No. 674,858. Patented May 28, 1901.

J. TRIER.

CONTACT FOR CONTROLLERS OR REVERSING SWITCHES.

(Application filed Apr. 26, 1900.)

(No Model.)

Fig. 1.

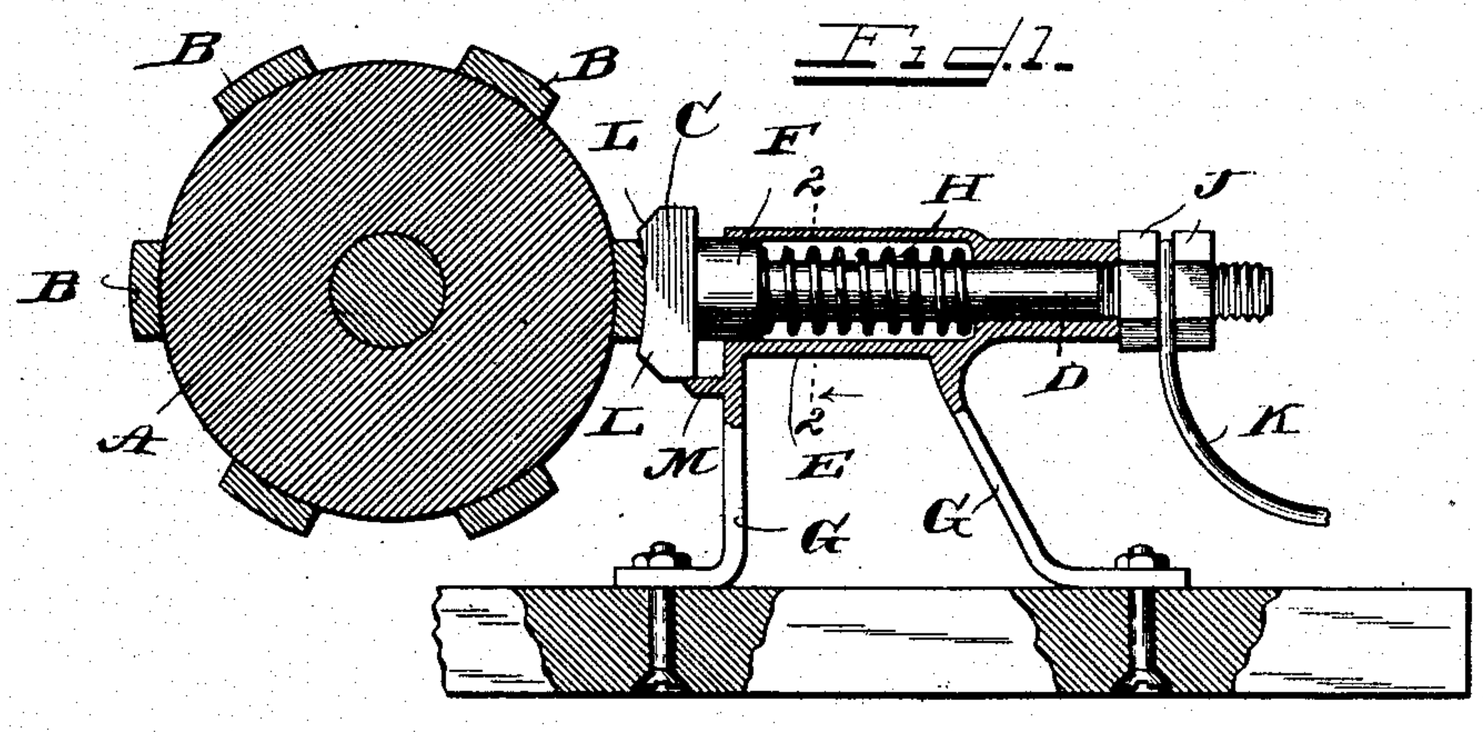


Fig. 3.

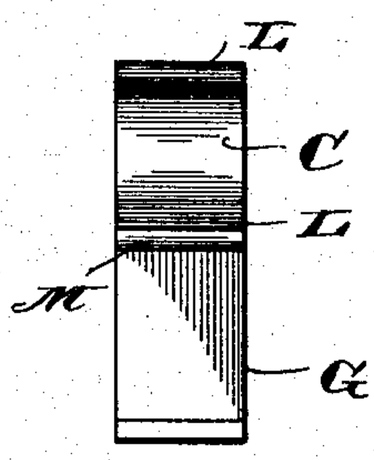


Fig. 2.

