,104); Mitchell (US 5,809,185); Maki (US 6,967,584 B2); Rich et al. (US 2004/0071382 A1); and Rich et al. (US 2004/0114888 A1).

Any inquiry concerning the merits of this communication should be directed to Examiner Michelle R. Connelly-Cushwa at telephone number (571) 272-2345. The examiner can normally be reached 9:00 AM to 7:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen-Chau Le can be reached on (571) 272-2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number: 11/461,917
Art Unit: 2874

Page 9

Any inquiry of a general or clerical nature should be directed to the Technology
Center 2800 receptionist at telephone number (571) 272-1562.

/Michelle R. Connelly-Cushwa/
Primary Patent Examiner
Art Unit 2874

Notice of References Cited	Application/Control No. 11/461,917		Applicant(s)/Patent Under Reexamination MURPHY ET AL.	
	Examiner MICHELLE R. CONNELLY		Art Unit 2874	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,026,141	06-1991	Griffiths, Richard W.	385/13
*	B	US-5,134,386	07-1992	Swanic, Anthony	340/541
*	C	US-5,680,104	10-1997	Slemon et al.	340/568.2
*	D	US-5,809,185	09-1998	Mitchell, Ralph	385/12
*	E	US-6,967,584	11-2005	Maki, Melvin C.	340/657
*	F	US-7,211,783	05-2007	Beinhocker, Gilbert D.	250/227.14
*	G	US-2004/0071382	04-2004	Rich et al.	385/012
*	H	US-2004/0114888	06-2004	Rich et al.	385/101
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims 	Application/Control No. 11461917	Applicant(s)/Patent Under Reexamination MURPHY ET AL.
	Examiner MICHELLE R CONNELLY CUSHWA	Art Unit 2874

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	01/31/2009								
	1	✓								
	2	✓								
	3	O								
	4	O								
	5	O								
	6	O								
	7	O								
	8	O								
	9	O								
	10	O								
	11	O								
	12	✓								
	13	✓								
	14	✓								
	15	O								
	16	O								

Search Notes 	Application/Control No. 11461917	Applicant(s)/Patent Under Reexamination MURPHY ET AL.
	Examiner MICHELLE R CONNELLY CUSHWA	Art Unit 2874

SEARCHED			
Class	Subclass	Date	Examiner
385	13	1/30/09	MC

SEARCH NOTES		
Search Notes	Date	Examiner
USTPO EAST: text attached	1/30/09	MC

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

--	--

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	3683	385/12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/01/21 09:52
S2	206	S1 and alarm	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/21 09:52
S3	156	"349"/\$.ccls. and (((reflect\$3 near2 layer) with (pixel near2 electrode)) same (source and drain))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/21 11:12
S4	15	S3 and ((reflect\$3 near2 layer) with ("same" near2 material))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/21 11:14
S5	212	"349"/\$.ccls. and (((reflect\$3 near2 layer) or reflector) with (pixel near2 electrode)) same (source and drain))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/21 11:29
S6	18	S5 and (((reflect\$3 near2 layer) or reflector) with ("same" near2 material))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/21 11:29
S7	3	S6 not S4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/21 11:30
S8	1	("5026141").PN.	USPAT	OR	OFF	2009/01/28 08:55
S9	40	("4654520" "4701614" "4794619" "4812645").PN. OR ("5026141").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/28 13:23

S10	56	("4654520").URPN.	USPAT	OR	OFF	2009/01/28 13:26
S11	1	("20050002017").PN.	US-PGPUB; USPAT	OR	OFF	2009/01/28 13:29
S12	1	("5680104").PN.	US-PGPUB; USPAT	OR	OFF	2009/01/28 13:30
S13	15	("3488586" "3742947" "3794841" "3986498" "4589404" "4812641" "4870952" "4878045"). PN. OR ("5680104"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/28 13:31
S14	34	((detect\$3 or monitor\$3) near2 (tamper\$3 or intrud \$3 or intrus\$3 or move \$4)) with (optic\$3 near2 cable)) and ((plurality or multiple) near2 (fibers or fibres or optical-fibers or optical-fibres))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/28 13:33
S15	9	("5496700").PN. OR ("5809185").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/28 13:43
S20	19	("20020043969" "20040114888" "20050024210" "4144530" "4488040" "4777476" "5138153" "5144689" "5574815" "5808730" "5913003" "6052056" "6169834" "6195487" "6211964" "6236789" "6295394" "6317540" "6381397"). PN. OR ("6934426"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/29 15:55
S21	32	("4129356" "4294513" "4405198" "4421979" "4443700").PN. OR ("4488040").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/29 15:57
S22	25	("4297684" "4370020" "4482890" "4488040" "4493995" "4591709" "4670649" "4903339" "4965856").PN. OR ("5134386").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/29 15:58

S23	56	("3258762" "3394976" "3940608" "4078432" "4095872" "4106849"). PN. OR ("4297684"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/29 15:59
S24	21	(US-20040114888-\$ or US-20040071382-\$).did. or (US-6876786-\$ or US- 5809185-\$ or US- 5026141-\$ or US- 7388486-\$ or US- 4812645-\$ or US- 4654520-\$ or US- 5680104-\$ or US- 7402790-\$ or US- 6967584-\$ or US- 6934426-\$ or US- 5184009-\$ or US- 4859024-\$ or US- 4488040-\$ or US- 5134386-\$ or US- 4297684-\$ or US- 7482924-\$ or US- 5291013-\$ or US- 5212379-\$ or US- 4863270-\$).did.	US-PGPUB; USPAT	OR	OFF	2009/01/29 16:03
S25	13	S24 and (compar\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/01/29 16:03
S26	1	(method and (detect\$3 near2 movement) and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4 and analy \$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/29 17:39
S27	1	((detect\$3 near2 movement) and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens \$3 and light and (detect \$3 near2 series) and compar\$4 and analy\$4). clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/29 17:41

S28	1	(detect\$ and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens \$3 and light and (detect \$3 near2 series) and compar\$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/29 17:42
S29	1	(detect\$ and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens \$3 and light and (detect \$3 near2 series) and compar\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/29 17:42
S30	4	(detect\$ and (optic\$3 near2 fib\$3) and cable and sens\$3 and light and (detect\$3 near2 series) and compar\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/29 17:42
S31	1	(method and (detect\$3 near2 movement) and (optic\$3 near2 fib\$3) and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar \$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/29 17:42
S32	1	("7211783").PN.	USPAT	OR	OFF	2009/01/30 12:59
S33	1	("20040071382").PN.	US-PGPUB; USPAT	OR	OFF	2009/01/30 16:18
S34	0	S33 and jumper	US-PGPUB; USPAT	OR	ON	2009/01/30 16:18
S35	22	(US-20040114888-\$ or US-20040071382-\$).did. or (US-6876786-\$ or US-5809185-\$ or US-5026141-\$ or US-7388486-\$ or US-4812645-\$ or US-4654520-\$ or US-5680104-\$ or US-7402790-\$ or US-6967584-\$ or US-6934426-\$ or US-5184009-\$ or US-4859024-\$ or US-4488040-\$ or US-5134386-\$ or US-4297684-\$ or US-7482924-\$ or US-	US-PGPUB; USPAT	OR	OFF	2009/01/30 16:23

