

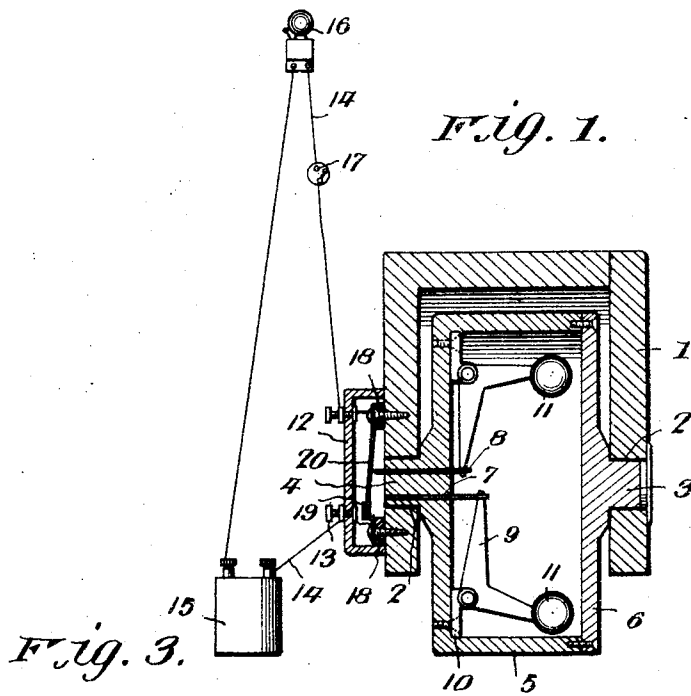
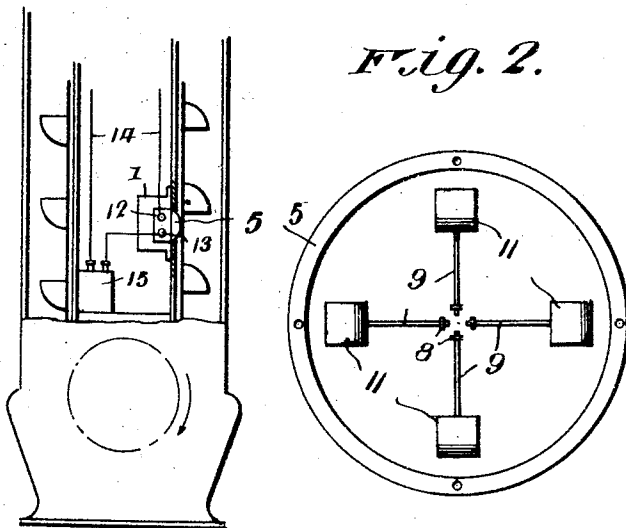
No. 779,222.

PATENTED JAN. 3, 1905.

U. G. KING.

DUST PROOF AUTOMATIC CIRCUIT CLOSER AND OPENER.

APPLICATION FILED APR. 9, 1904.



Witnesses

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ULYSSES G. KING, OF HARLAN, IOWA, ASSIGNOR OF ONE-HALF TO
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DUST-PROOF AUTOMATIC CIRCUIT CLOSER AND OPENER.

SPECIFICATION forming part of Letters Patent No. 779,222, dated January 3, 1905.

Application filed April 9, 1904. Serial No. 202,457.

To all whom it may concern:

Be it known that I, ULYSSES G. KING, a citizen of the United States, residing at Harlan, in the county of Shelby and State of Iowa, have invented new and useful Improvements in Dust-Proof Automatic Circuit Closers and Openers, of which the following is a specification.

My invention relates to new and useful improvements in automatic circuit closers and openers; and its object is to provide contacts which are adapted to be operated by plungers which are arranged within a revoluble pulley and are controlled by weighted levers which during the rotation of the pulley hold the plungers from the contacts by centrifugal force.

