REMARKS

Summary of Office Action

Claims 1-35 are pending. In an Office Action mailed January 8, 2009, the Examiner objected to claim 21 as including a misspelled word. The Examiner rejected claims 1-14 under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 30 and 31 stand rejected under 35 U.S.C. §102(b) as being anticipated by Nord et al. (U.S. Patent No. 4,863,012). Claims 1-27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Buescher et al. (U.S. Patent No. 5,992,604) in view of Balzer-Apke et al. (U.S. Patent No. 6,230,871). The Examiner next rejected claims 28 and 29 under 35 U.S.C. §103(a) as being unpatentable over Stoxen et al. (U.S. Patent No. 5,842,554) in view of Genahr et al. (U.S. Patent No. 5,021,766). Claims 32-35 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Middeldorp et al. (U.S. Patent No. 4,977,998) in view of Wolfe (U.S. Patent No. 6,420,846).

Objections and §112 rejections

Applicant appreciates the Examiner's detailed review of the application and pending claims as well as the suggestions offered by the Examiner with respect to addressing these objections/rejections. With respect to the Examiner's objection of claim 21, Applicant has amended claim 21, and paragraph [0041] of the specification, to correct the spelling of the word "polarisation" to "polarization" as suggested by the Examiner.

With respect to the rejection of claims 1 and 14 under 35 U.S.C. §112, second paragraph, Applicant has amended these claims as suggested by the Examiner to recite that the "signal detecting unit is an optical communication with the signal generating unit" rather than being in communication with itself as was previously recited in these claims. Applicant believes these amendments overcome the objections and §112 rejections.

Prior Art Rejections

The Examiner has offered different rejections with respect to each of the pending claims and a number of prior art references. Applicant has herein amended each of the independent claims to further define the present invention. More specifically, Applicant has amended each of the pending claims to further define the position and orientation of the elongate member so as to clarify the user interaction with the elongate element. The art of record is not believed to disclose or teach or suggest safety arrangements and or methods of operation as defined by the pending claims. However, in reviewing the Examiner's rejections, Applicant believes the following remarks will be helpful for the Examiner assessing the patentability of the pending claims with respect to the art of record.

Of the various references applied by the Examiner, Nord et al. seems most closely related to the present invention. However, although the Examiner rejected claims 30 and 31 under 35 U.S.C. §102(b) as being anticipated by Nord et al., Applicant respectfully disagrees that Nord et al. anticipates any of the pending claims of the present application.

Claims 30 and 31 each call for an elongate element that is capable of transmitting or sending an electrical signal along the elongate element. Comparatively, Nord et al. discloses an accumulating conveyor system that is equipped with a pull cable 57 operatively connected to a limit switch 80. A system similar to that disclosed in Nord et al., as well as the short coming thereof, is discussed in paragraphs [0005 -- 0010] of the present application. In Nord et al., no electrical signal is sent along cable 57 rather sufficient translation of the cable is required to actuate the limit switch attached at end thereof. Nord et al. does not generate, transit, or send any signal along the length of cable 57. Cable 57 is simply a physical extension that increases the range of operation associated with limit switch 80. As such, Nord et al. does not disclose or suggest transmitting or sending an electrical signal along the elongate element as called for in claims 30 and 31 and other independent claims of the present invention.

The Examiner has also rejected claims 1-27 as being unpatentable over Buescher et al. in view of Balzer-Apke et al. Unlike Nord et al., the system of Buescher et al. operates in a manner that is fundamentally different than the claimed invention. The

addition Balzer-Apke et al. does not overcome this short coming of Buescher et al. Balzer-Apke et al. is directed to personnel movement devices wherein one or more position sensors that are interconnected with multiple data lines. However, the pending claims define a position, orientation, and operation of the elongate member that is not disclosed or suggested by this combination or references or any of the art of record. That is, the pending claims define safety arrangements wherein the operator interacts with an elongate element that communicates a signal. Claim 1 defines an arrangement wherein the elongate element transmits an optical signal that changes in response to movement of the elongate element. Claim 14 defines an arrangement having a signal detecting unit that is arranged to detect a change in the optical signal transmitted by the elongate element as a consequence of movement of the elongate element. Claim 15 calls affecting the operation of the piece of equipment if a change in an optical signal is detected as a consequence of movement of the elongate element. As further supported below, neither Buescher et al. nor Balzer-Apke et al. disclose or suggest a system wherein the same element that communicates the signal instructs moves and thereby alters the signal carried thereon.

