

S. S. WILLIAMSON & B. WILSON.
 TRAVELING CONTACT FOR ELEVATORS.
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1,017,614.

Patented Feb. 13, 1912.

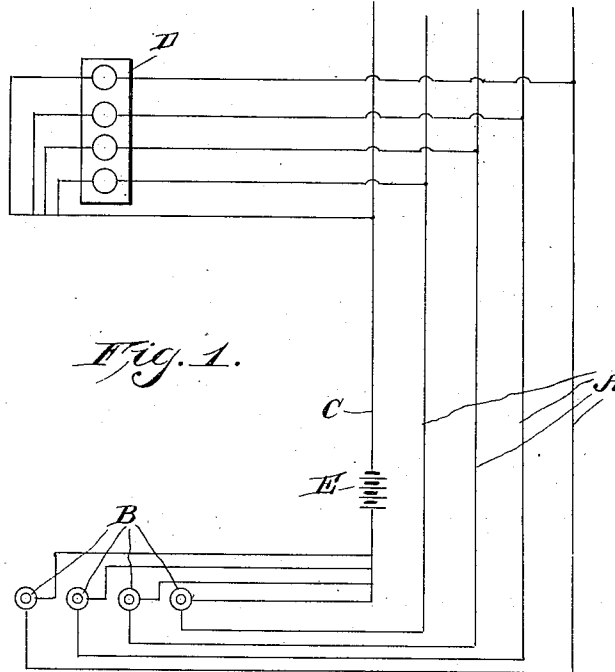


Fig. 1.

Fig. 2.

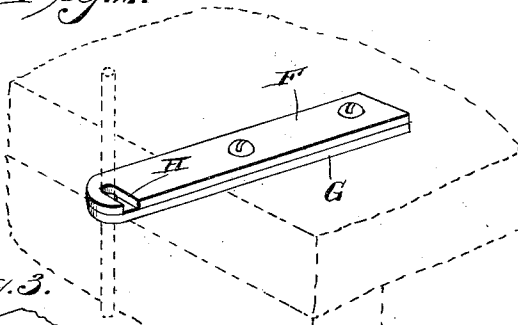


Fig. 3.

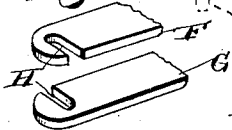


Fig. 6.



Fig. 7.

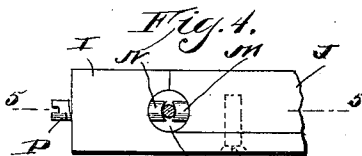
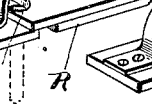


Fig. 4.

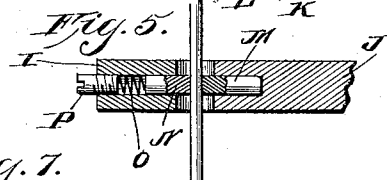


Fig. 5.

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UNITED STATES PATENT OFFICE.

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TRAVELING CONTACT FOR ELEVATORS.

1,017,614.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, SAMUEL S. WILLIAMSON, a citizen of the United States, and BAINBRIDGE WILSON, a subject of the King of Great Britain, both residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Improvement in Traveling Contacts for Elevators, of which the following is a specification.

Our invention relates to a new and useful improvement in a traveling contact for elevators, and has for its object to provide a simple and effective system of this description wherein the conductors will be stationary but the elevator will be always in electrical connection with said conductors by the use of contacts traveling with the elevator.

A further object of our invention is to so construct these traveling contacts that they may be easily and quickly attached or detached from the conductors.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a diagrammatical view showing the method of wiring; Fig. 2, is a perspective view of one of the contacts showing the conducting wire and elevator in dotted lines; Fig. 3, a perspective view of the contact end of the two members of the contact separated; Fig. 4, a modification of a traveling contact in which carbons are used; Fig. 5, a section on the line 5—5 of Fig. 4; Fig. 6, a modified form of contact similar to the contact shown in Figs. 2 and 3, but having contact springs attached thereto; Fig. 7, a perspective view of the two members of Fig. 6 separated.

In the drawings A represents conducting wires, each of which are in permanent electrical contact with one contact point of different push-buttons B, the other contact-point of the push-buttons is in electrical contact with the common return or battery

wire C. Each of the wires A are always connected with one terminal of the electromagnet in the annunciator D of the elevator by means of traveling contacts carried by the elevator, and the other terminal of each of the magnets of the annunciator is always in contact with the wire C, also by means of a traveling contact carried by the elevator.

E represents a battery, or other source of electricity, interposed in a wire C; the wires A and wire C are strung vertically in the elevator-shaft from the top to the bottom thereof and are only secured at each end. The traveling contacts entirely surround the wire so that they cannot become displaced therefrom.

It will be seen by the diagram that when a push-button B is pressed a circuit will be formed from one terminal of the battery through the push-button, then through one of the wires A connected to the actuated push-button through the traveling contact traveling upon that certain wire, through the predetermined magnet of the annunciator, thereby actuating the mechanism to indicate the number, then to the wire C by means of a traveling contact to the opposite pole of the battery.

