No. 811,673. PATENTED FEB. 6, 1906.

M. ST. CLAIR.

ELECTRICAL BRUSH HOLDER.

APPLICATION FILED MAR. 27, 1905.

Fig. 1

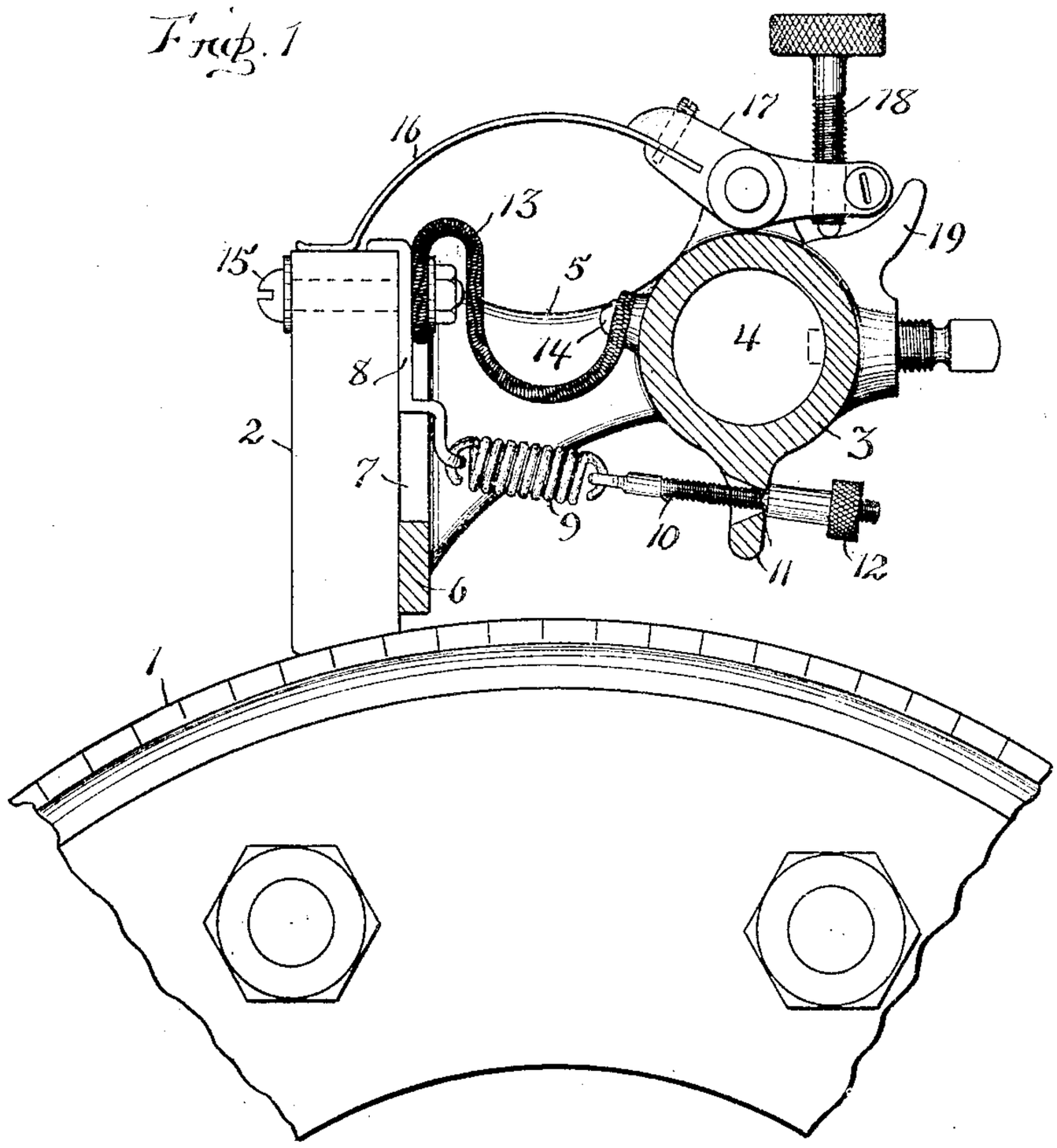



Fig. 2.