Buescher et al. discloses a conveying apparatus that includes a plurality of light barriers. Each light barrier is formed by an emitter and receiver pair. The emitter and receiver pairs are positioned to generally flank a conveying area. As people are transferred on the conveyor, the periodic breaking of the light barriers indicates that people or parcels are present on the conveyor and that operation of the conveyor should continue. There is no movable elongate element in the system of Buescher et al.

As shown in Fig. 1 of Buescher et al., the series of emitters and detectors 4, 5 flank the conveyance area and are interconnected with a controller via a number of cables 6, 7, 8, 9. To ensure aligned communication, emitters 4 and detectors 5 must be aligned and generally secured to the sidewalls of the conveyance window. It should be appreciated that connecting emitters and detectors 4, 5, with an elongate member that traverses the conveyance window to achieve the claimed orientation and operation of an "elongate member" from this combination of references would generate an obstruction for those riding on the conveyor. Simply, the modification suggested by the Examiner

would render the system of Buescher et al. unsuitable for its intended purpose of conveying materials in a manner that provides a periodic indication of the presence of materials being conveyed. The pending claims define the orientation and operation of the elongate member in a manner that is patentably distinct from the system of Buescher et al. even when combined with the disclosure of Balzer-Apke et al. or any of the other references of record.

Each of claims 1, 14, and 15 define a safety arrangement or method of operating equipment equipped with a safety arrangement wherein a signal detecting unit is arranged to detect a change in the optical signal transmitted by the elongate element as a consequence of movement of the elongate element. Claim 14 further specifies that the signal generating unit is connected to the signal detecting unit by an elongate element. Claim 15 defines a method of affecting operation of equipment that includes ending an optical signal along an elongate element, monitoring the optical signal sent along the elongate element for changes in the optical signal, and if a change in the optical signal is detected as a consequence of movement of the elongate element, affecting the operation of the piece of equipment. Each of these claims explicitly recites that movement of the elongate member, the member that communicates the signal, effectuates the changes in the signal that affect operation of the equipment. Such a system is not disclosed or considered obvious in view of any of the references of record.

The claims have been further amended to clarify that operator or interaction with the elongate member is responsible for the movement that initiates the interference with operation of the piece of equipment. The suggestion to combine the escalator/moving walkway monitoring system of Balzer-Apke et al. with the construction of the system of Buescher et al. to include an elongate member whose movement alters the operation of the equipment renders the system of Buescher et al. unusable for its intended function of transporting people and materials in an unobstructed manner.

Both Balzer-Apke et al. and Buescher et al. disclose conveyor monitoring and control systems that include one or more wired or wireless limit switches or the like that are interconnected to effectuate operation of the equipment. Neither reference, alone or in combination, discloses or suggests providing an elongate member that communicates

the electrical signals between the signal generating and signal detecting units and is moveable to effectuate changes in the operation of the equipment so equipped as is defined by claims 1, 14, and 15. These references are also devoid of any disclosure or suggestion to allow user or operator interaction with any elongate member disclosed therein. As such, Applicant believes that claims 1-27 are patentably distinct thereover.