		5291013-\$ or US-5212379-\$ or US-4863270-\$ or US-7211783-\$).did.				
S36	1	S35 and (stor\$3 near2 table)	USPAT	OR	OFF	2009/01/30 16:23
S37	1	S35 and (stor\$3 near2 table)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/01/30 16:23
S38	14	S35 and (location)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/01/30 16:25
S39	1	("6819849").PN.	USPAT	OR	OFF	2009/01/30 16:36
S40	24	("3657544" "3981592" "4062618" "4070091" "4134642" "4144530" "4174149" "4207561" "4211468" "4211920" "4237550" "4246475" "4257033" "4294513" "4436368" "4770485").PN. OR ("6819849").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 16:36
S41	12	("20060002649" "20060002650" "20070086693" "20070092176" "20070116400" "20070133922" "4973169" "5003623" "5712937" "6819849" "7092586" "7120324").PN. OR ("7403674").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 16:40
S42	2194	(385/12).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/01/30 16:42
S43	659	(385/13).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/01/30 16:42

S44	3697	385/12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/01/30 16:42
S45	207	S44 and alarm	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/30 16:42
S46	156	"349"/\$.ccls. and (((reflect\$3 near2 layer) with (pixel near2 electrode)) same (source and drain))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/30 16:42
S47	15	S46 and ((reflect\$3 near2 layer) with ("same" near2 material))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/30 16:42
S48	212	"349"/\$.ccls. and (((reflect\$3 near2 layer) or reflector) with (pixel near2 electrode)) same (source and drain))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/30 16:42
S49	18	S48 and (((reflect\$3 near2 layer) or reflector) with ("same" near2 material))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/30 16:42
S50	3	S49 not S47	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/30 16:42
S51	1	("5026141").PN.	USPAT	OR	OFF	2009/01/30 16:42
S52	40	("4654520" "4701614" "4794619" "4812645").PN. OR ("5026141").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 16:42
S53	56	("4654520").URPN.	USPAT	OR	OFF	2009/01/30 16:42
S54	1	("20050002017").PN.	US-PGPUB; USPAT	OR	OFF	2009/01/30 16:42
S55	1	("5680104").PN.	US-PGPUB; USPAT	OR	OFF	2009/01/30 16:42

S56	15	("3488586" "3742947" "3794841" "3986498" "4589404" "4812641" "4870952" "4878045"). PN. OR ("5680104"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 16:42
S57	34	((detect\$3 or monitor\$3) near2 (tamper\$3 or intrud \$3 or intrus\$3 or move \$4)) with (optic\$3 near2 cable)) and ((plurality or multiple) near2 (fibers or fibres or optical-fibers or optical-fibres))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/30 16:42
S58	9	("5496700").PN. OR ("5809185").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 16:42
S59	19	("20020043969" "20040114888" "20050024210" "4144530" "4488040" "4777476" "5138153" "5144689" "5574815" "5808730" "5913003" "6052056" "6169834" "6195487" "6211964" "6236789" "6295394" "6317540" "6381397"). PN. OR ("6934426"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 16:42
S60	32	("4129356" "4294513" "4405198" "4421979" "4443700").PN. OR ("4488040").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 16:42
S61	25	("4297684" "4370020" "4482890" "4488040" "4493995" "4591709" "4670649" "4903339" "4965856").PN. OR ("5134386").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 16:42
S62	56	("3258762" "3394976" "3940608" "4078432" "4095872" "4106849"). PN. OR ("4297684"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 16:42

S63	21	(US-20040114888-\$ or US-20040071382-\$).did. or (US-6876786-\$ or US-5809185-\$ or US-5026141-\$ or US-7388486-\$ or US-4812645-\$ or US-4654520-\$ or US-5680104-\$ or US-7402790-\$ or US-6967584-\$ or US-6934426-\$ or US-5184009-\$ or US-4859024-\$ or US-4488040-\$ or US-5134386-\$ or US-4297684-\$ or US-7482924-\$ or US-5291013-\$ or US-5212379-\$ or US-4863270-\$).did.	US-PGPUB; USPAT	OR	OFF	2009/01/30 16:42
S64	13	S63 and (compar\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/01/30 16:42
S65	1	(method and (detect\$3 near2 movement) and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/30 16:42
S66	1	((detect\$3 near2 movement) and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/30 16:42
S67	1	(detect\$ and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/30 16:42

S68	1	(detect\$ and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens \$3 and light and (detect \$3 near2 series) and compar\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/30 16:42
S69	4	(detect\$ and (optic\$3 near2 fib\$3) and cable and sens\$3 and light and (detect\$3 near2 series) and compar\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/30 16:42
S70	1	(method and (detect\$3 near2 movement) and (optic\$3 near2 fib\$3) and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar \$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/01/30 16:42
S71	1	("7211783").PN.	USPAT	OR	OFF	2009/01/30 16:42
S72	16	("4173412" "4564289" "4584470" "4773753" "4920261" "5054922" "5297436" "5633959" "5641955" "5672008" "6201237" "6211962" "6513390" "6563589" "6647800" "6748128"). PN. OR ("7359586"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 17:03
S73	27	("20020154860" "20030035626" "4477725" "4727254" "4761073" "4806012" "4891511" "4976507" "5046848" "5272334" "5355208" "5627637" "5633748" "5636021" "5757487" "5760391" "5767956" "5808779" "5949533" "6075907" "6335524" "6489606" "6542228" "6563969" "6597822" "6816638"). PN. OR ("6876786"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 17:11

S74	6	("20030012500" "20030012523" "20030016909" "4991930" "6067392" "6101301").PN. OR ("6834143").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 17:12
S75	22	("4560016" "4581527" "4603252" "4733068" "4781056" "4830449" "4990769" "5056884" "5084615" "5134386" "5193129").PN. OR ("5293039").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 17:16
S76	42	("3305036" "3782486" "4294513" "4342907" "4421979" "4449210" "4451730" "4459477"). PN. OR ("4560016"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/30 17:17

1/31/09 8:43:21 AM

C:\Documents and Settings\mconnellycushwa\My Documents\EAST\Workspaces\11461917.wsp

EXAMINER: Michelle R CONNELLY CUSHWA
GROUP: 2874
CONFIRMATION NO. 4439
APPLICANT: Cary R. Murphy et al
SERIAL NO: 11/461,917
FILED: August 2, 2006
FOR: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE
FOR INTRUSION

U.S. Patent and Trademark Office
Customer Service Window Missing Parts
Randolph Building
401 Dulany Street
Alexandria, VA 22314
U.S.A.

Dear Sir:

In response to the Notice of Action dated February 5, 2009.

In the Claims:

Claims 1 to 15 are of record in the case.

Claims 1, 2 and 12 to 14 are rejected.

Claims 3 to 11, 15 and 16 are objected to.

Explanation of Amendments in the Claims:

1.(currently amended) A method for detecting movement of optical fibers of an optical fiber cable comprising:

providing a optical fiber cable having a first end and a second end, the cable having a plurality of fibers each of which extends from the first end to the second end;

monitoring a plurality of fibers of the cable by detecting movement of the fiber at locations along the length of the fiber thereof by:

providing at least one source of light for injection onto the fibers;

providing at least one sensor arrangement for receiving light transmitted through the fibers;

injecting light from the at least one source into one end of ~~the~~ each of the fibers to be monitored;

in the at least one sensor arrangement, detecting a series of received light signals which have been transmitted along the fibers to be monitored;

in the at least one sensor arrangement, comparing at least some of the received light signals relative to data obtained from previously received ones of the received light signals to detect changes in the received light signals relative to the previously received light signals;

in the at least one sensor arrangement, analyzing the changes to determine any changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

generating an alarm in response to the detection of any such changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

and using optical communication components to communicate light from the at least one source to more than one of the fibers of the optical fiber cable and to communicate light from more than one of the fibers of the optical fiber cable to the at least one sensor arrangement such that the number of fibers of the optical fiber cable monitored is greater than the number of sources and greater than the number of sensor arrangements.

