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11/753,637	05/25/2007	Julian Poyner	07EJ086 (1506.158)	5904

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EXAMINER
CUMBESS, YOLANDA R

ART UNIT	PAPER NUMBER
3651	

NOTIFICATION DATE	DELIVERY MODE
08/10/2009	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	11/753,637	POYNER ET AL.	
	Examiner	Art Unit	
	YOLANDA CUMBESS	3651	

-- 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 *4/20/2009*.

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) _____ 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4a) Of the above claim(s) _____ is/are withdrawn from consideration.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 4-35* is/are rejected.

7)☒ Claim(s) *3* 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 *25 May 2007* 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

Response to Arguments

Applicant's arguments with respect to claims 1-35 have been considered but are moot in view of the new ground(s) of 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 –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 5-6, 8-19, and 24-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Conti. Conti discloses a safety arrangement for use with a piece of equipment (Fig. 1) and method, the safety arrangement comprising: a signal generating unit (Col. 4, lines 28-32) for generating an optical signal; an elongate element (11)(Fig. 1) to be disposed along, about, around or through the piece of equipment and positioned and oriented so that an operator can manually pull the elongate element (Col. 3, lines 45-50), the elongate element (11) being capable of transmitting an optical signal (cable, Ref. 11 is comprises optical fibers along which optical signals are inherently sent, Col 3, lines 42-44); and a signal detecting unit (28)(Col. 4, lines 1-5) for detecting an optical signal; the signal generating unit being connected to the signal detecting unit by the elongate element (11), such that the signal detecting unit is in optical communication with the generating unit, the signal detecting unit (28) being

arranged to detect a change in the optical signal transmitted by the elongate element (11) as a consequence of movement of the elongate element by interaction from the operator and, upon detection of the change in the signal, the detecting unit is configured to effect a change in the operation of the piece of equipment (Col. 4, lines 35-45); the piece of equipment is a conveyor belt (Fig. 1); the elongate element comprises an optical fibre (Col. 3, lines 43-44); the optical fibre extends along a support cable (Col. 1, lines 61-65); the support cable is electrically conductive (Col. 3, lines 35-45); the detecting unit (28) is, upon detection in the change of the optical signal, configured to directly affect the operation of the piece of equipment (Col. 4, lines 36-48); the detecting unit (28) is, upon detection in the change of the optical signal, configured to indirectly affect the operation of the piece of equipment (Col. 4, lines 25-48); wherein upon detection of the change in the signal, the detecting unit is configured to effect the prevention of the supply of power to the piece of equipment (Col. 4, lines 35-45); wherein upon detection of the change in the signal, the detecting unit is configured to effect the prevention of movement of at least a part of the equipment (Col. 4, lines 35-45); a signal generating unit (28) for generating an optical signal; an elongate element (11) to be disposed along, about, around or through the piece of equipment, the elongate element (11) being capable of transmitting an optical signal; and a signal detecting unit (28) for detecting an optical signal; the signal generating unit being connected to the signal detecting unit (28) by the elongate element (11), such that the signal detecting unit is in optical communication with the generating unit (Col. 4, lines 1-48), the signal detecting unit (28) being arranged to detect a change in the optical signal

transmitted by the elongate element (11) as a consequence of movement of the elongate element (11) by direct interaction of a user with the elongate element and, upon detection of the change in the signal due to pulling of the elongate element (Col. 4, lines 1-35), the detecting unit (28) is configured to effect a change in the operation of the piece of equipment (Col. 4, lines 35-45); a method of affecting the operation of a piece of equipment, the piece of equipment being provided with an elongate element (11) that is capable of transmitting an optical signal, and which is disposed along, about, around or through the piece of equipment (Fig. 1) for being manipulated by an operator to cause a change of shape of the elongate element (Col. 4, lines 5-35), comprising: sending an optical signal along the elongate element (11); monitoring the optical signal sent along the elongate element for changes in the optical signal caused by changes in shape of the elongate element due to operator pulling of the elongate element (Col. 4, lines 1-40); and if a change in the optical signal is detected as a consequence of movement of the elongate element (11), affecting the operation of the piece of equipment; the detected change is a change in a wavelength of the optical signal sent along the elongate element (Col. 3, lines 40-50, cable comprises optical fibers and detector inherently detects changes in wavelength of optical signals); the signal is continuous (Col 4, lines 30-35); the signal comprises a plurality of pulses (optical signals inherently comprise a plurality of pulses); wherein affecting the operation of the piece of equipment comprises preventing power being supplied to the piece of equipment (Col. 4, lines 35-48); wherein affecting the operation of the piece of equipment comprises preventing movement of at least a part of the piece of equipment (Col. 4, lines 35-48); a

signal detecting unit for detecting a pressure wave signal (Col. 5, lines 15-20, measure of acoustics is measure of pressure waves); the signal generating unit being connected to the signal detecting unit by the elongate element ("cable"), the signal detecting unit being arranged to detect a change in the pressure wave signal transmitted by the elongate element as a consequence of movement caused by the operator anywhere along a length of the single elongate element (Col. 4, lines 63-67); the elongate element is capable of transmitting a pressure wave signal, and which is disposed along, about, around or through the piece of equipment, comprising sending a pressure wave signal along the elongate element; monitoring the pressure wave signal sent along the elongate element for changes in the pressure wave signal caused by direct user interaction with the single elongate dement anywhere along a length of the single elongate element (Col. 5, lines 1-30); and changes in the pressure wave signal is detected as a consequence of movement caused by the direct user interaction anywhere along the length of the elongate element (Col. 5, lines 23-27); a signal generating unit (Col. 4, lines 25-45) for generating an electrical signal; an elongate element (11) to be disposed along, about, around or through the piece of equipment (Fig. 1), the elongate element (11) being capable of transmitting an electrical signal; and a signal detecting unit (28) for detecting an electrical signal; the signal generating unit (Col. 4, lines 38-45) being connected to the signal detecting unit (28) by the elongate element, such that the signal detecting unit is in electrical communication with the signal detecting unit (Col. 3, lines 35-40), the signal detecting unit being arranged to detect a change in the electrical signal transmitted by the elongate element as a consequence of

