

930,337.

N. C. BASSETT.
BRUSH HOLDER.
APPLICATION FILED MAR. 24, 1902.

Patented Aug. 10, 1909.
2 SHEETS—SHEET 1.

Fig. 1.

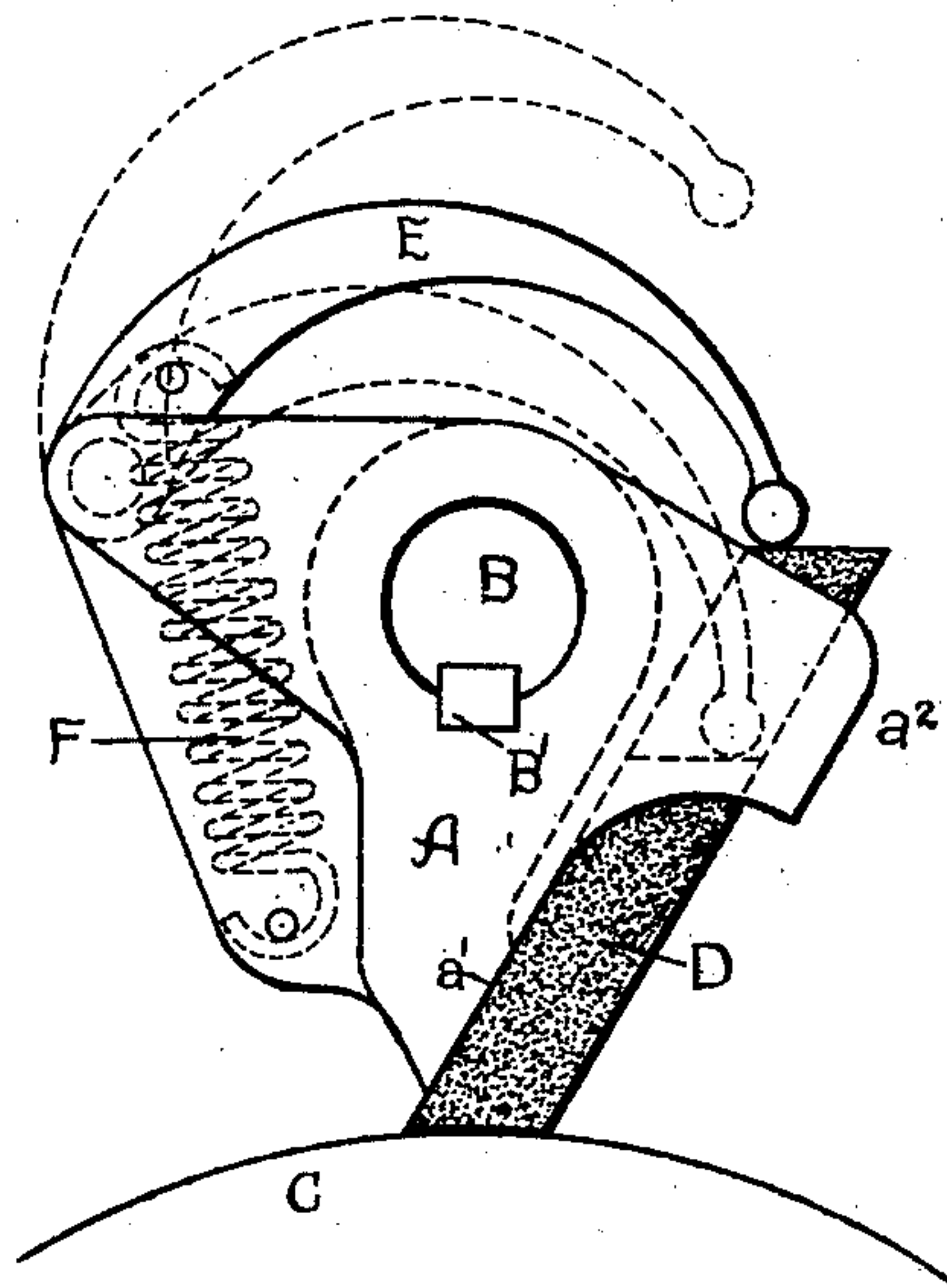
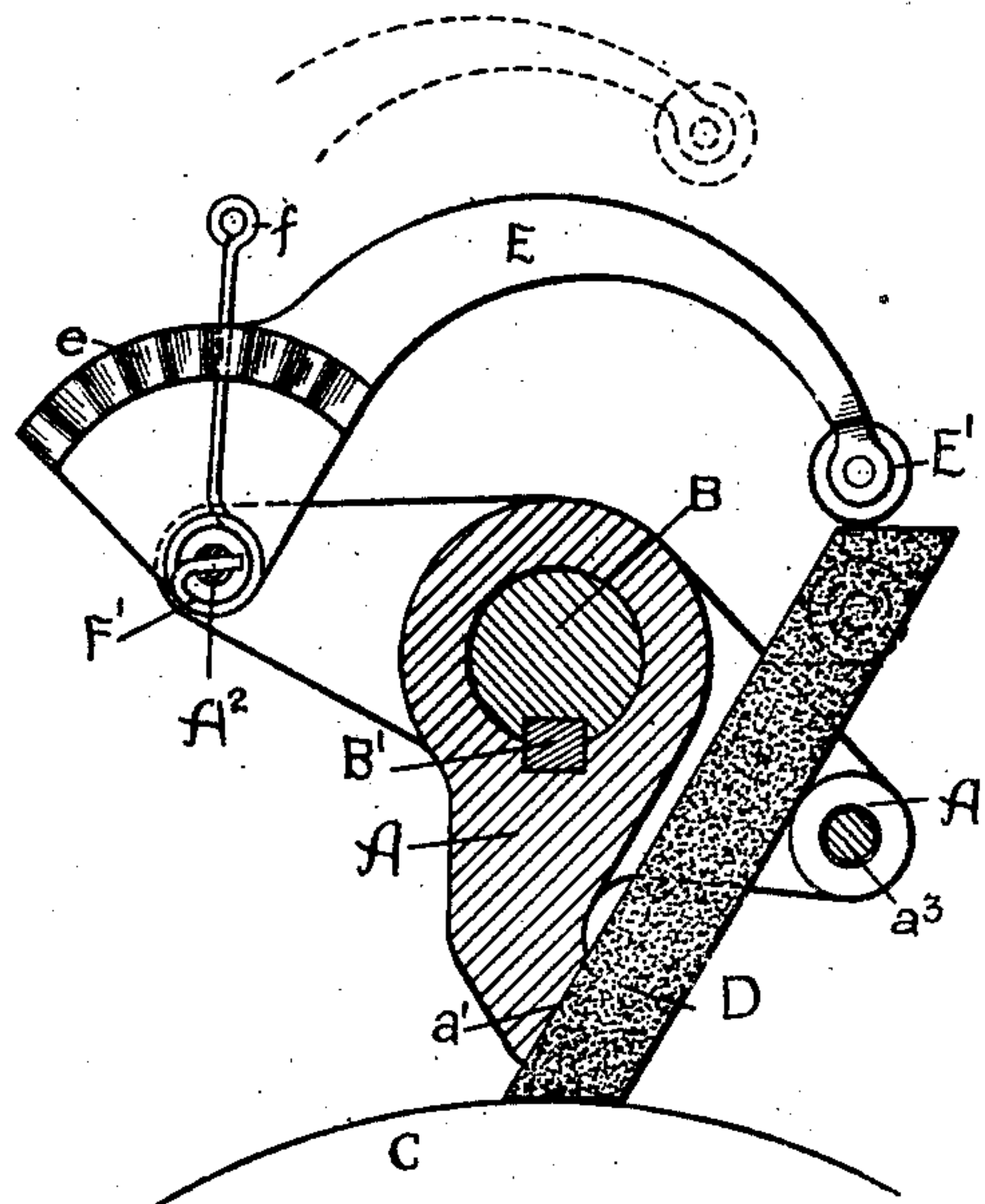


