No. 676,098. Patented June 11, 1901.

P. R. PAPIN.

ELECTRICAL CONTACT MAKING DEVICE.

(Application filed Sept. 24, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

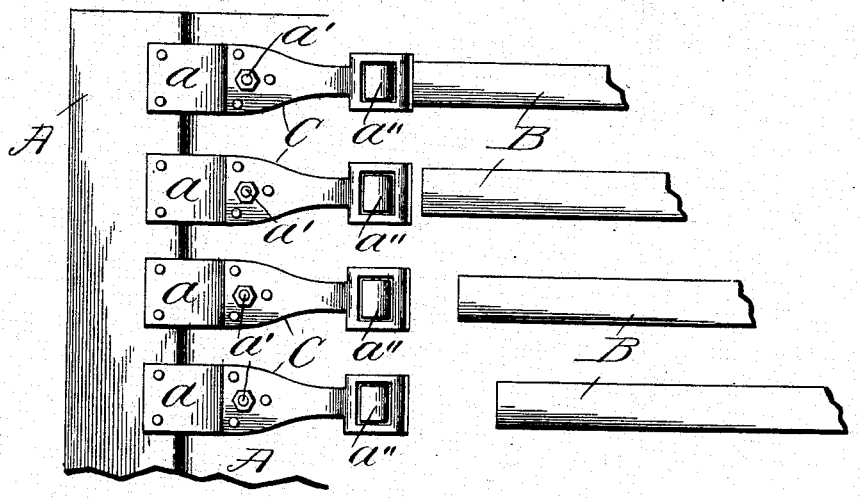


Fig. 2.

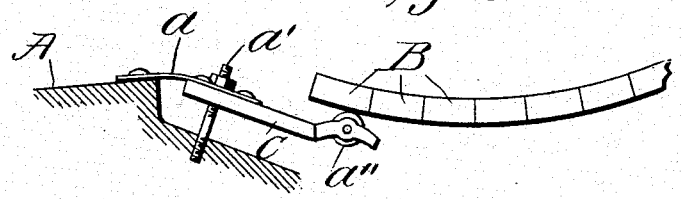
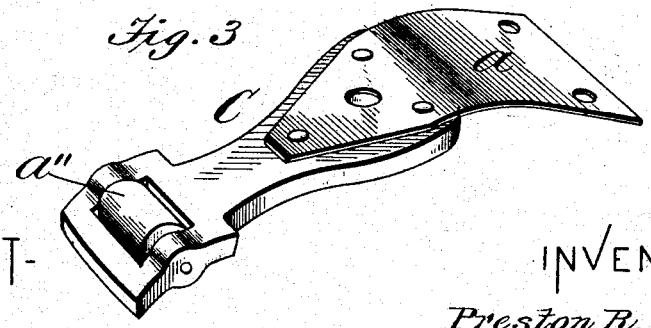


Fig. 3



ATTEST.

Harry L. Ames.

Wm. A. Scott.

INVENTOR.

Preston R. Papin

By Bakewell & Cornwall

Atty's.

No. 676,098. Patented June 11, 1901.

P. R. PAPIN.

ELECTRICAL CONTACT MAKING DEVICE.

(Application filed Sept. 24, 1900.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 4.

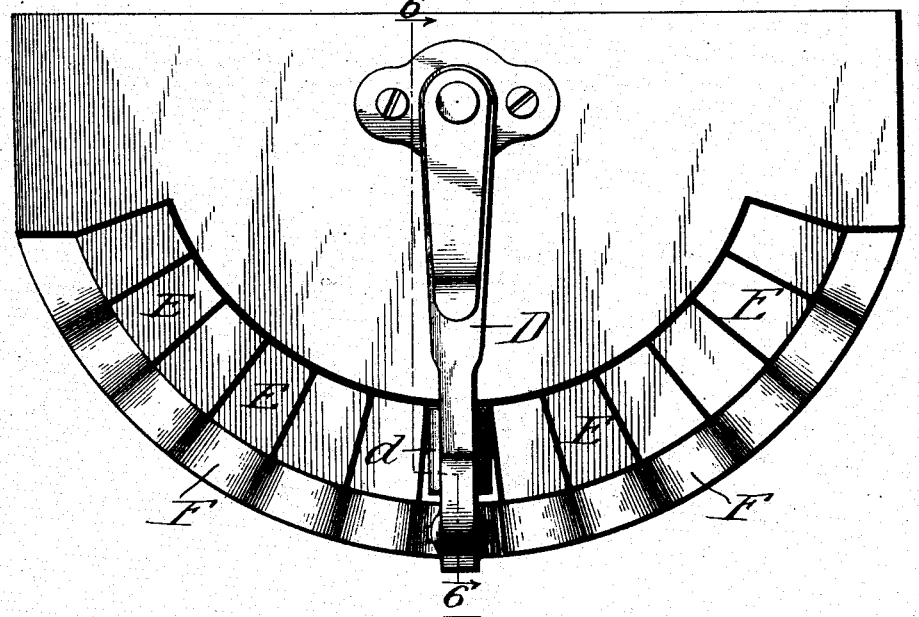


Fig. 5.