movement of the elongate element caused by user pulling of the elongate element (11) relative to the piece of equipment and, upon detection of the change in the signal, the detecting unit (28) is configured to effect a change in the operation of the piece of equipment; a method of affecting the operation of a piece of equipment, the piece of equipment (Fig. 1) being provided with an elongate element (11) that is capable of transmitting an electrical signal, and which is disposed along, about, around or through the piece of equipment and positioned to be grasped by an operator (Col. 4, lines 6-10), sending an electrical signal along the elongate element (11); monitoring the electrical signal sent along the elongate element for changes in the electrical signal caused by movement associated with the operator grasping of the elongate element (11); and if a change in the electrical signal is detected as a consequence of movement of the elongate element (11), affecting the operation of the piece of equipment (Col. 4, lines 35-48).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4, 9, 20; and 32-35 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Conti.

Relative to claim 4, Conti does not expressly disclose the detecting unit comprises a photo detector. However, since the detector senses changes in optical signals, the detector can be a photo-detector. Further, the use of photo-detectors to detect changes in optical signals along cables or optical fibers is well known in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Conti so that the detecting unit comprises a photo detector in order to detect changes in optical signals and since it is well known in the art of optical communications.

Relative to claim 9, Conti does not expressly disclose: comprising a cable of two overlapping optical fibers is well known in the art. Further the use of two optical fibers is a matter of design choice depending on communication needs.

Relative to claim 20, Conti does not expressly disclose the detected change is change in time of flight of the optical signal. Providing a detection unit as mentioned above, wherein the detected change is change in time of flight of the optical signal is well known in the art.

Relative to claims 32-35: Conti discloses all claim limitations, including a safety arrangement for use with a piece of equipment and method of affecting operation, the safety arrangement comprising: an elongate element (52) to be disposed along, about, around or through the piece of equipment and positioned to be directly accessible by

persons adjacent the piece of equipment, the elongate element (52) being provided with a component that is sensitive to changes in magnetic fields and which is fixed in position relative to the elongate element, the component being in communication with a monitoring apparatus (Col. 5, lines 28-40); and, upon detection of that change in the component sensitive to changes in magnetic fields, the monitoring apparatus is configured to effect a change in the operation of the piece of equipment (Col. 5, lines 60-67); the elongate element (52) being provided with a component sensitive to changes in magnetic fields which is fixed in position relative to the elongate element (52) and oriented so as to not otherwise interfere with operation of the piece of equipment (Col. 5, lines 28-60), the monitoring apparatus being arranged to detect changes in the component sensitive to changes in magnetic fields as a consequence of movement of the component (Col. 5, lines 60-67, Col. 6, lines 1-20) and without interfering with operation of the piece of equipment; the elongate element (52) positioned to be grasped by persons proximate the piece of equipment, the changes in magnetic fields detected as a consequence of movement caused by direct interaction by persons proximate the piece of equipment with any portion of the elongate element (Col. 6, lines 1-20).

Conti does not expressly disclose: a magnet located adjacent to the elongate element; sensitive to changes in magnetic fields relative to the magnet caused by pulling of the elongate element by adjacent persons. Although not specifically disclosed, it is obvious to one of ordinary skill in the art to provide a magnet adjacent to the elongate element in which signals produced by electromagnetic waves are

transmitted and detected as a well known means to create a changing magnetic field that induces an electric field to create electricity.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Conti with the magnet provided adjacent to the elongate element as a well known means to create a changing magnetic field that induces an electric field to create electricity.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Conti in view of Temple. Relative to claim 7, Conti discloses all claim limitations, but does not expressly disclose: the support cable is provided with protrusions. Temple teaches the support cable (100)(Fig. 1) is provided with protrusions for the purpose of providing a cable that minimize damage risks to the cables and optical fibers (Page. 1, Para. 0004).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Conti with the protrusions provide in the support cable as taught in Temple for the purpose of providing a cable that minimize damage risks to the cables and optical fibers.

Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conti in view of Fayolle et al (US PG. Pub. 2006/0285105). Relative to claims 21-23, Conti discloses all claim limitations, but does not expressly disclose: the detected change is a change in a polarization state of the optical signal sent along the elongate

element; two signals are sent along the elongate element; the detected change is a change in phase between the two signals.

Fayolle teaches: the detected change is a change in a polarization state of the optical signal sent along the elongate element (Para. 0008-0009); two signals are sent along the elongate element (Para. 0021); the detected change is a change in phase between the two signals (Para. 0021) for the purpose of providing an accurate polarized light ware reflectometry method over a given range of polarization mode dispersion coefficients (Para. 0003).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Conti with the detection of changes in a polarization state between two signals configured as above, as taught in Fayolle for the purpose of providing an accurate polarized light ware reflectometry method over a given range of polarization mode dispersion coefficients.

Allowable Subject Matter

Claim 3 is 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.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOLANDA CUMBESS whose telephone number is (571)270-5527. The examiner can normally be reached on MON-THUR 9AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, GENE CRAWFORD can be reached on 571-272-6911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gene Crawford/
Supervisory Patent Examiner, Art Unit 3651

/YOLANDA CUMBESS/
Examiner, Art Unit 3651

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