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

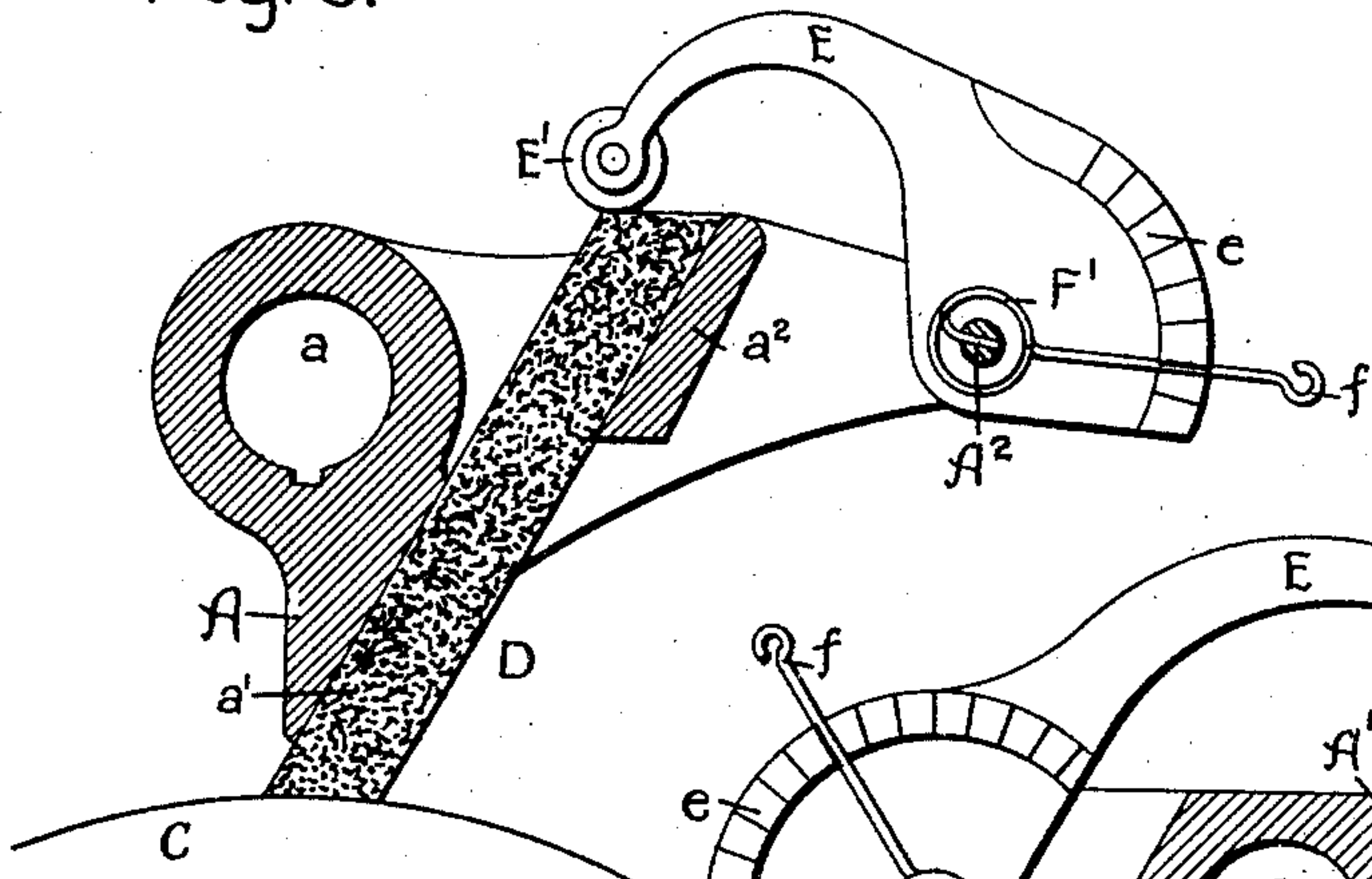


Fig. 5.