With the above and other objects in view the invention consists of a casing having a dust-cap secured to one side thereof, and arranged within this cap are contacts which are electrically connected to the wires of a circuit which includes a suitable alarm. The contacts are normally removed from each other, and one of them is adapted to be operated by any one of the series of plungers which are slidably mounted within one of a pair of trunnions extending from opposite sides of a hollow pulley. These trunnions are journaled within the casing, and within the pulley are weighted bell-crank levers which are connected to the plungers and which are adapted when the pulley is rapidly rotated to withdraw the plungers from position upon the contact.

The invention also consists in the further novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a central vertical section through the circuit-closer and showing diagrammatically the circuit in which it is included. Fig. 2 is a side elevation of the pulley with the face-plate thereof removed, and Fig. 3 is a detail view showing my improved circuit-closure connected to an elevator.

Referring to the figures by numerals of reference, 1 is a casing having apertures 2 in opposite sides thereof, in which are journaled trunnions 3 and 4. The trunnion 4 extends from the center of one side of a hollow pulley 5, while the trunnion 3 extends from the center of a face-plate 6, which is adapted to be detachably secured to the other side of said pulley. The trunnion 4 has parallel passages 7 therein, in which are slidably mounted plungers 8, and each plunger is connected to one end of a bell-crank lever 9, fulcrumed in a bracket 10, secured within the pulley. Weights 11 are secured to the other ends of the bell-crank levers.

A dust-cap 12 is secured upon one side of the casing 1 and extends over the trunnions 4, and arranged on this dust-cap are binding-posts 13, to which are connected wires 14 of an electric circuit. This circuit includes a source 15 of electricity, a bell 16 or other suitable alarm, and a switch 17. Secured within the cap 12 upon blocks 18 of insulating material are contacts 19 and 20. Contact 19 is preferably formed of a short strip of metal, while contact 20 is constructed of a strip of spring metal, which is adapted when pressed laterally to contact with the strip 19. These strips 19 and 20 are connected to the binding-posts 13, respectively, and the contact 20 extends over the end of trunnion 4 and is adapted to be contacted by any one of the plungers 8. Pulley 5 is adapted to be rotated in any suitable manner, and the weights 11 will be thrown outward by centrifugal force and will draw the plungers 8 into the pulley 5 and away from the contact 20. Should the rotation of the pulley entirely or nearly stop, one or more of the weights 11 will drop by gravity, so as to slide their plungers 8 outward against the contact 20 and press that contact against strip 19. A circuit is thus established from the source 15 to the alarm 16, provided the switch is closed.

A device such as herein described is especially adapted for use upon mill and other elevators or on machinery where an alarm is desired to indicate the stoppage thereof.

The pulley may be rotated in any suitable manner, as by placing the same in contact with a belt of an elevator, as shown in Fig. 3.

I do not restrict myself to the use of any particular number of levers 9.

The cap 12 protects the contacts from dust, &c., and the device is thus rendered very lasting.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing any of the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus described the invention, what is claimed as new is---

1. In a device of the character described, the combination with a casing having contacts thereon included in a circuit with a source of electricity and an alarm; of a hollow revoluble device connected to the casing, slides mounted therein and extending therefrom and adapted to bear upon one of the contacts, and weighted bell-crank levers within the revoluble device and connected to and adapted to operate the plungers.

2. In a device of the character described, the combination with a casing having contacts thereon included in a circuit with a source of electricity and an alarm; of a hollow pulley, trunnions thereon journaled within the casing, plungers slidably mounted within one of the trunnions and adapted to bear upon one of the contacts, and weighted bell-crank levers fulcrumed within the pulley and connected to and adapted to operate the plungers.

3. In a device of the character described, the combination with a casing having a dust-cap thereon, and contacts within the cap and included in a circuit with a source of electricity and an alarm; of a hollow pulley, a detachable face-plate thereon, trunnions upon the pulley and face-plate and journaled in the casing, plungers slidably mounted within one of the trunnions and adapted to bear on one of the contacts, and weighted bell-crank levers fulcrumed within the pulley and connected to the plungers.

In testimony whereof I affix my signature in presence of two witnesses.

ULYSSES G. KING.

Witnesses:

JOHN MCGINNESS,
J. D. HOLMES.