Sept. 1, 1925.

1,552,256

A. C. WOOD.

COMMUTATOR

Filed Oct. 20, 1924

Fig 1.

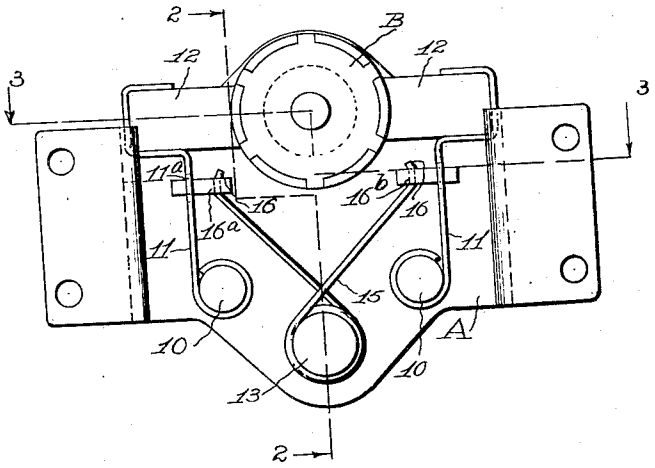


Fig 2.

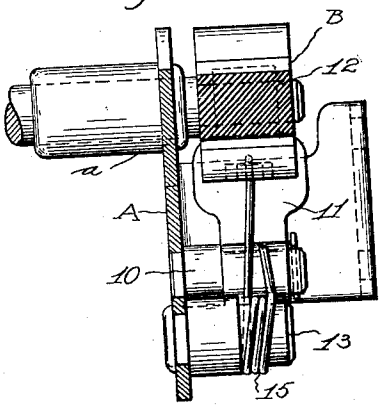
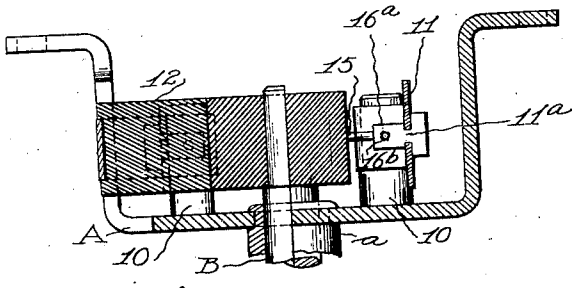


Fig 3.



Witness
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Patented Sept. 1, 1925.

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UNITED STATES PATENT OFFICE.

ANDREW C. WOOD, OF CHICAGO, ILLINOIS, ASSIGNOR TO STEWART-WARNER SPEEDOMETER CORPORATION, OF CHICAGO, ILLINOIS, A CORPORATION OF VIRGINIA.

COMMUTATOR.

Application filed October 20, 1924. Serial No. 744,614.

To all whom it may concern:

Be it known that I, ANDREW C. WOOD, a citizen of the United States, residing in the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Commutators, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide an improved construction of a commutator for causing the two brushes to be held to the rotor with equal pressure under all conditions. It consists in the elements and features of construction shown and described as indicated in the claims.

In the drawings:

Figure 1 is an elevation of a commutator embodying this invention shown fully mounted on a bracket for carrying it.

Figure 2 is a section at the line, 2—2, on Figure 1.

Figure 3 is a section at the line, 3—3, on Figure 1.

In the drawings A is a bracket mount for the rotor and brushes of the commutator. B is the rotor element journaled in the mount at *a*. The mount has projecting at the side at which the rotor is positioned studs, 10, 10, affording pivotal support for the lever arms, 11, 11, which carry the commutator brushes, 12, 12, respectively, said lever arms being formed of metal plate folded for their pivotal engagement with the studs and for clasping and holding the commutator brushes as seen most clearly in Fig. 1. The mount, B, has a third rigid stud, 13, projecting from the same face as the studs, 10, in a plane intermediate between and parallel to the planes in which the lever arms, 11, 11, extend for carrying the brushes; this stud, 13, affords pivotal support for a spring member, 15, which is coiled about said stud as seen in Fig. 2, and has its offset end portions, 16, 16, crossed and extending divergently toward the rotor, B, for connection of said divergently extending ends respectively with the lever arms, 11, which carry the commutator brushes, 12, 12, respectively. The connection of the spring arms with the lever arms respectively is made by links, 16, 16, each in the form of a T-shaped stamping, the stem of the T being inserted through an aperture, 11^a, in the arm, 11, the cross head, 16^a, being stopped on the outer side of the brush-carrying arm, the ends of the divergent arms of the spring being hooked into apertures, 16^b, in the stem of the T, all as may be clearly understood from Fig. 1.

It will be understood from inspection of the construction as above described, that both brushes are stressed against the rotor by the same tension, namely, that of the coiled spring member, 15; that the lever length of the diverging end portions of the spring being the same, and the lever length of the brush carrying lever arms being the same, and the link, 16, connecting the spring ends with the lever arms at the same distance from the fulcrums of the lever arms on the studs, 10, the brushes will at all times experience equal pressure from the spring for holding them in contact with the rotor.

I claim:—

1. In a commutator in combination with a rotor and brush and a mount for the same, brush carrying arms pivoted on the mount, a spring attached to the mount and connections therefrom to the brush carrying arms respectively, said connections and their engagement with the brush carrying arms being adapted for transmitting the stress of the spring with equal advantage of leverage to the brushes respectively.

2. In a commutator, in combination with the rotor and brushes and a mount for the same, lever arms carrying the brushes pivoted on the mount, the mount having a pivot stud offset laterally from the diametric plane of the rotor in which the brushes are positioned; a spring coiled about said stud and having its opposite end portions extended therefrom and connected respectively to the two brush carrying lever arms for stressing the brushes oppositely toward the rotor.

3. In the construction defined in claim 1 foregoing, the brush-carrying lever arms being extended at the same side of the diametric plane of the rotor in which the brushes are positioned, and the spring-carrying pivot stud being in a plane intermediate the planes in which said arms extend from their pivots to the brushes respectively.

4. In the construction defined in claim 1 foregoing, the brush carrying lever arms being extended at the same side of the diametric plane of the rotor in which the brushes are positioned, the spring-carrying

pivot stud being in a plane intermediate the planes in which said arms extend from their pivots to the brushes respectively, said spring end portions being extended from the coils crossing each other for reaching their respective brush arm connections.

5. In the construction defined in claim 1, foregoing, the brush-carrying lever arms being extended at the same side of the diametric plane of the rotor in which the brushes are positioned, the spring-carrying stud being in a plane intermediate the planes in which said arms extend from their pivots to the brushes respectively, the spring arms being connected to the brush-carrying lever arms respectively, by links engaged with the respective spring arms and lever arms, said spring arms being equal and the link connections to the lever arms being at equal distance from the pivots of said lever arms respectively and from the brushes respectively.

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this 17th day of October, 1924.

ANDREW C. WOOD.