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Patented Apr. 2, 1901.

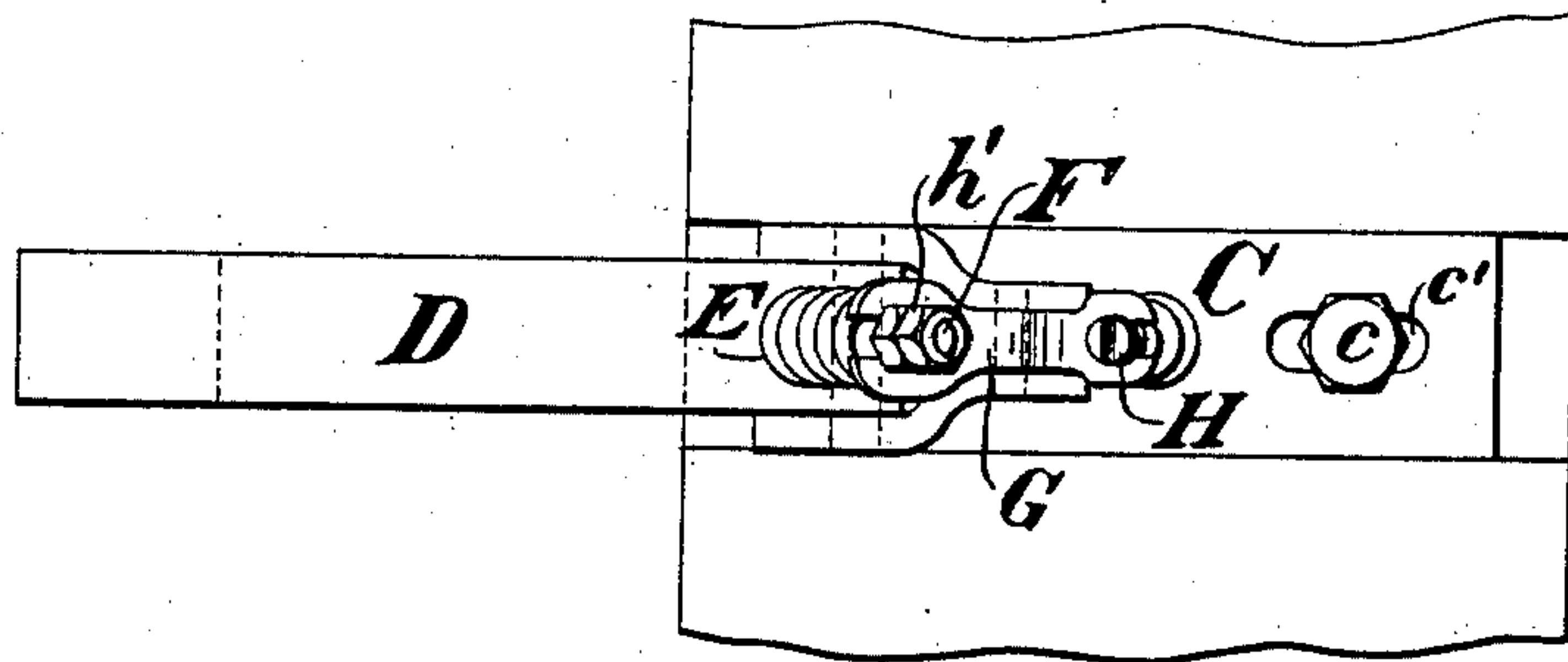
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CONTACT FINGER FOR ELECTRIC MOTOR CONTROLLERS.

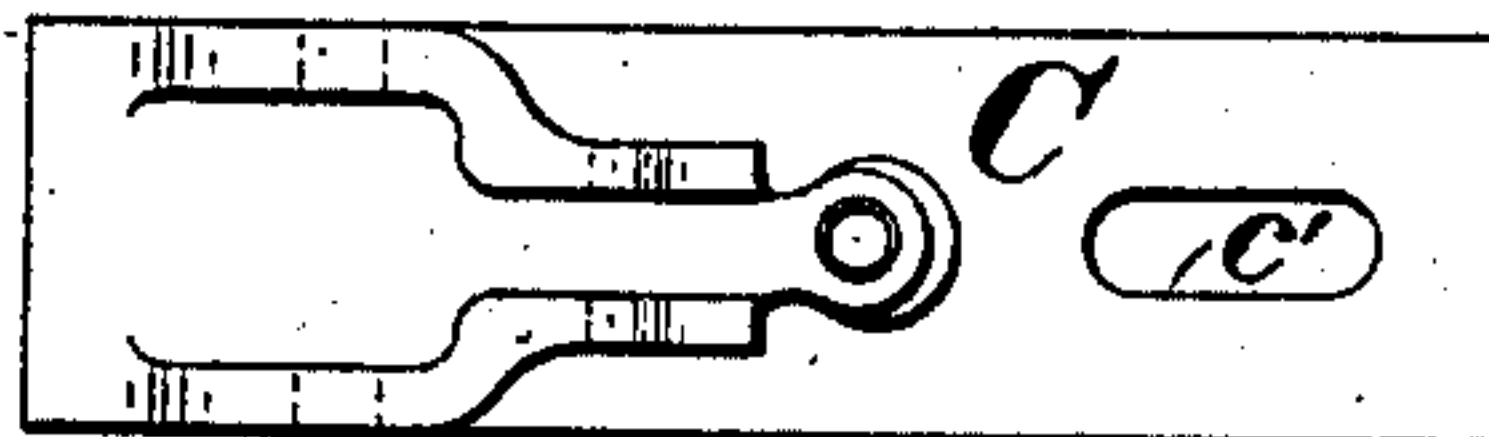
(Application filed July 24, 1900.)