The Examiner next rejected claims 28 and 29 as being unpatentable over Stoxen et al. in view of Genahr et al. Claims 28 and 29 have been amended to further define that which is called for therein. As amended, claims 28 and 29 further define that the respective safety arrangements are operable with a single elongate member that is positioned to extend along a length of the equipment whose operation is to be altered. Claims 28 and 29 further define that operation of the controlled equipment is suspended in response to the signals associated with movement of the elongate member. Claims 28 and 29 have been further amended to clarify that it is the direct operator interaction with the elongate member that causes the movement associated with interfering with operation of the piece of equipment.

The passenger sensor system of Stoxen et al., much like the intrusion detection system of Genahr et al., discloses a piezoelectric cable that is positioned underneath an area that is to be monitored, such as a platform that is to be traversed by passengers using an escalator or horizontal passenger conveyor or a yard or area that is to be monitored. Stoxen further discloses that no motion of the floor plate is required to activate the passenger sensor system. C. 2, ll. 25-26. Stoxen et al. further discloses that the platforms are positioned adjacent the conveyors. C. 2, ll. 15-19. As such, the system of Stoxen does not include an elongate member that extends along, about, or through equipment being monitored as is defined by claims 28 and 29. Stoxen et al. fails to disclose any elongate member that is positioned and configured for interaction and operation in the manner specified by the pending claims.

Genahr et al. discloses a pressure sensitive security system that monitors intruder position and motion. A number of pressure sensitive members are buried underground in an area to be monitored. As an invader traverses the area being monitored, information from the multiple elongate sensors is communicated to a controller and used to assess the

location, direction, and speed of the intruder. The information attained from the multiple sensors is utilized to triangulate an intruder's positional and directional information. Claims 28 and 29 have been further amended call for a single elongate member. Not only is the sensor of Genahr et al. not accessible to a user or operator, Genahr et al. disloses that at least two elongate members are necessary to allow the triangulation of an invaders position as well as the invaders directional information. Providing a single member as called for in claims 28 and 29 would be incapable of providing such information. Accordingly, Applicant believes that which is called for in claims 28 and 29 is patentably distinct over the art of record.

The Examiner next rejected claims 32-35 under 35 U.S.C. §103(a) as being unpatentable over Middeldorp in view of Wolfe. Applicant has amended claims 32-35 to further define that which is called for therein. Although Applicant does not necessary agree that a supply of cup lids as disclosed by Middledorp is a reasonable interpretation of an elongate member as that term is used herein, Applicant has amended claims 32-35 to further define the position, orientation, operation, and interaction of the elongate member with respect to the equipment as well as persons proximate thereto. Wolfe, being related to a system for magnetically monitoring the position of a power drive unit of a power conveyor, and Middeldorp, being related to a cup lid orientation detection and ejection device, do not disclose or suggest a monitoring system having an elongate member as is defined by claims 32-35 as presented herein. Accordingly, Applicant believes claims 32-35 are patentably distinct over there references as well as the remaining art of record.

With respect to the various rejections based on whole or in part on the disclosures of Wright et al. related to a glove equipped with an optical output deflection system, Meyrueix et al. related to an opto-electric circuit testing device, Glew related to a support separator for fiber optic communication signals, and Olsen et al. related to a load cell with a fiber optic sensitivity adjustment sensor, Applicant notes that neither these references, nor the references discussed above, disclose or suggest a safety arrangement or method of affecting the operation of equipment with an elongate member as is defined by the pending claims.

Therefore, Applicant believes claims 1-35 are patentably distinct over the art of record. Accordingly, Applicant respectfully requests a notice of allowance of claims 1-35. The Director is hereby authorized to charge Deposit Account No. 50-1170 the amount of $130.00 for a one-month extension of time associated with entry and consideration of this communication. The Examiner is cordially invited to contact the undersigned if any other issues remain which would hinder or otherwise delay passage of this matter to issuance.

Respectfully submitted,

Kirk L. Deheck
Reg. No. 55,782

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BOYLE FREDRICKSON, S.C.
840 North Plankinton Avenue
Milwaukee, WI 53203
Telephone: (414) 225-9755
Facsimile: (414) 225-9753
docketing@boylefred.com