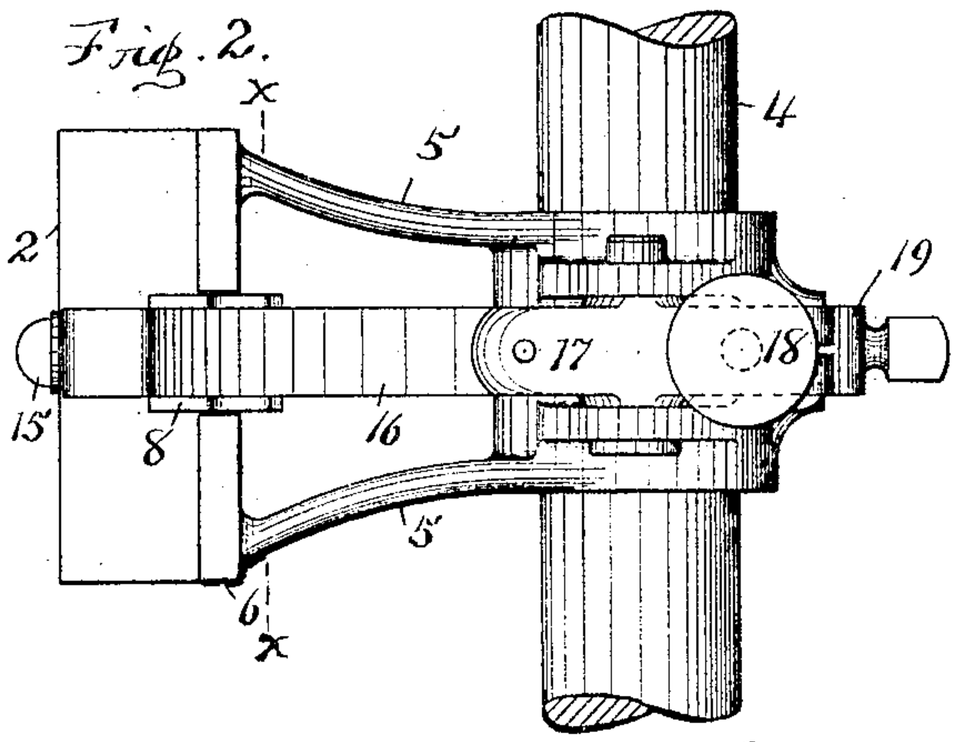
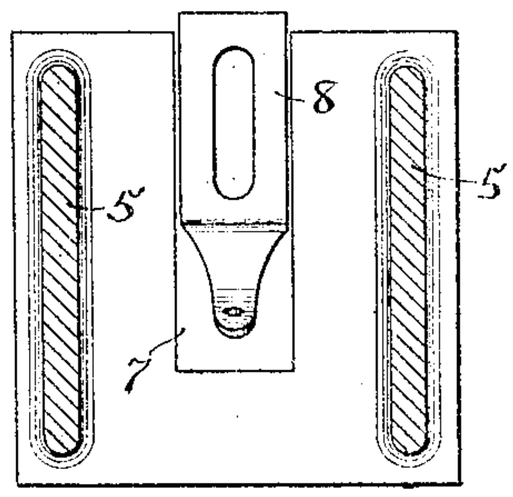



Fig. 3.




WITNESSES:

J. M. Dickens.

Herman J. Lamprecht.

Moffat St Clair INVENTOR.

BY A. J. Burns

ATTORNEY.

# UNITED STATES PATENT OFFICE.

MOFFAT ST. CLAIR, OF FORT WAYNE, INDIANA.

## ELECTRICAL BRUSH-HOLDER.

No. 811,673. Specification of Letters Patent. Patented Feb. 6, 1906.

Application filed March 27, 1905. Serial No. 252,155.

*To all whom it may concern:*

Be it known that I, MOFFAT ST. CLAIR, a subject of the King of Great Britain, and a resident of Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Electrical Brush-Holders, of which the following is a specification.