2.(currently amended) The method according to claim 1 wherein the light is injected from the at least one source into said one end of a first of the fibers to be monitored at the first end of the cable and wherein there is provided at least one jumper at the second end of the cable connected between the a first fiber of the optical fiber cable and a second fiber of the optical fiber cable ~~fibers~~ so as to loop the monitor light exiting from the first fiber into the second fiber so as to use in monitoring the first and second fibers said at least one source as a common single source.

3.(currently amended) The method according to claim 1 wherein there is provided at the a first end of the cable a plurality of jumpers each connected between an exit end of a first fiber and an entry end of a next fiber ~~fibers~~ so as to loop the monitor light exiting from the first fiber into the next fiber and wherein there is provided at the a second end of the cable a second plurality of jumpers each connected between an exit end of a next fiber and an entry end of a subsequent fiber ~~fibers~~ so as to loop the

monitor light exiting from the next fiber into the subsequent fiber such that the light from a common single source passes thorough each fiber sequentially.

4.(currently amended) The method according to claim 3 wherein the source and the sensing arrangement are arranged at a first end of the cable and at the second end of the cable is provided a passive unit forming the series of jumpers defining the communication components.

5.(currently amended) The method according to claim 3 wherein there is provided a single source and a single sensing arrangement and wherein the monitored fibers are treated as one fiber therebetween.

6.(currently amended) ~~The method according to claim 1~~ A method for detecting movement of optical fibers comprising:

providing at least one source of light for injection onto the fibers;

providing at least one sensor arrangement for receiving light transmitted through the fibers;

injecting light from the at least one source into one end of each of the fibers to be monitored;

in the at least one sensor arrangement, detecting a series of received light signals which have been transmitted along the fibers;

in the at least one sensor arrangement, comparing at least some of the received light signals relative to data obtained from previously received ones of the received light signals to detect changes in the received light signals relative to the previously received light signals;

in the at least one sensor arrangement, analyzing the changes to determine any changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

generating an alarm in response to the detection of any such changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

and using optical communication components to communicate light from the at least one source to more than one of the fibers and to communicate light from more than one of the fibers to the at least one sensor arrangement such that the number of fibers monitored is greater than the number of sources and greater than the number of sensor arrangements;

wherein the at least one sensing arrangement includes a locating arrangement for detecting the location of a detected movement and wherein there is provided a stored table of fiber lengths of the plurality of fibers which allows the at least one sensing arrangement to determine which fiber of the plurality of fibers ~~has~~ was-is moved.

7.(currently amended) ~~The method according to claim 4~~ A method for detecting movement of optical fibers comprising:

providing at least one source of light for injection onto the fibers;

providing at least one sensor arrangement for receiving light transmitted through the fibers;

injecting light from the at least one source into one end of each of the fibers to be monitored;

in the at least one sensor arrangement, detecting a series of received light signals which have been transmitted along the fibers;

in the at least one sensor arrangement, comparing at least some of the received light signals relative to data obtained from previously received ones of the received light signals to detect changes in the received light signals relative to the previously received light signals;

in the at least one sensor arrangement, analyzing the changes to determine any changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

generating an alarm in response to the detection of any such changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

and using optical communication components to communicate light from the at least one source to more than one of the fibers and to communicate light from more than one of the fibers to the at least one sensor arrangement such that the number of fibers monitored is greater than the number of sources and greater than the number of sensor arrangements;

wherein there is provided a plurality of wavelength division multiplexers (WDMs) such that each monitored fiber has connected thereto at an entry end and an exit end a respective pair of the WDMs for separating the light from the source from a data signal transmitted simultaneously with the monitoring light through the fiber.

8.(original) The method according to claim 7 wherein all transmission on monitored cable is the monitor wavelength of the light source multiplexed to the data wavelength.

9.(original) The method according to claim 7 wherein all loop-backs between WDMs is at the monitor wavelength.

10.(currently amended) ~~The method according to claim 4~~ A method for detecting movement of optical fibers of an optical fiber cable comprising:

~~wherein there is provided~~ providing a plurality of optical fiber cables arranged in a hub-and-spoke arrangement where each optical fiber cable extends from a main unit at a central location to one of a plurality of remote units;

each optical fiber cable having a first end and a second end, the cable having a plurality of fibers;

monitoring a plurality of fibers of the optical fiber cables by detecting movement of the fibers at locations along the length of the fibers by:

providing at least one source of light at the main unit for injection onto the fibers;

providing at least one sensor arrangement for receiving light transmitted through the fibers;

injecting light from the at least one source at the main unit into one end of the each of the fibers to be monitored;

in the at least one sensor arrangement, detecting a series of received light signals which have been transmitted along the fibers to be monitored;

in the at least one sensor arrangement, comparing at least some of the received light signals relative to data obtained from previously received ones of the received light signals to detect changes in the received light signals relative to the previously received light signals;

in the at least one sensor arrangement, analyzing the changes to determine any changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

generating an alarm in response to the detection of any such changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

and using optical communication components to communicate light from the at least one source at the main unit to more than one of the fibers and to communicate light from more than one of the fibers to the at least one sensor arrangement such that the number of fibers monitored is greater than the number of sources and greater than the number of sensor arrangements

where a main unit in a central location feeds remote units and wherein at least one of the fibers of more than one of the cables is are monitored by the light injected into the fibers from said at least one source of light at the main unit.

11.(currently amended) ~~The method according to claim 1—~~ A
method for detecting movement of optical fibers comprising:

providing at least one source of light for injection onto the fibers;

providing at least one sensor arrangement for receiving light transmitted through the fibers;

injecting light from the at least one source into one end of each of the fibers to be monitored;

in the at least one sensor arrangement, detecting a series of received light signals which have been transmitted along the fibers;

in the at least one sensor arrangement, comparing at least some of the received light signals relative to data obtained from previously received ones of the received light signals to detect changes in the received light signals relative to the previously received light signals;

in the at least one sensor arrangement, analyzing the changes to determine any changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

generating an alarm in response to the detection of any such changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof;

and using optical communication components to communicate light from the at least one source to more than one of the fibers and to communicate light from more than one of the fibers to the at least one sensor arrangement such that the number of fibers monitored is greater than the number of sources and greater than the number of sensor arrangements;

wherein there is provided a plurality of optical switches each arranged at a respective end of a respective fiber to be monitored.

12.(currently amended) The method according to claim 11 4 wherein the optical switches are arranged to break the circuit of a pair of fibers in the event that a movement is detected.

13.(currently amended) The method according to claim 11 4 wherein the optical switches are arranged to redirect the monitor wavelength round a fiber pair, thereby bypassing a broken link.

14.(currently amended) The method according to claim 11 4 wherein the optical switches are arranged to scan fibers to identify which one has been intruded, precluding the need for locating.

15.(original) The method according to claim 1 wherein there is provided for the plurality of fibers a second plurality of independent monitoring signals each of which can be separated from the others wherein the number of signals is less than the number of fibers, each monitoring signal being associated with a respective sensing arrangement.

16. (previously amended) The method according to claim 15 wherein there are provided multiplexing devices arranged such that each of the fibers to be monitored has detected therefrom a unique combination of one or more of the independent monitoring signals.

REMARKS:

Additional independent claims 6, 7, 10 and 11 have been added so that there is now a total of 5 independent claims thus requiring an additional claims fee of \$220. You are hereby authorized to charge the deposit account 01-0310 in the amount of \$220.

The claims have been revised to enter amendments correcting the points raised by the Examiner concerning objections and rejections under 35 USC 112. IN addition minor corrections have been made so to clarify a number of minor informalities noted during the preparation of this response and to ensure consistency of language throughout.

The Examiner has kindly indicated that claims 3 to 11 are allowable if written in independent form. Therefore claims 6, 7, 10 and 11 have been amended so that they are independent and include the limitations of the original claim.