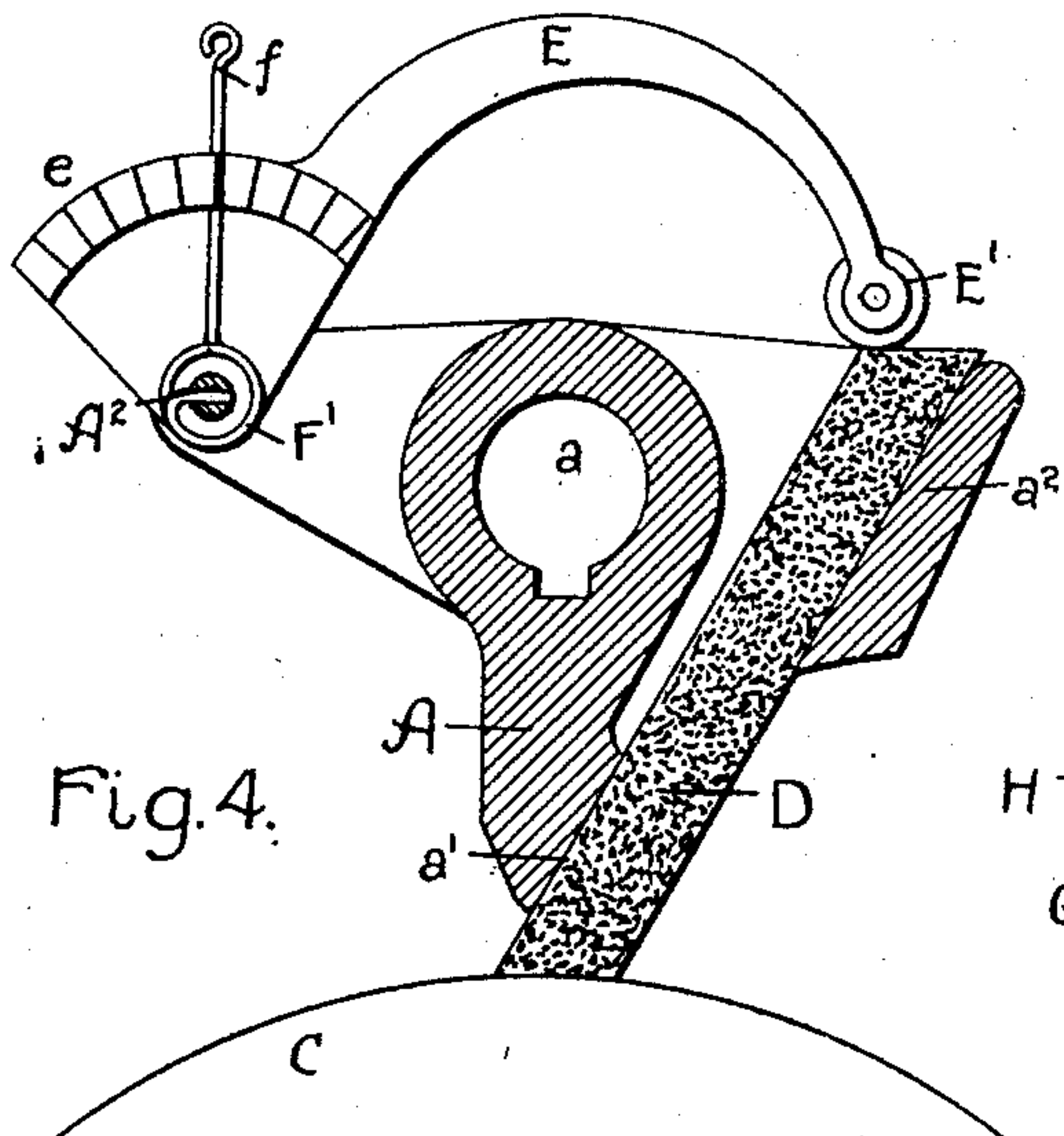
