

(No Model.)

H. H. BLADES.
BRUSH HOLDER.

No. 451,909.

Patented May 12, 1891.

Fig. 1.

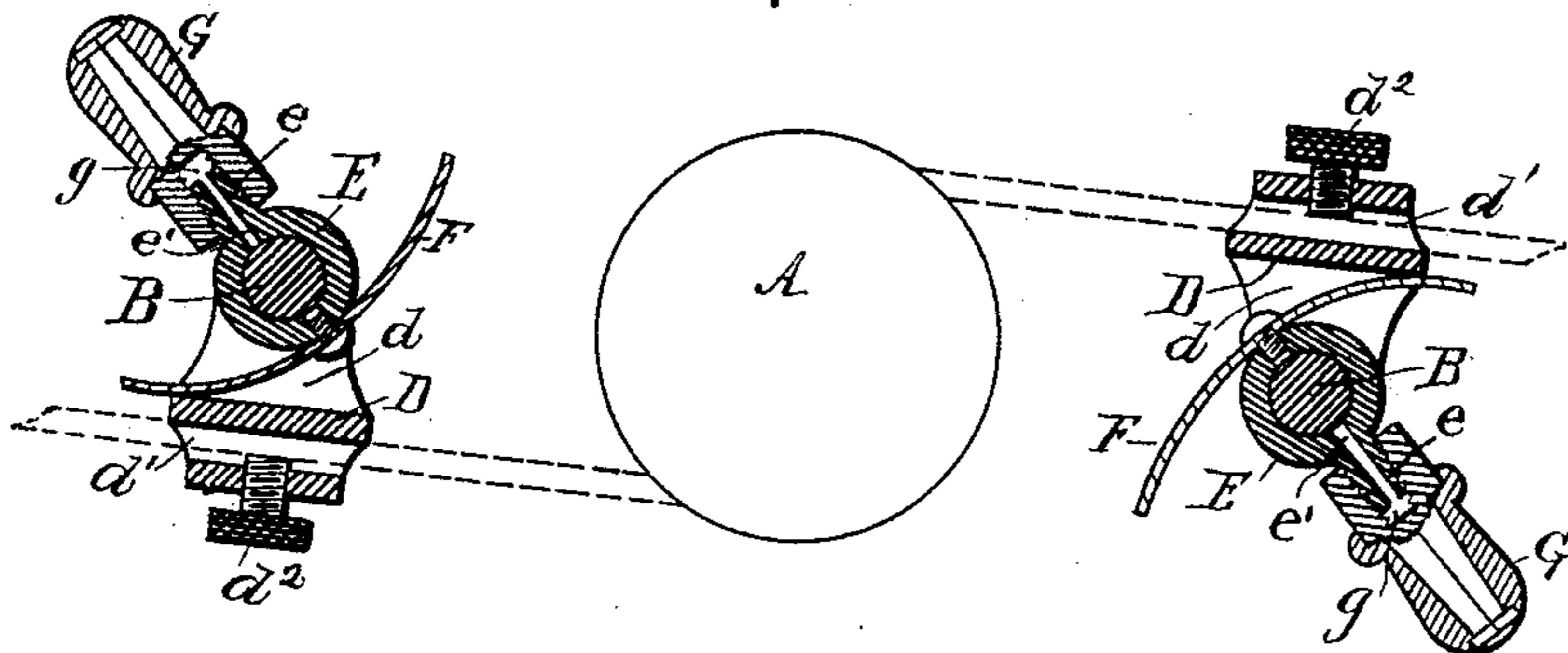


Fig. 2.