In claim 10 the amendments made required some reorganization of the claim to present the features in a suitable order.

In claims 6, 7 and 11 the Examiner will note that some features of original claim 1 which are not essential to the combination now presented in the independent claim have been omitted.

It is submitted therefore that claims 6, 7, 10 and 11 together with the claims dependent thereon are all in good order for allowance.

Turning now to claim 1, this has been amended to make clear the following features of distinction from the prior art of Beinhocker:

a) *providing a optical fiber cable having a first end and a second end, the cable having a plurality of fibers each of which extends from the first end to the second end; Beinhooker discloses an arrangement in which the fibers are arranged end to end sequentially and there is no cable with the fibers extending from one end to the other end of the cable.*

b) *using optical communication components to communicate light from the at least one source to more than one of the fibers of the optical fiber cable and to communicate light from more than one of the fibers of the optical fiber cable to the at least one sensor arrangement such that the number of fibers of the optical fiber cable monitored is greater than the number of sources and greater than the number of sensor arrangements. Beinhooker discloses an arrangement in which the fibers are arranged end to end sequentially and there is no cable with the fibers extending from one end to the other end of the cable. There is no cable and no fibers of that cable which are monitored. The fibers are not part of a cable but are individual monitoring fibers connected sequentially end to end.*

c) *generating an alarm in response to the detection of any such changes which are indicative of manipulation of the optical fiber causing movement of a portion thereof along the length thereof. Beinhooker does not detect movement of the fiber but only breakage or changes caused by radiation.*

In Beinhooker the fibers are looped across a surface of a box in such a manner that opening the box will damage or otherwise impact that fiber loop. In addition it states that the escape of radiation can be detected because it will affect the

light transmission of the light through the fibers. The Examiner has referred particularly to Figure 4 of Beinhocker where two fibers 412 and 414 are connected sequentially by a coupler 406, 408. A similar more complex arrangement is shown in Figure 5. Thus the light passes sequentially through the fibers. In addition Beinhocker does not disclose detecting motion of the fibers but instead is looking for a breach of the fiber caused by cutting through the wall of the container.

However these fibers are NOT of the type with which the present invention is concerned in that the present invention is concerned with optical fiber cables where the fibers to be monitored extend from one end of the cable to the other end

This is not at all what the present invention does. The present invention detects the handling of a communication fiber of a cable as a method to avoid data theft. This invention allows multiple legs to be monitored by fewer sources and detectors.

There is no mention in Beinhocker of the sensing of the motion of the fiber or other advanced or sophisticated detection techniques. Beinhocker is looking for a damaged fiber within the loops, the present invention is looking for a fiber in motion between the loops.

It is submitted therefore that claim 1 is now properly distinguished from Beinhocker under 35 USC 102.

Claim 2 has been amended to make clear yet further features of distinction that :

d) *the light is injected from the at least one source into said one end of a first of the fibers to be monitored at the first end of the cable and there is provided at*

least one jumper at the second end of the cable connected between the first fiber of the optical fiber cable and a second fiber of the optical fiber cable. Beinhocker simply does not disclose an arrangement where the light is looped back into a second fiber of the cable by a jumper at the remote end of the cable. Beinhocker merely connects fibers sequentially.

It is submitted therefore that claim 2 is now properly distinguished from Beinhocker under 35 USC 102.

Respectfully submitted

CARY R. MURPHY ET AL

PER:

Adrian D. Battison

Registration No: 31726

ADB/dj
August 5th 2009

Adrian D. Battison Winnipeg, Manitoba, Canada
Telephone (204) 944-0032 - FAX (204) 942-5723

Electronic Patent Application Fee Transmittal				
Application Number:		11461917		
Filing Date:		02-Aug-2006		
Title of Invention:		MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION		
First Named Inventor/Applicant Name:		Cary R. Murphy		
Filer:		Adrian David Battison		
Attorney Docket Number:		85570-1302 ADB		
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Independent claims in excess of 3	2201	2	110	220
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 3 months with \$0 paid	2253	1	555	555
Miscellaneous:				
Total in USD (\$)				775

Electronic Acknowledgement Receipt

EFS ID:	5835189
Application Number:	11461917
International Application Number:	
Confirmation Number:	4439
Title of Invention:	MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION
First Named Inventor/Applicant Name:	Cary R. Murphy
Customer Number:	23529
Filer:	Adrian David Battison
Filer Authorized By:	
Attorney Docket Number:	85570-1302 ADB
Receipt Date:	05-AUG-2009
Filing Date:	02-AUG-2006
Time Stamp:	16:37:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$775
RAM confirmation Number	3122
Deposit Account	010310
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
-----------------	----------------------	-----------	----------------------------------	------------------	------------------

1	Amendment/Req. Reconsideration-After Non-Final Reject	amendment_Feb_09.pdf	352425 7f79e041bc96e282beec4a1e4a94948c7c3da237	no	15
Warnings:					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	32251 ca3aec59d501e934bef36619be5baab2c9196586	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			384676		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 11/461,917		Filing Date 08/02/2006		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)		SMALL ENTITY ☒ OR		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =			X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL				
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY OR		OTHER THAN SMALL ENTITY	
AMENDMENT	08/05/2009	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 16	Minus	** 20	= 0	X \$26 =	0	OR	X \$ =	
	Independent (37 CFR 1.16(h))	* 5	Minus	*** 3	= 2	X \$110 =	220	OR	X \$ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE	220	OR	TOTAL ADD'L FEE	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =		OR	X \$ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =		OR	X \$ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

Legal Instrument Examiner:
/JASON B. EADDY/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

23529 7590 11/16/2009

ADE & COMPANY INC.
2157 Henderson Highway
WINNIPEG, MB R2G1P9
CANADA

EXAMINER

CONNELLY CUSHWA, MICHELLE R

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 11/16/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/461,917	08/02/2006	Cary R. Murphy	85570-1302 ADB	4439

TITLE OF INVENTION: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	02/16/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

23529 7590 11/16/2009

ADE & COMPANY INC.
2157 Henderson Highway
WINNIPEG, MB R2G1P9
CANADA

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/461,917	08/02/2006	Cary R. Murphy	85570-1302 ADB	4439

TITLE OF INVENTION: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	02/16/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
CONNELLY CUSHWA, MICHELLE R	2874	385-013000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/461,917	08/02/2006	Cary R. Murphy	85570-1302 ADB	4439
23529	7590	11/16/2009	EXAMINER	
ADE & COMPANY INC. 2157 Henderson Highway WINNIPEG, MB R2G1P9 CANADA			CONNELLY CUSHWA, MICHELLE R	
			ART UNIT	PAPER NUMBER
			2874	
DATE MAILED: 11/16/2009				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 359 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 359 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	11/461,917	MURPHY ET AL.	
	Examiner	Art Unit	
	MICHELLE R. CONNELLY CUSHWA	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's Amendment filed August 5, 2009.

2. ☒ The allowed claim(s) is/are 1-16.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)	5. ☐ Notice of Informal Patent Application
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____	7. ☐ Examiner's Amendment/Comment
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material	8. ☒ Examiner's Statement of Reasons for Allowance
	9. ☐ Other _____.

/Michelle R. Connelly-Cushwa/ Primary Examiner, Art Unit 2874	
--	--

DETAILED ACTION

Response to Amendment

Applicant's Amendment filed August 5, 2009 has been fully considered and entered.

Response to Arguments

Applicant's arguments, see pages 12-15, filed August 5, 2009, with respect to claims 1-16 have been fully considered and are persuasive. Accordingly, the rejections set forth in the previous Office action have been withdrawn.