Experiments have been made whereby trolley wheels carried by the elevator have been held in spring contact with vertical conductors for the purpose of connecting said conductors with the annunciator in the car, but all such experiments have proven that trolley wheels are impractical because of the fact that they are very liable to be displaced from the conductor by the swaying of the car, but the chief disadvantage is the noise created by said wheels traveling upon the conductors. In our invention by stringing wires from the top to the bottom of the elevator-shaft we are enabled to provide traveling contacts carried by the elevator which will entirely surround the wire, thus preventing the same from being ever disengaged from the contact, and by forming the hole in the traveling contact, through which the wire passes, of somewhat larger diameter than the diameter of the wire we are enabled to do away with the objectionable noise above referred to, and it has been found by experiment that the hole in the traveling contact through which the wire passes can be made considerably larger in

diameter than the diameter of the wire without interfering with the electrical connection between the wire and the traveling contact because of the fact that the wire stretched from the top to bottom of the shaft will not be perfectly stationary and will never be out of contact with the surrounding traveling contact for a sufficient length of time to prevent the ringing of the annunciator bell, in fact it would be almost an impossibility, even while the car is stationary, to so set and hold the wire by hand that it would be in the center of the hole and out of contact with the traveling contact even if the hole was twice the diameter of the wire.

For the purpose of providing for the easy attaching and removal of the traveling contacts from the wires, we prefer to construct these contacts in two parts, the form shown in Figs. 2 and 3 consisting of the strips F and G, which are made exactly alike with notches or slots H formed in one end, and when applied to the wire they are placed so that the notches or slots H will extend in opposite directions to one another, so that one notch or slot will open to one side and that of the other strip will open to the other side, but will leave a circular hole or opening through the end of the contact strips through which the wire may pass. These strips F and G are then secured to the car preferably by screws so as to be easily removed, the wires are connected to each of the traveling contacts and carried into the car to the annunciator. Of course this system could be used to convey the electricity to the car for the purpose of illuminating the same if desired, and when so used an extra wire would be supplied and a traveling contact connected with said wire which would be in connection with one terminal of the lamp, and the other terminal of the lamp would be in electrical connection through another traveling contact with another additional wire, and these two additional wires would be each connected with one brush of a dynamo. Of course the contacts in working upon the electric light wires would have to be in positive contact with such wires at all times.

In Figs. 4 and 5 we have shown a modification of a traveling contact which might be used in place of the contact shown in Figs. 2 and 3, but would preferably be used only upon the electric light wires where a positive contact was desired. This consists of an arm composed of two members I and J secured to the car and extending out therefrom, and these two members I and J are adapted to be secured together by a screw K. The members I and J have each semi-circular cutaway portions formed in the same so that when they are secured together an opening L will be formed through

which the wire passes; in the member J is secured a carbon M which projects outward into the opening L and is adapted to contact the wire upon one side. N is another carbon adapted to slide within an opening formed in the member I, and behind this carbon is placed a spring O which is interposed between said carbon, and a screw-threaded plug P threaded into the opening so that the carbon N will be held in spring contact with the wire upon the opposite side from the carbon M, and the tension of the contact can be regulated by the screw P. The contact faces of the carbons are slightly concaved so as to prevent the wire from escaping from between the same.

In Figs. 6 and 7 we have shown another modified form of positive contact which consists of two strips Q and R arranged one above the other, similar to the strips F and G of Figs. 2 and 3, and these strips also have notches or slots S formed therein so that when the two strips are placed together a circular opening will be formed through the end of the arm composed of the two strips. To each of the members Q and R are secured the springs T which contact the wire upon opposite sides and act as brushes to conduct the electricity from the wire to the strips. In all three forms of the traveling contacts here shown and described it will be seen that it is only necessary to separate the two members composing each of the traveling contacts, when said traveling contacts can be easily attached or detached from the wire.

Of course we do not wish to be limited to the exact construction here shown, as slight modifications could be made without departing from the spirit of our invention.

Having thus fully described our invention, what we claim as new and useful, is—

1. In combination with a conductor, a traveling contact having a perforation through which the conductor passes, means normally overlying the plane of the edge of the opening for engaging the conductor.

2. A traveling contact comprising coacting members having oppositely opposed recesses to receive a conductor and means normally overlying the plane of the edges of the recesses for engaging the conductor.

3. In combination with a conductor, a traveling contact having an opening through which the conductor passes, and spring means normally overlying the plane of the edge of the opening for engaging the conductor.

4. A traveling contact comprising coacting members having oppositely opposed recesses to receive a conductor, and springs normally overlying the plane of the edges of the recesses to engage the conductor.

5. A traveling contact comprising coacting members having oppositely opposed recesses to receive a conductor and yieldable

means normally overlying the plane of the edges of the recesses for engaging the conductor.

5 6. In combination with a conductor, a contact device adapted to travel with relation to the conductor, said contact device having means confining it against movement with relation to the conductor in a direction at right angles to the length of the conductor and two contacting and yielding means extending from the contact device to engage the conductor.

10 7. In combination with a conductor, a traveling contact device normally surrounding that portion of the conductor engaged by the contact device, and resilient means connecting with the conductor and carried by the contact device.

15 8. In combination with a conductor, a traveling contact device provided with confining walls normally surrounding the conductor at the point of contact and yielding means on the contact device extending approximately at right angles to the length of the conductor to engage the conductor.

20 9. In combination, a conductor, a traveling

contact having an opening through which the conductor passes and means yieldably extending from the contact beyond the plane of the edge of the opening to engage 30 the conductor.

10. In combination with a conductor, a traveling contact having a recess through which the conductor passes the contact having a guard for preventing displacement of 35 the conductor with relation to the contact.

11. In combination with an elevator, an electric conductor, a guide on the elevator comprising two superposed notched plates in which the notches coincide for receiving 40 the conductor, and a spring contact member on each plate between which the conductor has slidable contact, for the purpose described and shown.

In testimony whereof, we have hereunto 45 affixed our signatures in the presence of two subscribing witnesses.

SAMUEL S. WILLIAMSON.
BAINBRIDGE WILSON.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."