(No Model.)

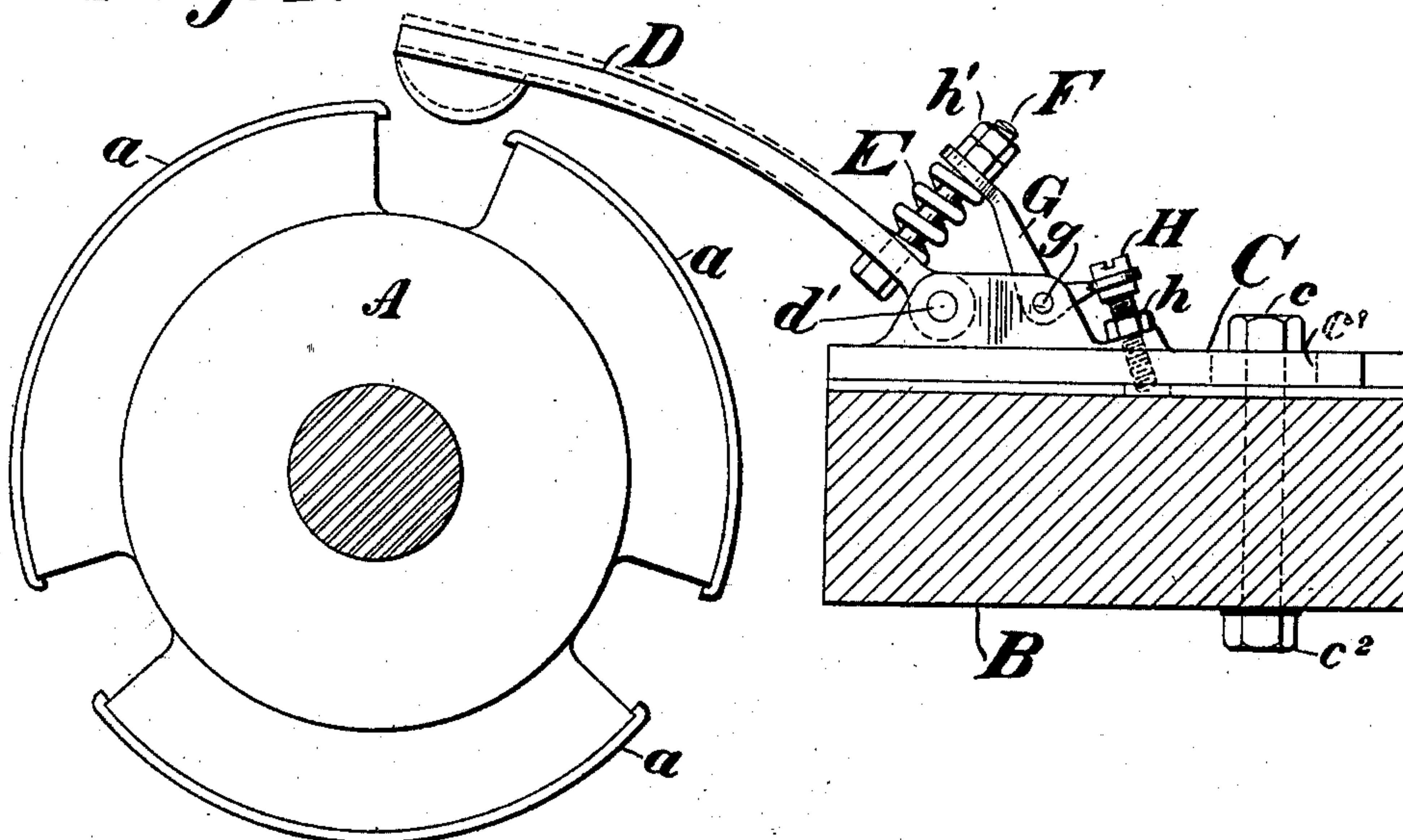
*Fig. 1.*



*Fig. 3.*



*Fig. 2.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## CONTACT-FINGER FOR ELECTRIC-MOTOR CONTROLLERS.