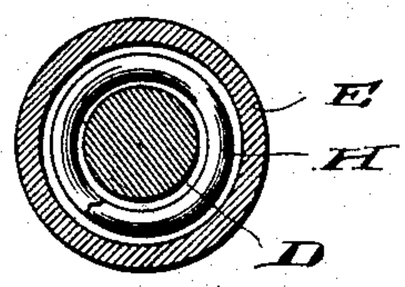
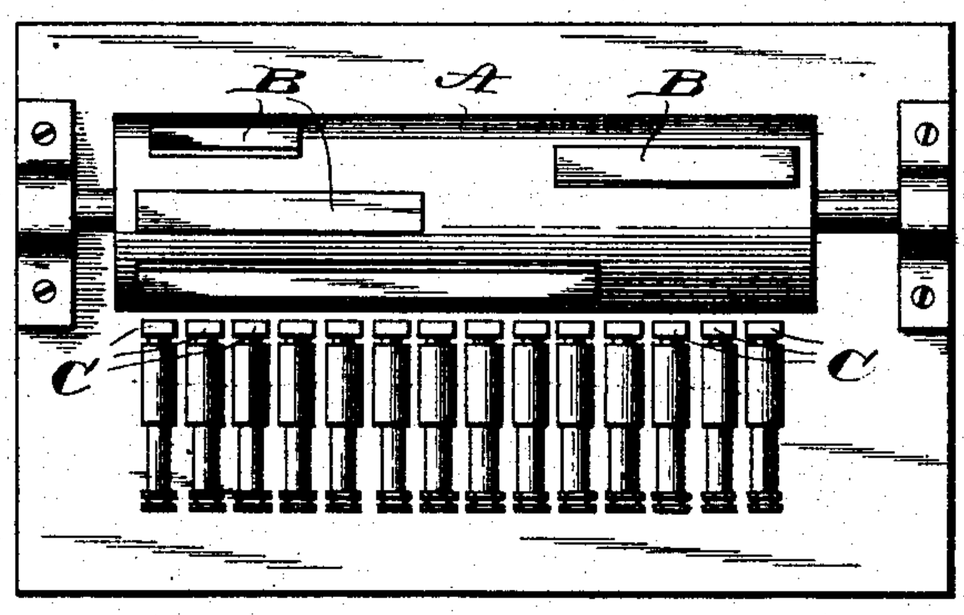


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN TRIER, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO DONALD GRANT, OF FARIBAULT, MINNESOTA.

CONTACT FOR CONTROLLERS OR REVERSING-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 674,858, dated May 28, 1901.

Application filed April 26, 1900. Serial No. 14,396. (No model.)

To all whom it may concern:

Be it known that I, JOHN TRIER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Contact for Controllers or Reversing-Switches, of which the following is a specification.

This invention relates to contacts for controllers or reversing-switches.

The object of the invention is to provide a simple, inexpensive, and efficient construction and arrangement of contacts for controllers, reversing-switches, and the like.

The invention consists, substantially, in the construction, combination, location, and arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the claims.

Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a view in end elevation of a controller or reversing-switch cylinder, showing in longitudinal section the application thereto of a contact constructed in accordance with my invention. Fig. 2 is a detail view in section on the line 2 2, Fig. 1, looking in the direction of the arrows. Fig. 3 is a detail view, in end elevation, of a contact and its support. Fig. 4 is a view in plan of a controller or reversing cylinder, showing the relative arrangement of the contacts.

The same part is designated by the same reference-sign wherever it occurs in the several views.

Reference-sign A designates a controller or reversing-switch cylinder, upon the surface of which are mounted and suitably arranged the contact strips or plates B. Arranged in suitable relation to the path traversed by the contact plates or strips B to coöperate therewith in effecting the desired circuit changes are the contacts C. It is exceedingly desirable in apparatus of this class to maintain the contacts in efficient contact with the strips or plates B when the cylinder A is rotated or rocked to bring said plates or strips into engagement with the contacts C. It is also desirable and important to provide for wear of the engaging surfaces of said contacts and plates or strips and to maintain an efficient contact notwithstanding such wear. Particularly are these results desirable in the use of controllers or reversing-switches upon automobiles or similar vehicles where by reason of rough places, street-car tracks, stones, and the like encountered by the vehicle-wheels jolts and jars are imparted to the entire vehicle-frame, which are transmitted to the motor-controller or reversing-switch, thereby rapidly destroying the efficiency of the contacts, causing objectionable sparking.