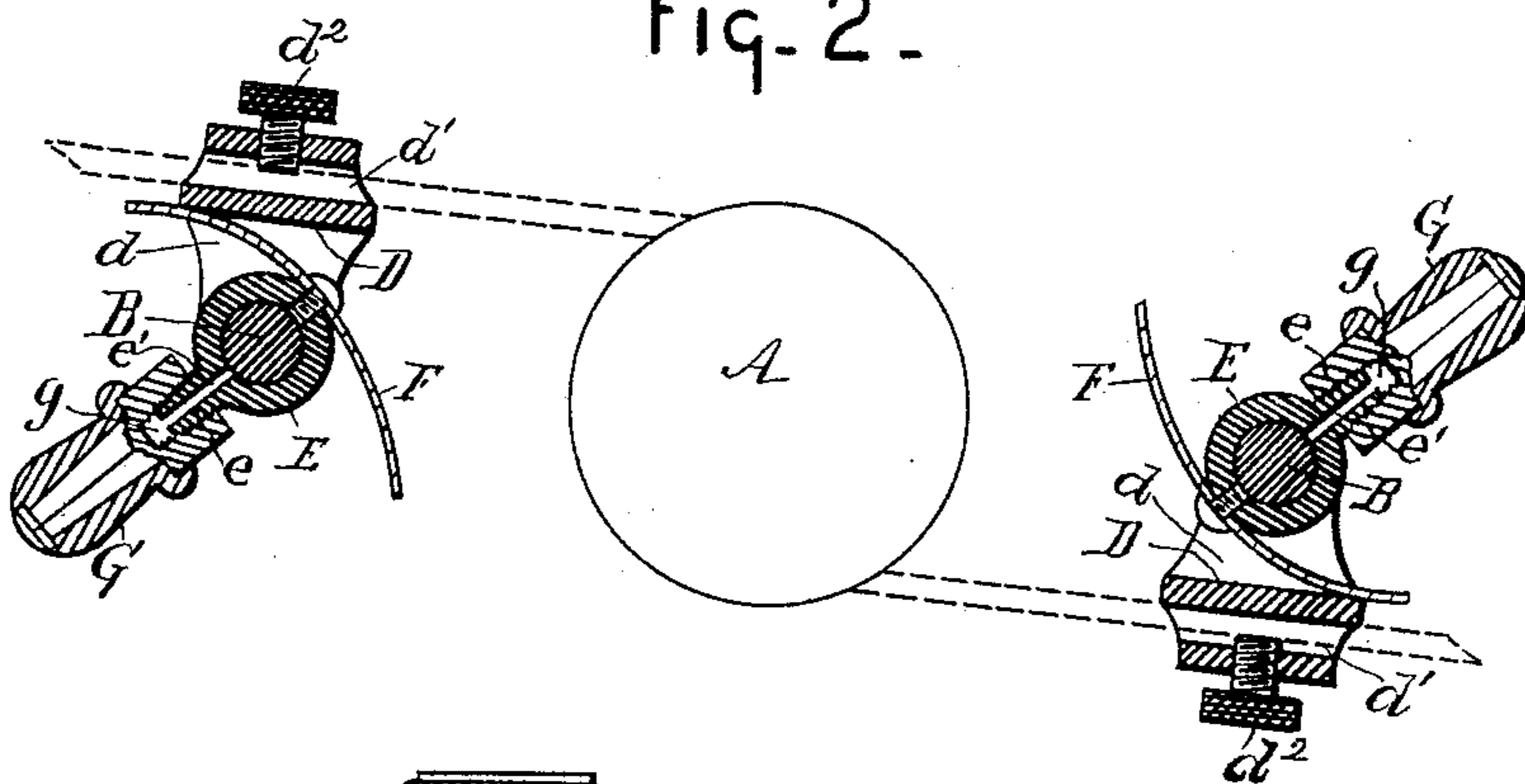
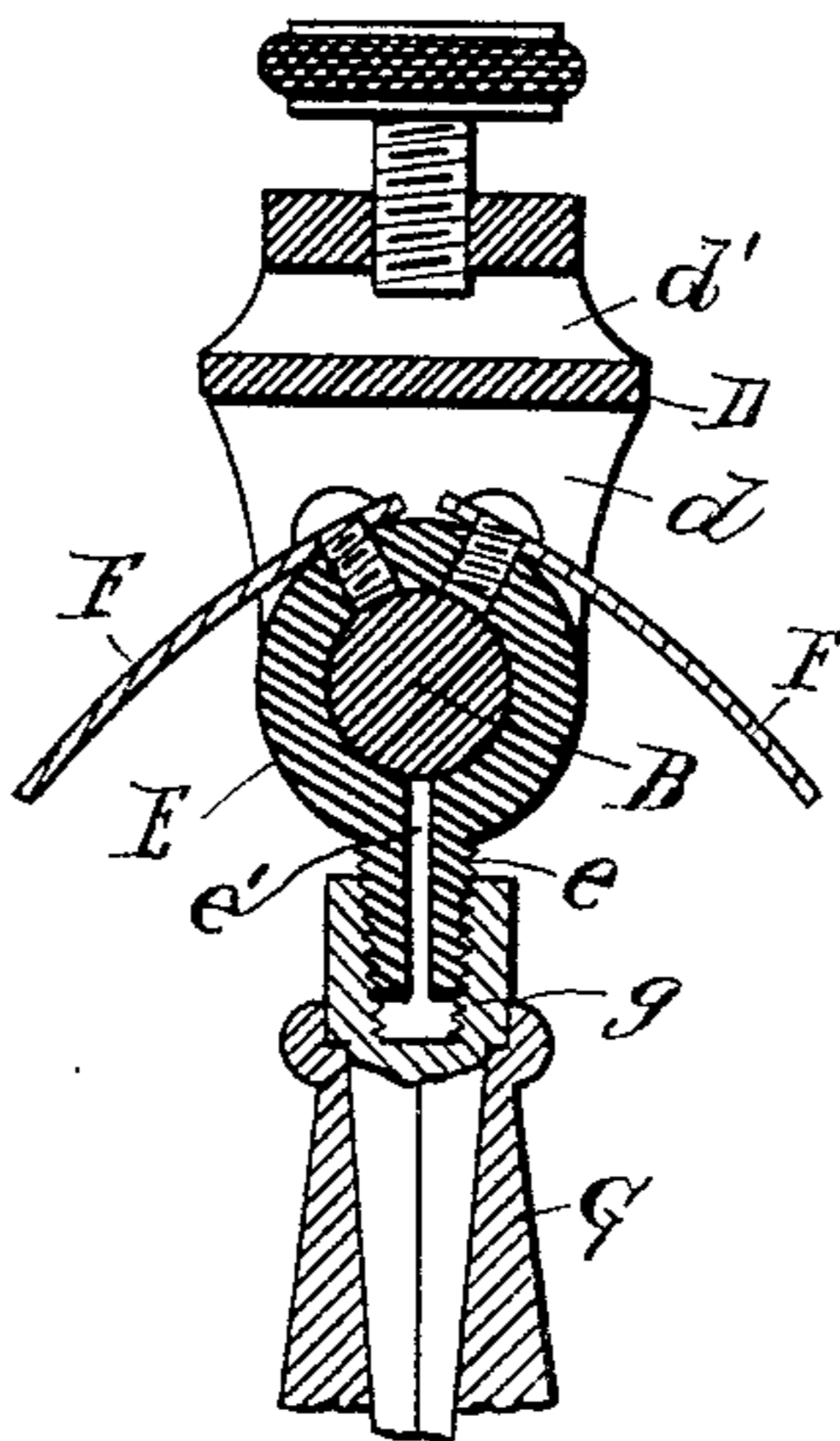