SPECIFICATION forming part of Letters Patent No. 671,079, dated April 2, 1901.

Application filed July 24, 1900. Serial No. 24,659. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK W. GARRETT, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Contact-Fingers for Electric-Motor Controllers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to an adjustable contact-finger for electric-motor controllers and is designed to provide means whereby such fingers may be given any desired initial spring-tension and then be adjusted from time to time to compensate for wear of the contact-surfaces without affecting such initial tension, means being also provided whereby the tension can, if necessary, be changed at any time. As these fingers have ordinarily been arranged any change in the adjustment of the finger to compensate for wear is effected through the finger-spring, which must be put under greater or less tension, according to its arrangement, to adjust the contact end of the finger. Consequently if the springs are given initially just the proper tension to secure the best operation after a little adjustment for wear there is either too much or too little tension. This I design to overcome by my invention. I accomplish this object by providing means for effecting an adjustment of the fingers independently of the springs and without affecting their tension, all as hereinafter fully described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a controller-finger embodying my invention; Fig. 2, a horizontal section of a portion of a controller, and Fig. 3 a detail view of the finger-base.

The letter A designates a controller device of the usual cylinder or mutilated cylindric type carrying contact-pieces *a*. B designates the finger-board of the controller, which is of wood or other insulation material.

C is the finger-base, which consists of a plate or block of metal secured to the board B by a bolt *c*. The plate is slotted at *c'* to

permit endwise adjustment on the board B when the nut *c*<sup>2</sup> of the bolt *c* is slacked.

D is the contact-finger carrying the contact tip or button *d*. This finger is designed to be rigid in so far as any inherent elasticity is concerned. It is pivoted at *d'* to the base C and receives its proper tension by means of a spring E. This spring is coiled around a bolt F, which is loosely secured in said finger near the pivot *d'*, one end of the spring bearing against the finger and the other end against the longer arm of a small angle-lever or bell-crank G, which engages the end of said bolt. Said angle-lever or bell-crank is pivoted to the base C at *g* and its shorter arm is slotted at its extremity and engages the head of an adjusting-screw H, which is tapped into said base.

*h* is a check-nut for securing the adjustment of said screw, and *h'* represents jam-nuts which secure the longer arm of the lever G on the bolt F and also the tension of the spring E. By means of these nuts any desired degree of tension may be given the spring.

It will be readily seen that the "dip" of the finger with respect to the contacts *a* depends upon the adjustment given the screw H. In Fig. 2 the amount of this dip is represented by the distance between the full and dotted lines. To keep this dip constant notwithstanding wear and without increasing the initial spring tension, all that is necessary is to "slack up" on the screw H from time to time, according to the degree of wear.

I do not wish to limit myself to the exact construction, arrangement, and combination of parts which I have herein shown and described, as modifications may be made in the details thereof without departing from the scope of my invention as it is set forth in the following claims.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a controller, the combination with a movable member having segmental contacts, of a contact-finger having a pivoted movement toward and away from the axis of said movable member, a spring acting to limit said movement in one direction, and a finger-



adjusting device which limits its movement in the opposite direction.

2. In a controller for electric motors, a pivoted contact-finger, a spring for imparting tension thereto, and means for adjusting said finger on its pivot to move its contact end radially toward or away from the controller-drum without changing the tension of said spring.

3. In a controller for electric motors, a finger-board, a finger-base secured thereto, a contact-finger pivoted to said base, a spring acting on said finger to hold it to its work, and a device also secured to said base for adjusting said finger on its pivot independently of the spring, to move its contact end radially toward and away from the axis of the controller-drum.

4. In a controller, a finger-base, a contact-finger pivoted thereto, an adjusting device also pivoted to said base, and connected to said finger, a spring interposed between said finger and one arm of the adjusting device, and an adjusting-screw engaging the other arm of said device.

5. In a controller, a finger-base, a contact-finger pivoted thereto, an angle-lever also pivoted to said base, a stud or bolt secured to said finger and engaged by one arm of said lever, a spring on said bolt between the said

finger and arm, and an adjusting-screw engaging the other arm of said lever.

6. The combination of a pivoted contact-finger without substantial inherent elasticity, a bolt or stud loosely engaging the same near its pivot, an angle-lever having one arm engaging the said bolt, a spring on said bolt between the contact-finger and the lever-arm, and an adjusting-screw engaging the other arm of said lever.

7. The combination of a pivoted contact-finger without substantial inherent elasticity, a bolt or stud loosely engaging the same near its pivot, an angle-lever having one arm engaging the said bolt, a spring on said bolt between the contact-finger and the lever-arm, and an adjusting-screw engaging the other arm of said lever, together with means for adjusting the tension of said spring.

8. The combination of a rigid contact-finger D, pivoted at its inner end, the bolt F engaging said lever, the spring E, angle-lever G and adjusting-screw H, substantially as described.

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

F. W. GARRETT.

Witnesses:

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