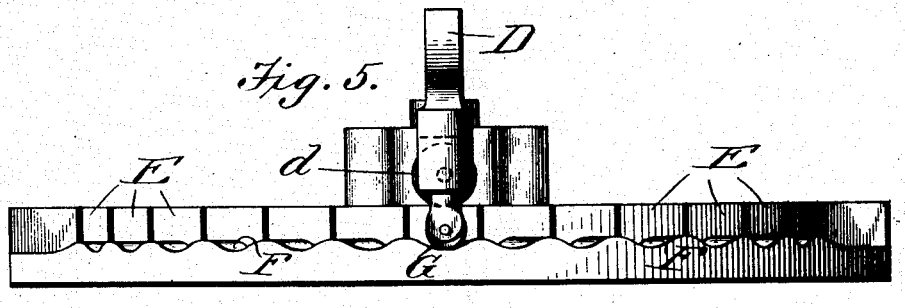
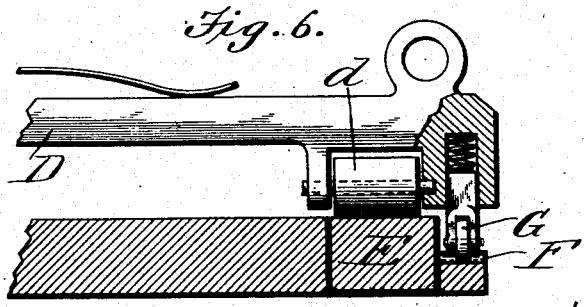


Fig. 6.



ATTEST-

Harry L. Amer.

Wm. H. Scott

INVENTOR.

Preston R. Papin.

By Bakewell & Cornwall

Atty's.

UNITED STATES PATENT OFFICE.

PRESTON R. PAPIN, OF ST. LOUIS, MISSOURI.

ELECTRICAL CONTACT-MAKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 676,098, dated June 11, 1901.

Application filed September 24, 1900. Serial No. 30,905. (No model.)

To all whom it may concern:

Be it known that I, PRESTON R. PAPIN, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Electrical Contact-Making Devices, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

This invention relates to a new and useful improvement in electrical contact-making devices designed particularly for use in connection with "comptrollers," as they are called, such as are commonly employed in connection with street-railway systems.

The object of the invention is to save the wear and tear on contact-making devices, whereby a longer life of the apparatus is insured, and repairs and adjustments thereof are consequently less frequent.

With this object in view the invention consists in the arrangement, construction, and combination of the several parts, all as will be hereinafter described, and afterward pointed out in the claims.

In the drawings, Figure 1 is a detached elevational view illustrating my improved contact-making device, showing the relation of the switch-segments thereto. Fig. 2 is a top plan view of the same. Fig. 3 is a detail view of one of the contact-making devices. Fig. 4 is a top plan view of the switchboard of an ordinary rheostat. Fig. 5 is an elevational view thereof, and Fig. 6 is an enlarged cross-sectional view on line 6 6, Fig. 4.

A indicates a support upon which my improved contact-making devices are mounted, as usual, and B indicates the movable segments which are designed to travel in the path common to their respective contact-making devices.

Heretofore these contact-making devices C have consisted of a brass spring-mount *a* and a copper wearing-shoe, which made a rubbing contact with its respective segment, an adjusting-screw *a'* being employed to regulate the amount of pressure of said wearing-shoe upon its respective segment. In actual practice these shoes wear to a considerable extent and have to be constantly adjusted, their life being usually six weeks, thus necessitating renewal at the end of this period.

My invention consists in mounting a roller *a''* in the wearing-shoe, which roller is designed to contact with its segment and in this manner establish electrical connection without subjecting the parts to considerable wear. I have found that a rolling contact will answer as well as a rubbing contact, in addition to which a considerable amount of pressure may be exerted upon the roller to make close contact with its segment without materially augmenting the power that is required to actuate the movable segments into and out of operative relation to their respective rollers.

In Figs. 4 to 6 I have shown a switchboard of an ordinary rheostat, in which a spring-pressed switch-arm D carries a roller *d*, designed to coöperate with the several concentrically-arranged segments E. In order to arrest and hold the switch-arm in a desired position, I provide a notched track F in juxtaposition to the segment, with which cooperates a spring-pressed roller G, mounted in the end of the switch-arm, the shank of said roller being, preferably, non-circular in cross-section, whereby the roller is permitted to move vertically in riding over the track, but is held against relative displacement.

I am aware that minor changes in the arrangement, construction, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

1. In an electrical contact-making device, the combination with the spring *a*, an adjusting-screw *a'* for adjusting the position of the contact-roller, a body portion C on the free end of said spring, and a contact-roller *a''* mounted in said body portion; substantially as described.

2. The combination with a spring-pressed arm, of a roller mounted in the free end thereof, terminal plates in the path of said roller, a notched track in juxtaposition to said terminal plates, and a spring-pressed

roller mounted in said arm and coöperating with said notched track; substantially as described.

3. The combination with a spring-pressed rotatable arm, of a roller mounted in its free end, a concentric series of terminal plates in the path of said roller, a notched plate in juxtaposition thereto, a spring-pressed roller mounted in the end of said arm and having an independent vertical movement relative thereto, said roller coöperating with said notched track, and means for holding said roller against displacement without interfering with its vertical movement; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 22d day of September, 1900.

PRESTON R. PAPIN.

Witnesses:
WM. H. SCOTT,
A. S. GRAY.