Fig. 3.



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BRUSH-HOLDER.

SPECIFICATION forming part of Letters Patent No. 451,909, dated May 12, 1891.

Application filed August 14, 1890. Serial No. 361,991. (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 Brush-Holders; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Heretofore in the use of motors, dynamos, &c., it has been necessary, when it was desired to change the direction of the revolution of the armature, to reverse the position of the brush-holders by removing them from their supporting shaft or spindle and placing them on again in their reversed or proper position; but to a person unfamiliar with this work this is somewhat difficult and is not always properly done, and it is the object of my invention to produce a brush-holder and its tension mechanism whereby the position of the holder with respect to the commutator may be reversed without removing any of the parts from the supporting shaft or spindle.

The invention also contemplates other novel features of construction hereinafter explained.

In the drawings, Figure 1 is a vertical section through a commutator and the brush-holder and supporting mechanism. Fig. 2 illustrates the same reversed. Fig. 3 illustrates a variation.

In carrying out my invention, A represents the commutator. On the shafts or spindles B B, which are supported by the usual rocker-arm, are supported the brush-holders D. Each holder has two lugs *d*, which embrace the shaft B, while the holder is provided with the transverse slot or opening *d'*, in which the brush is held by the set-screw *d*². On the shaft B and between the lugs *d* is the collar E. This collar is provided with the tapering threaded lug *e*, and the collar is split through this lug, as at *e'*. Engaged to the collar by a suitable set-screw at a point substantially opposite to the lug is the spring F. This may be a leaf-spring of a single ply, as shown, or two or more plies may be used. The spring is engaged substantially at its middle, so that both ends shall project out free; or, if desired, instead of a single spring engaged at its mid-

dle, the equivalent thereof might be used, as shown in Fig. 3, in which two springs are used with their free ends projecting in opposite directions.

G is a suitable handle provided with a tapering threaded socket *g* to fit the threaded exterior of the lug *e*. As will be seen, by unscrewing the socket from the lug the collar, being split, will be sufficiently relieved from its grasp on the shaft to be revolved to the desired extent, and then by screwing up the socket the collar will be tightened on the shaft and be held in place.

The operation of the apparatus is as follows: The spring F is employed to exert a tension on the brush-holder. Now, supposing it is desired to reverse the position of the holder, the operator need simply loosen the handle G with its socket. The collar E can then be revolved until the opposite end of the spring from that which had been previously used comes to a bearing on the holder D. A continued revolution of the collar then throws the holder D around into its reversed position, as shown in Fig. 2. The brush can then be adjusted properly, either by removing it and reversing it or by adjusting the reverse end properly. The collar is then tightened again and the motor started in the opposite direction. Thus without the removal of any of the parts from the supporting-shaft the position of the brush-holder has been reversed.

What I claim is—

1. The combination, with a brush-holder and its supporting-shaft, of a leaf-spring having both ends free and supported on said shaft independent of the holder, one free end of the spring adapted to bear on one side of the holder and the other free end on the other side, substantially as described.

2. The combination, with a commutator-brush holder and its supporting-shaft, of the collar journaled on said shaft below the holder, and the spring F, engaged to the collar and having its free ends projecting in each direction, whereby a spring-pressure may be exerted on either side of the holder, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

HARRY H. BLADES.

Witnesses:

W. H. CHAMBERLIN,
W. W. LEGGETT.