Allowable Subject Matter

Claims 1-16 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claims 1-5, 16 and 16; the prior art of record does not disclose or reasonably suggest a method, as defined in claim 1, comprising providing an optical fiber cable having a first end and a second end, the cable having a plurality of fibers each of which extends from the first end to the second end in combination with the other limitations of claim 1. Claims 2-5, 15 and 16 depend from claim 1.

Regarding claims 6-14; claims 6, 7, 10 and 11 remain allowable for the reasons discussed in the previous Office action mailed February 5, 2009. Claims 8 and 9 depend from claim 7, and claims 12-14 depend from claim 11.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning the merits of this communication should be directed to Examiner Michelle R. Connelly-Cushwa at telephone number (571) 272-2345. The examiner can normally be reached 9:00 AM to 7:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen-Chau Le can be reached on (571) 272-2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general or clerical nature should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562.

/Michelle R. Connelly-Cushwa/
Primary Patent Examiner
Art Unit 2874

Search Notes 	Application/Control No. 11461917	Applicant(s)/Patent Under Reexamination MURPHY ET AL.
	Examiner MICHELLE R CONNELLY CUSHWA	Art Unit 2874

SEARCHED			
Class	Subclass	Date	Examiner
385	13	1/30/09	MC

SEARCH NOTES		
Search Notes	Date	Examiner
USPTO EAST: text attached	1/30/09	MC
USPTO EAST: text attached	11/9/09	MC

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
USPTO EAST	text attached	11/9/09	MC

--	--

Issue Classification 	Application/Control No. 11461917	Applicant(s)/Patent Under Reexamination MURPHY ET AL.
	Examiner MICHELLE R CONNELLY CUSHWA	Art Unit 2874

ORIGINAL						INTERNATIONAL CLASSIFICATION												
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED							
385		13				G	0	2	B	6 / 00 (2006.01.01)								
CROSS REFERENCE(S)																		
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																	
385	12																	

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1														
2	2														
3	3														
4	4														
5	5														
8	6														
9	7														
10	8														
11	9														
12	10														
13	11														
14	12														
15	13														
16	14														
6	15														
7	16														

NONE		Total Claims Allowed:	
		16	
(Assistant Examiner)	(Date)		
/MICHELLE R CONNELLY CUSHWA/ Primary Examiner.Art Unit 2874	11/09/2009	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

<i>Index of Claims</i> 	Application/Control No. 11461917	Applicant(s)/Patent Under Reexamination MURPHY ET AL.
	Examiner MICHELLE R CONNELLY CUSHWA	Art Unit 2874

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant				☐ CPA		☐ T.D.		☐ R.1.47	
CLAIM		DATE							
Final	Original	01/31/2009	11/09/2009						
1	1	✓	=						
2	2	✓	=						
3	3	O	=						
4	4	O	=						
5	5	O	=						
8	6	O	=						
9	7	O	=						
10	8	O	=						
11	9	O	=						
12	10	O	=						
13	11	O	=						
14	12	✓	=						
15	13	✓	=						
16	14	✓	=						
6	15	O	=						
7	16	O	=						



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 4439

SERIAL NUMBER 11/461,917	FILING or 371(c) DATE 08/02/2006 RULE	CLASS 385	GROUP ART UNIT 2874	ATTORNEY DOCKET NO. 85570-1302 ADB		
APPLICANTS Cary R. Murphy, Hickory, NC; Mark K. Bridges, Hickory, NC; Joseph Giovanni, Hickory, NC; David E. Vokey, Sidney, CANADA; Daniel M. Goertzen, Winnipeg, CANADA; ** CONTINUING DATA ***** This appln claims benefit of 60/704,926 08/03/2005 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED *** SMALL ENTITY ** 08/15/2006						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and /MICHELLE R CONNELLY CUSHWA/ Acknowledged Examiner's Signature _____	☐ Met after Allowance Initials _____	STATE OR COUNTRY NC	SHEETS DRAWINGS 6	TOTAL CLAIMS 16	INDEPENDENT CLAIMS 1	
ADDRESS ADE & COMPANY INC. 2157 Henderson Highway WINNIPEG, MB R2G1P9 CANADA						
TITLE MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION						
FILING FEE RECEIVED 710	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		☐ All Fees			
			☐ 1.16 Fees (Filing)			
			☐ 1.17 Fees (Processing Ext. of time)			
			☐ 1.18 Fees (Issue)			
			☐ Other _____			
				☐ Credit		

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3999	385/12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/11/09 10:55
L2	229	L1 and alarm	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L3	173	"349"/\$.ccls. and (((reflect\$3 near2 layer) with (pixel near2 electrode)) same (source and drain))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L4	22	L3 and (((reflect\$3 near2 layer) with ("same" near2 material)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L5	239	"349"/\$.ccls. and (((reflect\$3 near2 layer) or reflector) with (pixel near2 electrode)) same (source and drain))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L6	28	L5 and (((reflect\$3 near2 layer) or reflector) with ("same" near2 material)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L7	6	L6 not L4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L8	1	("5026141").PN.	USPAT	OR	OFF	2009/11/09 10:55

L9	40	("4654520" "4701614" "4794619" "4812645").PN. OR ("5026141").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L10	57	("4654520").URPN.	USPAT	OR	OFF	2009/11/09 10:55
L11	1	("20050002017").PN.	US-PGPUB; USPAT	OR	OFF	2009/11/09 10:55
L12	1	("5680104").PN.	US-PGPUB; USPAT	OR	OFF	2009/11/09 10:55
L13	17	("3488586" "3742947" "3794841" "3986498" "4589404" "4812641" "4870952" "4878045").PN. OR ("5680104").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L14	36	((detect\$3 or monitor\$3) near2 (tamper\$3 or intrud\$3 or intrus\$3 or move\$4)) with (optic\$3 near2 cable)) and ((plurality or multiple) near2 (fibers or fibres or optical-fibers or optical-fibres))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L15	9	("5496700").PN. OR ("5809185").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L16	19	("20020043969" "20040114888" "20050024210" "4144530" "4488040" "4777476" "5138153" "5144689" "5574815" "5808730" "5913003" "6052056" "6169834" "6195487" "6211964" "6236789" "6295394" "6317540" "6381397").PN. OR ("6934426").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L17	32	("4129356" "4294513" "4405198" "4421979" "4443700").PN. OR ("4488040").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55

L18	26	("4297684" "4370020" "4482890" "4488040" "4493995" "4591709" "4670649" "4903339" "4965856").PN. OR ("5134386").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L19	58	("3258762" "3394976" "3940608" "4078432" "4095872" "4106849").PN. OR ("4297684").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L20	21	(US-20040114888-\$ or US-20040071382-\$).did. or (US-6876786-\$ or US-5809185-\$ or US-5026141-\$ or US-7388486-\$ or US-4812645-\$ or US-4654520-\$ or US-5680104-\$ or US-7402790-\$ or US-6967584-\$ or US-6934426-\$ or US-5184009-\$ or US-4859024-\$ or US-4488040-\$ or US-5134386-\$ or US-4297684-\$ or US-7482924-\$ or US-5291013-\$ or US-5212379-\$ or US-4863270-\$).did.	US-PGPUB; USPAT	OR	OFF	2009/11/09 10:55
L21	13	L20 and (compar\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/11/09 10:55
L22	1	(method and (detect\$3 near2 movement) and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L23	1	((detect\$3 near2 movement) and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55

