

(No Model.)

H. H. BLADES.  
COMMUTATOR BRUSH HOLDER.

No. 459,739.

Patented Sept. 22, 1891.

Fig. 1.

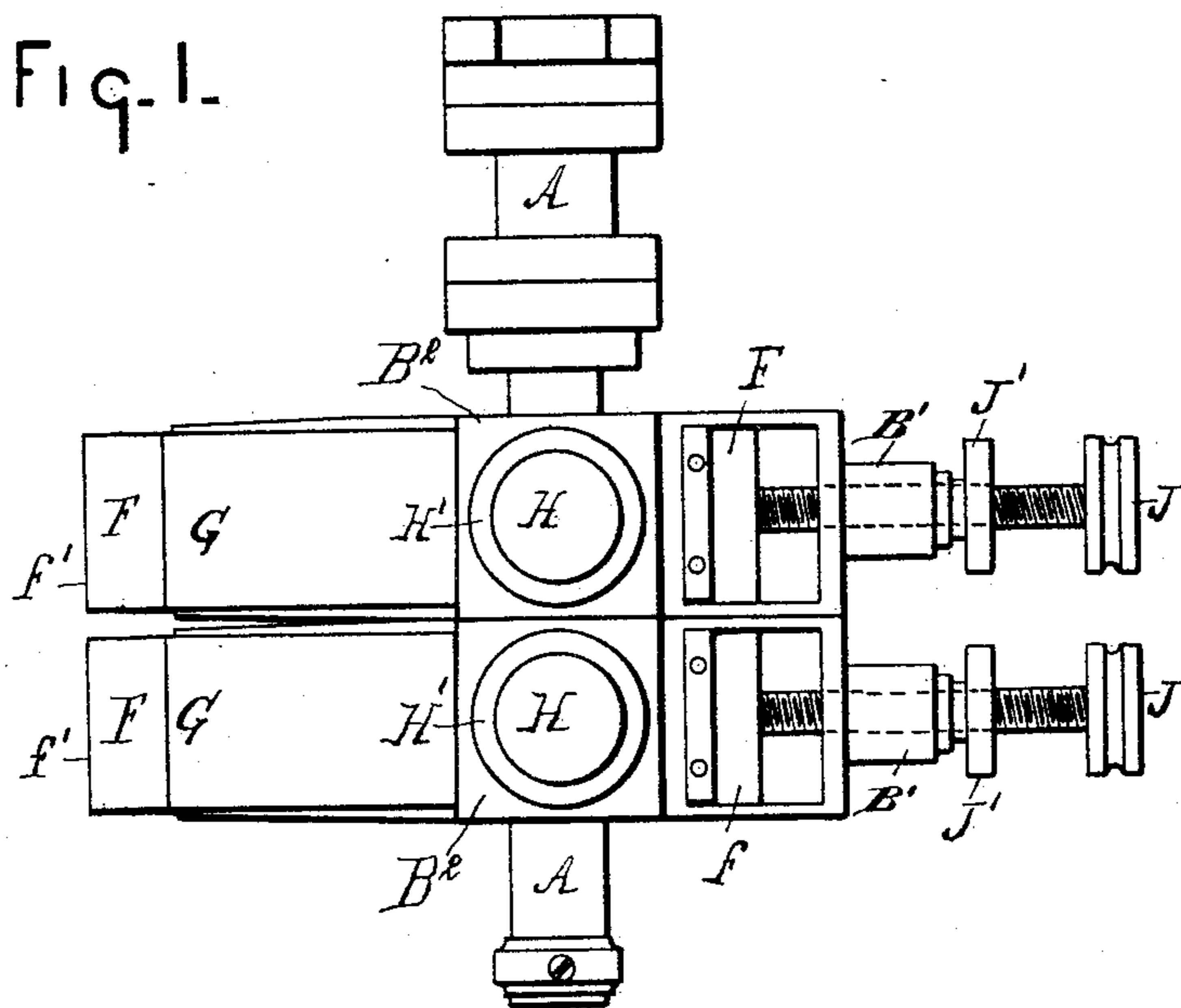
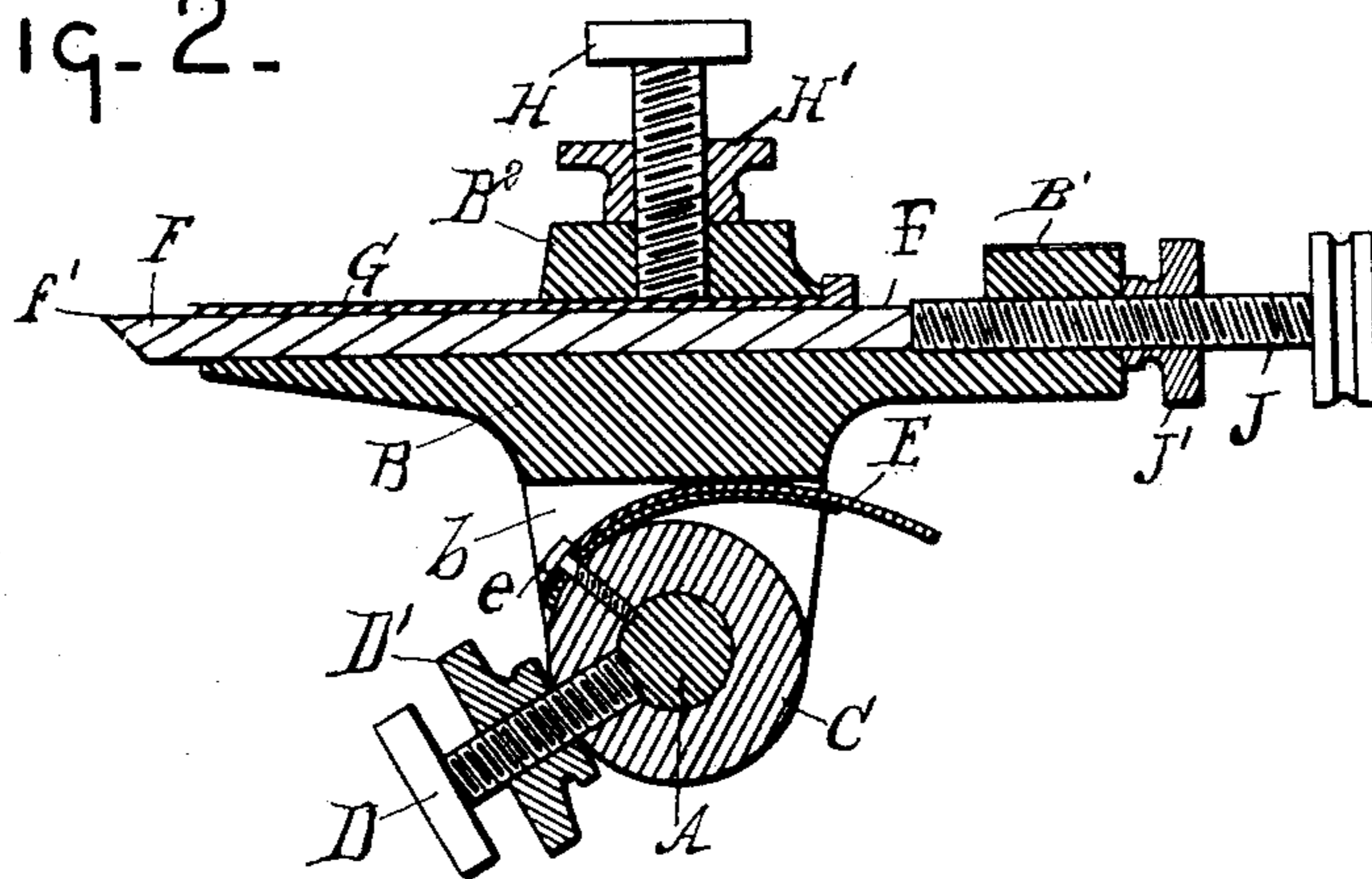