It is the special purpose of my invention to provide a construction of contacts for controller and reversing-switch cylinders which while adapted for use generally in this class of apparatus is particularly designed for use in connection with the controllers and reversing-switches of automobiles and similar vehicles; and my object is to provide such a construction and arrangement of contact as to maintain an efficient engagement thereof with the coöperating strips or plates of the cylinder notwithstanding the jolts or jars to which the vehicle is subjected. With this object and purpose in view each contact C is formed on or carried by a rod D, mounted to slide longitudinally in a casing E. This casing is mounted in a suitable bracket G, supported in convenient relation to the controller or reversing cylinder. The rod D is shouldered, as at F, and a spring H, preferably for convenience coiled about rod D, bears at one end against the shoulder F and at the other end against the casing E, the tension of said spring being constantly exerted to yieldingly maintain the rod D projected through the casing and in position for the contact C, carried thereby, to be held efficiently in contact with a strip or plate B on the cylinder A or in position to be engaged by such strips or plates when the cylinder is rotated. The outer end of rod J is screw-threaded, and suitable nuts J, mounted thereon and bearing against the casing E, serve to adjust the tension of spring H and to regulate and adjust the extent of projection of the contact C toward the path traversed by the strips or plates B. These nuts also form means of attachment of the conducting-wire K.

In practice the contact-blocks C are maintained projected slightly inside the circular path described by the plates or strips B when cylinder A is rotated, and in order that an easy engagement of said plates or strips with said contact-block may be effected the corners or edges of the contact-block may be beveled off, as clearly indicated at L, Figs. 1 and 3. Thus when the cylinder A is rotated the strips or plates engage the beveled surfaces L of the contact-blocks and press the same back against the tension of springs H, thereby establishing and maintaining a most efficient electrical contact, which is not disturbed or destroyed by the jerks and jolts to which the vehicle is subjected.

In order that in the projecting movements of the contact-blocks C said blocks may be held against axial displacement, I arrange a shelf or ledge M upon the bracket G, which supports the casting E, or in other suitable relation, and which is engaged by the flat side of the contact-block, thereby grinding the same and holding it against axial rotation. (See Figs. 1 and 3.)

It is obvious that many variations and changes in the details of construction and arrangement would readily occur to persons skilled in the art and still fall within the spirit and scope of my invention. I do not desire, therefore, to be limited or restricted to the exact details of construction shown and described; but,

Having now set forth the object and nature of my invention and a construction embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent, is—

1. The combination with a controller carrying contact-plates of a casting, a rod supported in said casting for longitudinal movement therein, means for adjusting the extent of such longitudinal movement, said rod provided with a shoulder, a coöperating contact carried by said rod and a spring bearing at one end against said shoulder and at the other end against said casting to yieldingly project said coöperating contact to the extent of the adjustable limit thereof into the path of said controller contact-plate, as and for the purpose set forth.

2. The combination with a controller carrying contact-plates, a longitudinally-movable rod having a shoulder, a spring bearing against said shoulder and operating to yieldingly project said rod longitudinally, means for adjustably limiting the longitudinal movement of said rod and a coöperating contact carried by the projecting end of said rod, as and for the purpose set forth.

3. The combination with a controller carrying contact-plates, a longitudinally-movable rod carrying a coöperating contact, said coöperating contact having beveled corners, a spring operating on said rod to yieldingly project said coöperating contact within the path traversed by said contact-plates and adjusting-nuts for adjustably regulating the extent of longitudinal projection of said rod, as and for the purpose set forth.

4. The combination with a controller carrying contact-plates, a longitudinally-movable rod carrying a coöperating contact, a spring operating on said rod to yieldingly project said coöperating contact into the path of movement of said controller-plate, means for adjustably limiting the extent of projection of said rod and a guide with which said coöperating contact engages for preventing the axial displacement of said coöperating contact, as and for the purpose set forth.

5. The combination with a cylinder having contact-plates, a longitudinally-movable rod carrying a coöperating contact, a support for said rod, said support provided with a ledge or shelf arranged to engage and guide said coöperating contact and prevent axial displacement thereof, and a spring operating on said rod to yieldingly project said coöperating contact into the path of said contact-plates, as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 10th day of March, 1900, in the presence of the subscribing witnesses.

JOHN TRIER.

Witnesses:
E. C. SEMPLE,
S. E. DARBY.