L24	1	(detect\$ and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L25	1	(detect\$ and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L26	4	(detect\$ and (optic\$3 near2 fib\$3) and cable and sens\$3 and light and (detect\$3 near2 series) and compar\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L27	1	(method and (detect\$3 near2 movement) and (optic\$3 near2 fib\$3) and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L28	1	("7211783").PN.	USPAT	OR	OFF	2009/11/09 10:55
L29	1	("20040071382").PN.	US-PGPUB; USPAT	OR	OFF	2009/11/09 10:55
L30	0	L29 and jumper	US-PGPUB; USPAT	OR	ON	2009/11/09 10:55
L31	22	(US-20040114888-\$ or US-20040071382-\$).did. or (US-6876786-\$ or US-5809185-\$ or US-5026141-\$ or US-7388486-\$ or US-4812645-\$ or US-4654520-\$ or US-5680104-\$ or US-7402790-\$ or US-6967584-\$ or US-6934426-\$ or US-5184009-\$ or US-4859024-\$ or US-4488040-\$ or US-5134386-\$ or US-4297684-\$ or US-7482924-\$ or US-5291013-\$ or US-5212379-\$ or US-4863270-\$ or US-7211783-\$).did.	US-PGPUB; USPAT	OR	OFF	2009/11/09 10:55
L32	1	L31 and (stor\$3 near2 table)	USPAT	OR	OFF	2009/11/09 10:55

L33	1	L31 and (stor\$3 near2 table)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/11/09 10:55
L34	14	L31 and (location)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/11/09 10:55
L35	1	("6819849").PN.	USPAT	OR	OFF	2009/11/09 10:55
L36	24	("3657544" "3981592" "4062618" "4070091" "4134642" "4144530" "4174149" "4207561" "4211468" "4211920" "4237550" "4246475" "4257033" "4294513" "4436368" "4770485"). PN. OR ("6819849"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L37	12	("20060002649" "20060002650" "20070086693" "20070092176" "20070116400" "20070133922" "4973169" "5003623" "5712937" "6819849" "7092586" "7120324"). PN. OR ("7403674"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L38	2350	(385/12).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/11/09 10:55
L39	723	(385/13).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/11/09 10:55
L40	3999	385/12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/11/09 10:55

L41	229	L40 and alarm	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L42	173	"349"/\$.ccls. and (((reflect \$3 near2 layer) with (pixel near2 electrode)) same (source and drain))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L43	22	L42 and ((reflect\$3 near2 layer) with ("same" near2 material))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L44	239	"349"/\$.ccls. and (((reflect \$3 near2 layer) or reflector) with (pixel near2 electrode)) same (source and drain))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L45	28	L44 and (((reflect\$3 near2 layer) or reflector) with ("same" near2 material))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L46	6	L45 not L43	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L47	1	("5026141").PN.	USPAT	OR	OFF	2009/11/09 10:55
L48	40	("4654520" "4701614" "4794619" "4812645"). PN. OR ("5026141"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L49	57	("4654520").URPN.	USPAT	OR	OFF	2009/11/09 10:55
L50	1	("20050002017").PN.	US-PGPUB; USPAT	OR	OFF	2009/11/09 10:55
L51	1	("5680104").PN.	US-PGPUB; USPAT	OR	OFF	2009/11/09 10:55
L52	17	("3488586" "3742947" "3794841" "3986498" "4589404" "4812641" "4870952" "4878045"). PN. OR ("5680104"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55

L53	36	((detect\$3 or monitor\$3) near2 (tamper\$3 or intrud \$3 or intrus\$3 or move\$4)) with (optic\$3 near2 cable)) and ((plurality or multiple) near2 (fibers or fibres or optical-fibers or optical-fibres))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L54	9	("5496700").PN. OR ("5809185").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L55	19	("20020043969" "20040114888" "20050024210" "4144530" "4488040" "4777476" "5138153" "5144689" "5574815" "5808730" "5913003" "6052056" "6169834" "6195487" "6211964" "6236789" "6295394" "6317540" "6381397").PN. OR ("6934426").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L56	32	("4129356" "4294513" "4405198" "4421979" "4443700").PN. OR ("4488040").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L57	26	("4297684" "4370020" "4482890" "4488040" "4493995" "4591709" "4670649" "4903339" "4965856").PN. OR ("5134386").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L58	58	("3258762" "3394976" "3940608" "4078432" "4095872" "4106849").PN. OR ("4297684").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55

L59	21	(US-20040114888-\$ or US-20040071382-\$).did. or (US-6876786-\$ or US-5809185-\$ or US-5026141-\$ or US-7388486-\$ or US-4812645-\$ or US-4654520-\$ or US-5680104-\$ or US-7402790-\$ or US-6967584-\$ or US-6934426-\$ or US-5184009-\$ or US-4859024-\$ or US-4488040-\$ or US-5134386-\$ or US-4297684-\$ or US-7482924-\$ or US-5291013-\$ or US-5212379-\$ or US-4863270-\$).did.	US-PGPUB; USPAT	OR	OFF	2009/11/09 10:55
L60	13	L59 and (compar\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/11/09 10:55
L61	1	(method and (detect\$3 near2 movement) and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L62	1	((detect\$3 near2 movement) and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L63	1	(detect\$ and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L64	1	(detect\$ and (optic\$3 near2 fib\$3) and cable and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55

L65	4	(detect\$ and (optic\$3 near2 fib\$3) and cable and sens\$3 and light and (detect\$3 near2 series) and compar\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L66	1	(method and (detect\$3 near2 movement) and (optic\$3 near2 fib\$3) and monitor\$3 and sens\$3 and light and (detect\$3 near2 series) and compar\$4 and analy\$4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 10:55
L67	1	("7211783").PN.	USPAT	OR	OFF	2009/11/09 10:55
L68	16	("4173412" "4564289" "4584470" "4773753" "4920261" "5054922" "5297436" "5633959" "5641955" "5672008" "6201237" "6211962" "6513390" "6563589" "6647800" "6748128").PN. OR ("7359586").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L69	28	("20020154860" "20030035626" "4477725" "4727254" "4761073" "4806012" "4891511" "4976507" "5046848" "5272334" "5355208" "5627637" "5633748" "5636021" "5757487" "5760391" "5767956" "5808779" "5949533" "6075907" "6335524" "6489606" "6542228" "6563969" "6597822" "6816638").PN. OR ("6876786").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L70	6	("20030012500" "20030012523" "20030016909" "4991930" "6067392" "6101301").PN. OR ("6834143").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55

L71	24	("4560016" "4581527" "4603252" "4733068" "4781056" "4830449" "4990769" "5056884" "5084615" "5134386" "5193129").PN. OR ("5293039").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L72	42	("3305036" "3782486" "4294513" "4342907" "4421979" "4449210" "4451730" "4459477").PN. OR ("4560016").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/11/09 10:55
L73	370	(1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72) and @pd>"20090130"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 11:01
L74	1	11/461,917	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/11/09 11:05

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L75	1	((method and (detect\$3 near2 movement)) with (optic\$3 near2 fib\$3)) and cable and monitor \$3 and (light near inject \$3) and sensor and (series with signals) and (analyz\$3) and alarm\$3 and (communicat\$3)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2009/11/09 11:20

L76	1	(((detect\$3 near2 movement)) with (optic \$3 near2 fib\$3)) and cable and monitor\$3 and (light near inject\$3) and sensor and (series with signals) and (analyz \$3) and alarm\$3 and (communicat\$3)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2009/11/09 11:21
L77	1	(((detect\$3 near2 movement)) with (optic \$3 near2 fib\$3)) and monitor\$3 and (light near inject\$3) and sensor and (series with signals) and (analyz\$3) and alarm\$3 and (communicat\$3)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2009/11/09 11:21
L78	1	(((detect\$3 near2 movement)) with (optic \$3 near2 fib\$3)) and monitor\$3 and (light near inject\$3) and sens \$3 and (series with signals) and (analyz\$3) and alarm\$3 and (communicat\$3)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2009/11/09 11:21
L79	1	(((detect\$3 near2 movement)) with (optic \$3 near2 fib\$3)) and monitor\$3 and (light near inject\$3) and sens \$3 and (analyz\$3) and alarm\$3 and (communicat\$3)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2009/11/09 11:21
L80	1	(((detect\$3 near2 movement)) with (fib \$3)) and monitor\$3 and (light near inject\$3) and sens\$3 and (series with signals) and (analyz\$3) and alarm\$3 and (communicat\$3)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2009/11/09 11:22