Fig. 2.



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# UNITED STATES PATENT OFFICE.

HARRY H. BLADES, OF DETROIT, MICHIGAN.

## COMMUTATOR-BRUSH HOLDER.

SPECIFICATION forming part of Letters Patent No. 459,739, dated September 22, 1891.

Application filed June 12, 1890. Serial No. 355,208. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY H. BLADES, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Commutator-Brush Holders; and I declare the following to be a full, clear, and exact description of the invention, such as it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention has for its object to provide a novel, simple, economical, and efficient holder for commutator-brushes; and to such end it consists in the features of construction, and the combination or arrangement of devices, hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 represents a plan view of two holders located side by side. Fig. 2 is a side elevation of the same with parts in section.

In carrying out the invention, A represents the shaft on which the holders are located, and which is supported by any suitable framework.

B is the holder-block, loosely journaled on the shaft by the lugs *b*, which extend down from its under side and embrace the shaft. The holder-block B is formed with a plain horizontal upper surface, over which extends a bridge-piece B<sup>2</sup>. The carbon F is adapted to slide upon the plain upper surface of the holder-block under the bridge-piece B<sup>2</sup>, and the holder-block is formed at one end with an upwardly-projecting lug B', containing a screw-threaded orifice, with which engages a set-screw J, that bears at its inner end against one extremity of the carbon F for the purpose of advancing the carbon when occasion demands. A lock-nut J' on the set-screw J bears against the lug B' and serves to lock the set-screw in its adjusted position. The bridge-piece B<sup>2</sup> is provided with a central screw-threaded socket, with which engages a set-screw H, bearing at its inner end against a metallic spring-plate G, that rests upon the upper side of the carbon F, whereby the carbon can be rigidly clamped in a fixed position between the upper plain surface of the holder-block B and the spring metal plate G. A

lock-nut H', arranged on the set-screw H, is adapted to bear against the bridge-piece B<sup>2</sup> for the purpose of locking such set-screw in its adjusted position. By this construction the set-screw H and spring metal plate G serve to clamp the carbon upon the plain upper surface of the holder-block, while the set-screw J, engaging the lug B', operates as an abutment for one extremity of the carbon F, and also fulfills the conditions required to advance the carbon when the set-screw H is loosened. Between the lugs *b* is located the block or collar C, also loose on the shaft, but adapted to be keyed thereto by the set-screw D. This set-screw is provided with the lock-nut D', whereby it may be locked in place when the collar has been properly set on the shaft. E are leaf-springs, one end being engaged to the collar C by the set-screw *e*, while the outer ends bear upon the block B and exert a pressure thereon. Now, as will be seen, by loosening the set-screw D and revolving the block C the tension of the springs may be regulated and any desired pressure be brought against the block B. The pressure exerted by the end *f'* of the carbon-piece upon the commutator may be regulated by the position of the block C. Thus to increase the tension the set-screw D may be loosened, the block C revolved until the spring E exerts a greater pressure on the block, and then set in this position. By this construction the operator can at any time, by a downward pressure on the rear end of the block B adjacent to the set-screw J, raise the end *f'* of the carbon-piece off from the commutator, and on releasing the block the spring acts at once to return the carbon to the commutator. So, also, if desired, to permanently throw the carbon-piece away from the commutator the set-screw D may be loosened, thus rendering the spring E inactive; or the rear end of the block may be depressed and the block revolved until the spring E has freed itself from the block.

Another advantage is that the carbon-piece, when it becomes worn, can, by loosening the set-screw H and exerting a pressure on the rear end through the set-screw J, be forced out the desired distance and then relocked in position by the set-screw H.

Of course the number of leaves or plies of which the spring E is composed is immaterial.

I have herein shown two leaves; but only a single leaf might be employed, or the number might be increased, if desired.

What I claim is—

- 5 The combination, with the shaft A and rotatable block C, having the set-screw D and attached leaf-spring E, of the brush-holder block B, journaled on the shaft at opposite sides of the rotatable block and having a plain  
10 surfaced upper side provided with the bridge-piece B<sup>2</sup> and lug B', each having a screw-socket, the set-screw J, passing through the lug to bear against one extremity of the car-

bon to serve as an abutment therefor and also to feed the same forward, and the set- 15 screw H, passing through the bridge-piece for the purpose of clamping the carbon upon the plain upper surface of the holder-block, substantially as and for the purposes described.

In testimony whereof I sign this specifica- 20 tion in the presence of two witnesses.

HARRY H. BLADES.

Witnesses:

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