This invention relates to improvements in commutator-brush holders; and the object thereof is to provide a construction which will preserve the relation between the wearing-surface of the brush and the contact-surface of the commutator and at the same time afford movement of the brush to compensate for wear incidental to frictional engagement between the brush and commutator.

The above object is accomplished by the construction illustrated in the accompanying drawings, in which—

Figure 1 is an end view of a portion of a commutator with a brush in contact therewith and with the holder in vertical section. Fig. 2 is a plan of the holder with the brush in connection therewith, and Fig. 3 is a cross-sectional view of the holder on the line *x x* of Fig. 2.

Referring now to the numerals of reference, 1 is a commutator of an electrical machine, and 2 is a commutator-brush or contact carbon of ordinary type. The holder comprises a casting 3, which is mounted upon a supporting-stud 4 and has arms 5, at the outer end of which is a rest 6, the latter having an elongated slot 7.

The brush 2 has secured thereto a contact-plate 8, the upper end of which extends partially over the top of the brush and the lower end of which is crooked inward and connected with a retracting-spring 9. The said contact-plate 8 ranges within the slot 7 and serves to guide the brush in its movement toward the commutator. The said retracting-spring 9 has connected therewith a screw-threaded stem 10, which extends through a perforated lug which depends from the casting 3, and an adjusting-nut 12 on the extending end of said stem serves to adjust the tension of said spring 9, which thereby holds the brush 2 against the rest 6 with more or less force, according to the adjustment of the nut 12.

An electrical conductor 13 is connected at one of its ends to the casting 3 by means of a screw 14, and its other end is bound to the contact-plate 8 by means of a bolt 15, which serves also to hold said contact-plate and brush together.

A spring 16 is fixed in one end of a rocking lever 17 and with its free end resting upon the top of the brush 2. In the end of the rocking lever opposite the spring 16 is an adjusting-screw 18, which acts against a curved lug 19, which projects from the casting 3. The said lug is so disposed that when the lever 17 is adjusted the lower end of the adjusting-screw 18 will follow the curved upper surface thereof and rest thereon, and by this means the lever will become moved in successive stages directly with each turn of the adjusting-screw, and thereby more or less pressure will be exerted upon the brush 2 by the spring 16, which will accordingly have the effect of holding the brush 2 in contact with the commutator. By this arrangement the entire contact-surface of the brush will be held positively against the adjacent face of the commutator regardless of the disintegration of the brush which is due to wear, and it will be obvious that the electrical current conducting efficiency between the commutator and brush will thereby be enhanced.

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

1. In a commutator-brush holder, a supporting-casting having in connection therewith a rest; a guide-slot in said rest; a contact-plate in connection with a brush, the former ranging in said slot, and the latter seated upon said rest; a retracting-spring having connection with said casting, and also with said contact-plate, and acting to hold the brush against said rest; and an adjustable spring acting against the top of the brush to hold the same in contact with the commutator.

2. In a commutator-brush holder, a supporting-casting having in connection therewith a rest; a commutator-brush; a contact-plate in fixed relation with the brush; tension means in connection with the casting and contact-plate to hold the brush against the rest; and an adjustable spring acting to hold the brush into contact with the commutator.

3. In a commutator-brush holder, a supporting-casting having a rest with a guide-slot therein; a commutator-brush seated against the rest and having means in connection therewith which extends into said slot to guide the brush; and two adjustable springs,

one acting to hold the brush on said rest and the other to press the brush into contact with the commutator.

4. In a commutator-brush holder, a supporting-casting having in connection therewith an adjustable commutator-brush; a rocking lever pivoted on said casting, one end of the lever having means in connection with the brush to act against the latter to hold it into contact with the commutator, the opposite end of the lever having an adjusting-screw; and an upwardly-curved lug, in connection with the casting, affording a rest for the end of said adjusting-screw.

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

MOFFAT ST. CLAIR.

Witnesses:

LEVIS S. FOX,

J. W. DICKENS.