L81	1	(((((detect\$3 near2 movement)) with (fib \$3)) and monitor\$3 and (light) and sens\$3 and (series with signals) and (analyz\$3) and alarm\$3 and (communicat\$3)). clm.	US-PGPUB; USPAT; UPAD	OR	ON	2009/11/09 11:22
L82	1	(((((detect\$3 near2 movement)) with (fib \$3)) and monitor\$3 and (light) and sens\$3 and (analyz\$3) and alarm\$3 and (communicat\$3)). clm.	US-PGPUB; USPAT; UPAD	OR	ON	2009/11/09 11:23

11/9/09 11:23:34 AM

C:\Documents and Settings\mconnellycushwa\My Documents\EAST\Workspaces\11461917.wsp

EXAMINER: Michelle R. Connelly Cushwa
GROUP: 2874
APPLICANT: Cary R. Murphy et al
SERIAL NO: 11/461,917
CONFIRMATION NO: 4439
FILED: August 2, 2006
FOR: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL
CABLE INTRUSION

U.S. Patent and Trademark Office
Customer Service Window Issue Fee
Randolph Building
401 Dulany Street
Alexandria, VA 22314
U.S.A.

Dear Sir:

Amendment under 37 CFR 1.312

We have received a Notice of Allowance dated November 16, 2009 and since then we have note an error in one of the claims and it is requested that the following amendment be entered:

In the Claims:

Claims 1 to 16 stand allowed.

Explanation of Amendments in the Claims:

9.(original) The method according to claim 7 wherein all loop-backs between WDMs is are at the monitor wavelength.

REMARKS:

The above enters merely a minor amendment to correct a grammatical error and does not alter the invention as claimed.

No new matter has been added and hence it is requested that this amendment after allowance be entered.

Respectfully submitted

CARY R. MURPHY ET AL

PER:

Adrian D. Battison

Registration No: 31,726

ADB/II

January 7, 2010

Adrian D. Battison

Winnipeg, Manitoba, Canada

Telephone (204) 944-0032 - FAX (204) 942-5723

EXAMINER: Michelle R. Connelly Cushwa
GROUP: 2874
APPLICANT: Cary R. Murphy et al
SERIAL NO: 11/461,917
FILED: August 2, 2006
FOR: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE
FOR INTRUSION

U.S. Patent and Trademark Office
Customer Service Window Amendment
Randolph Building
401 Dulany Street
Alexandria, VA 22314
U.S.A.

Dear Sir:

Supplemental Oath or Declaration under 37 CFR 1.67

We enclose herewith a Supplemental Declaration/Power of Attorney relating to the above application in which the spelling of the 3rd inventor's last name was correct. This has now been corrected and attached is a Supplemental Declaration/Power of Attorney signed by the 3rd inventor.

Would you please enter this correction in the above application and correct the records.

Respectfully submitted

CARY R. MURPHY ET AL

PER:

Adrian D. Battison
Registration No: 31,726

ADB/II
January 7, 2010
Enc.(1)
Adrian D. Battison

Winnipeg, Manitoba, Canada
Telephone (204) 944-0032 - FAX (204) 942-5723

Express Mail Label No.

Page 1 of 4

Docket No.
85570-1302 ADB

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION

the specification of which

(check one)

☐ is attached hereto.

☒ was filed on August 2, 2006 as United States Application No. or PCT International Application Number 11/461,917 and was amended on _____

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, or plant breeder's rights certificate(s), or 365(a) of any PCT International application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Claimed

_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	☐
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	☐
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	☐

Page 2 of 4

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

60/704,926

August 2, 2005

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

Adrian D. Battison

Registration No: 31,726

Michael R. Williams

Registration No: 45,333

Ryan W. Dupuis

Registration No: 47,345

Kyle R. Satterthwaite

Registration No: 62,594

Send Correspondence to: Mr. Adrian D. Battison
Ade & Company Inc.
2157 Henderson Highway
Winnipeg, Manitoba, Canada R2G 1P9

Direct Telephone Calls to: *(name and telephone number)*
Adrian D. Battison - (204)944-0032

Full name of sole or first inventor Cary R. Murphy	
Sole or first inventor's signature	Date
Residence Hickory, NC, U.S.A.	
Citizenship American	
Post Office Address 924-43rd Avenue Ct., N.E., Hickory NC 28601, U.S.A.	

Full name of second inventor, if any Mark K. Bridges	
Second inventor's signature	Date
Residence Hickory, NC, U.S.A.	
Citizenship American	
Post Office Address 5475 Chestnut Drive, Hickory, NC 28602, U.S.A.	

Full name of third inventor, if any Joseph Giovannini	
Third inventor's signature 	Date 1/7/10
Residence Conover, NC, U.S.A.	
Citizenship American	
Post Office Address 1540-9th Street Ln, N.W., Hickory, NC 28601, U.S.A.	

Full name of fourth inventor, if any David E. Volkey	
Fourth inventor's signature	Date
Residence Sidney, British Columbia, Canada	
Citizenship Canadian	
Post Office Address 1728 Shearwater Terrace, Sidney, British Columbia, Canada, V8L 5L4	

Full name of fifth inventor, if any Daniel M. Goertzen	
Fifth inventor's signature	Date
Residence Winnipeg, Manitoba, Canada	
Citizenship Canadian	
Post Office Address 27 Coleman Cove, Winnipeg, Manitoba, Canada, R2N 4H3	

Full name of sixth inventor, if any	
Sixth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Electronic Acknowledgement Receipt

EFS ID:	6769956
Application Number:	11461917
International Application Number:	
Confirmation Number:	4439
Title of Invention:	MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION
First Named Inventor/Applicant Name:	Cary R. Murphy
Customer Number:	23529
Filer:	Adrian David Battison
Filer Authorized By:	
Attorney Docket Number:	85570-1302 ADB
Receipt Date:	07-JAN-2010
Filing Date:	02-AUG-2006
Time Stamp:	16:37:49
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment after Notice of Allowance (Rule 312)	amendmentafterallowanceNet work1302.pdf	24785 021957634b6c795ead6f6da06ab97abcb92e4df3	no	3

Warnings:

Information:

2	Oath or Declaration filed	SupplementaldeclarationNetw ork1302.pdf	152348 057727968ce878b9a8c8b42869f0d450837 9c0dc	no	5
Warnings:					
Information:					
Total Files Size (in bytes):			177133		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/461,917	08/02/2006	Cary R. Murphy	85570-1302 ADB	4439

23529 7590 01/28/2010
ADE & COMPANY INC.
2157 Henderson Highway
WINNIPEG, MB R2G1P9
CANADA

EXAMINER

CONNELLY CUSHWA, MICHELLE R

ART UNIT	PAPER NUMBER
----------	--------------

2874

MAIL DATE	DELIVERY MODE
-----------	---------------

01/28/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Response to Rule 312 Communication	Application No.	Applicant(s)
	11/461,917	MURPHY ET AL.
	Examiner	Art Unit
	MICHELLE R. CONNELLY CUSHWA	2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

1. ☒ The amendment filed on 07 January 2010 under 37 CFR 1.312 has been considered, and has been:

a) ☐ entered.

b) ☒ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.
Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

/Michelle R. Connelly-Cushwa/
Primary Examiner, Art Unit 2874

Receipt date: 01/07/2010

EXAMINER: Michelle R. Connelly Cushwa

GROUP: 2874

APPLICANT: Cary R. Murphy et al

SERIAL NO: 11/461,917

CONFIRMATION NO: 4439

FILED: August 2, 2006

FOR: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL
CABLE INTRUSION

OK TO ENTER: /MC/

U.S. Patent and Trademark Office
Customer Service Window Issue Fee
Randolph Building
401 Dulany Street
Alexandria, VA 22314
U.S.A.

Dear Sir:

Amendment under 37 CFR 1.312

We have received a Notice of Allowance dated November 16, 2009 and since then we have note an error in one of the claims and it is requested that the following amendment be entered:

In the Claims:

Claims 1 to 16 stand allowed.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

23529 7590 11/16/2009

ADE & COMPANY INC.
 2157 Henderson Highway
 WINNIPEG, MB R2G1P9
 CANADA

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/461,917	08/02/2006	Cary R. Murphy	85570-1302 ADB	4439

TITLE OF INVENTION: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	02/16/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
CONNELLY CUSHWA, MICHELLE R	2874	385-013000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1. Mr. Adrian D. Battison
 2. Customer No: 23529
 3. Ade & Company Inc.

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Network Integrity Systems, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

1937 Tate Blvd., S.E., Hickory, NC 28602 USA

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 01-0310 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Typed or printed name Adrian D. Battison

Date February 12, 2010

Registration No. 31,726

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax **(571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

23529 7590 11/16/2009

ADE & COMPANY INC.
2157 Henderson Highway
WINNIPEG, MB R2G1P9
CANADA

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/461,917	08/02/2006	Cary R. Murphy	85570-1302 ADB	4439

TITLE OF INVENTION: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	02/16/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
CONNELLY CUSHWA, MICHELLE R	2874	385-013000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list
 (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Mr. Adrian D. Battison
 2 Customer No: 23529
 3 Ade & Company Inc.

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Network Integrity Systems, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

1937 Tate Blvd., S.E., Hickory, NC 28602 USA

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 01-0310 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____
 Typed or printed name Adrian D. Battison

Date February 12, 2010
 Registration No. 31,726

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Electronic Patent Application Fee Transmittal				
Application Number:		11461917		
Filing Date:		02-Aug-2006		
Title of Invention:		MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION		
First Named Inventor/Applicant Name:		Cary R. Murphy		
Filer:		Adrian David Battison		
Attorney Docket Number:		85570-1302 ADB		
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl issue fee	2501	1	755	755
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1055

Electronic Acknowledgement Receipt

EFS ID:	7015362
Application Number:	11461917
International Application Number:	
Confirmation Number:	4439
Title of Invention:	MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION
First Named Inventor/Applicant Name:	Cary R. Murphy
Customer Number:	23529
Filer:	Adrian David Battison
Filer Authorized By:	
Attorney Docket Number:	85570-1302 ADB
Receipt Date:	16-FEB-2010
Filing Date:	02-AUG-2006
Time Stamp:	12:35:48
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$1055
RAM confirmation Number	15653
Deposit Account	010310
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	finalfeetransmittalformNetwork1302.pdf	149427 df4fe5d853b25a1dce051069635f8d735aa7e9c4	no	2
Warnings:					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	31830 d854b8816089e985c5700fc78b4374a0c6d7f3f5	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			181257		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/461,917	04/27/2010	7706641	85570-1302 ADB	4439
23529	7590	04/07/2010		
ADE & COMPANY INC. 2157 Henderson Highway WINNIPEG, MB R2G1P9 CANADA				

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 516 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Cary R. Murphy, Hickory, NC;
Mark K. Bridges, Hickory, NC;
Joseph Giovanni, Hickory, NC;
David E. Vokey, Sidney, CANADA;
Daniel M. Goertzen, Winnipeg, CANADA;

APPLICANT: Cary R. Murphy et al
PATENT NO: 7,706,641
ISSUED: April 27, 2010
FOR: MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE
FOR INTRUSION

U.S. Patent and Trademark Office
Customer Service Window
Decisions and Certificate of Correction Branch
Randolph Building
401 Dulany Street
Alexandria, VA 22314
U.S.A.

Dear Sir:

Enclosed is a request for a Certificate of Correction on the above patent
which we request be entered on the above patent.

Respectfully submitted

CARY R. MURPHY ET AL

PER:

Adrian D. Battison

Registration No: 31,726

ADB/III

May 12, 2010

Enc.(1)

Adrian D. Battison

Winnipeg, Manitoba, Canada

Telephone (204) 944-0032 - FAX (204) 942-5723

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

Page 1 of 1

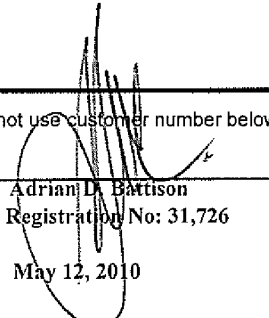
PATENT NO. : 7,706,641
APPLICATION NO. : 11/461,917
ISSUE DATE : April 27, 2010
INVENTOR(S) : Cary R. Murphy, Mark K. Bridges, Joseph Giovannini, David E. Vokey & Daniel M. Goertzen

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On January 7, 2010 a new Declaration/Power of Attorney was filed correcting the spelling of the third inventor's last name. This was entered at the US Patent Office on January 28, 2010. The issue fee wasn't paid until February 16, 2010 in order for this correction to be entered. The spelling of the third inventor's last name should read GIOVANNINI and NOT Giovanni as listed on the front page of the patent.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

Ade & Company Inc.
2157 Henderson Highway
Winnipeg, Manitoba, Canada
R1G 1P9


Adrian D. Battison
Registration No: 31,726

May 12, 2010

PATENT NO. 7,706,641

No. of additional copies



Electronic Patent Application Fee Transmittal				
Application Number:		11461917		
Filing Date:		02-Aug-2006		
Title of Invention:		MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION		
First Named Inventor/Applicant Name:		Cary R. Murphy		
Filer:		Adrian David Battison		
Attorney Docket Number:		85570-1302 ADB		
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Certificate of correction	1811	1	100	100
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				100

Electronic Acknowledgement Receipt

EFS ID:	7612718
Application Number:	11461917
International Application Number:	
Confirmation Number:	4439
Title of Invention:	MONITORING INDIVIDUAL FIBERS OF AN OPTICAL CABLE FOR INTRUSION
First Named Inventor/Applicant Name:	Cary R. Murphy
Customer Number:	23529
Filer:	Adrian David Battison
Filer Authorized By:	
Attorney Docket Number:	85570-1302 ADB
Receipt Date:	14-MAY-2010
Filing Date:	02-AUG-2006
Time Stamp:	11:51:19
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 100
RAM confirmation Number	7685
Deposit Account	010310
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Certificate of Correction	certificateofcorrectionNetwork1302.pdf	31379 24c87f66daf250efbe565c972bd5141b69e01bd0	no	2
Warnings:					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	30300 408e0fab4e76b33b51de7c8afee97d2c97017225	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			61679		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,706,641 B2
APPLICATION NO. : 11/461917
DATED : April 27, 2010
INVENTOR(S) : Cary R. Murphy et al.

Page 1 of 1

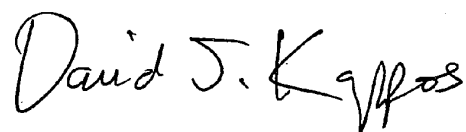
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title Page Item (75) Inventors should read

Last Name as Giovannini

Signed and Sealed this

Fifteenth Day of June, 2010

A handwritten signature in black ink that reads "David J. Kappos". The signature is written in a cursive, flowing style.

David J. Kappos
Director of the United States Patent and Trademark Office