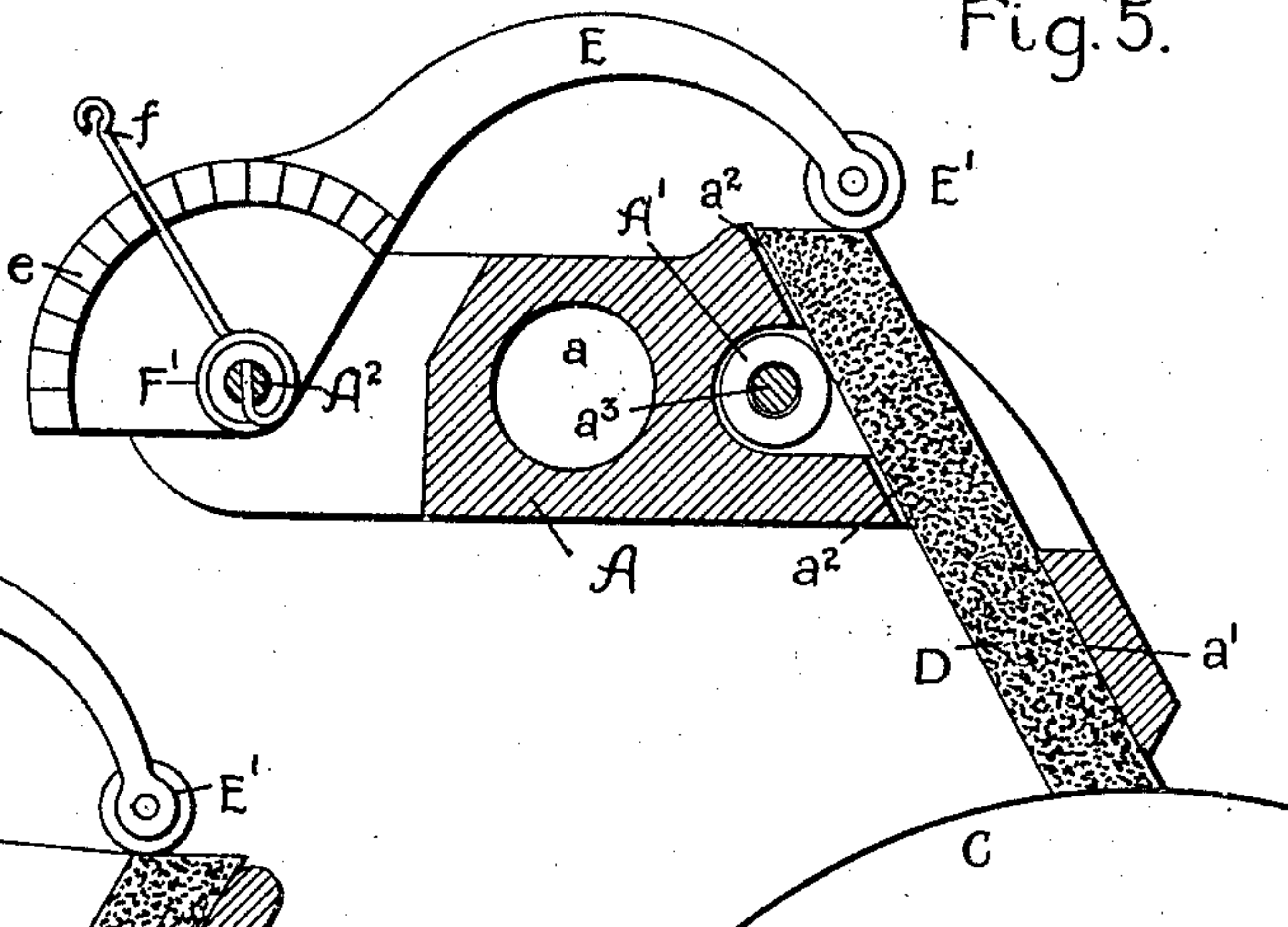


Fig. 4.

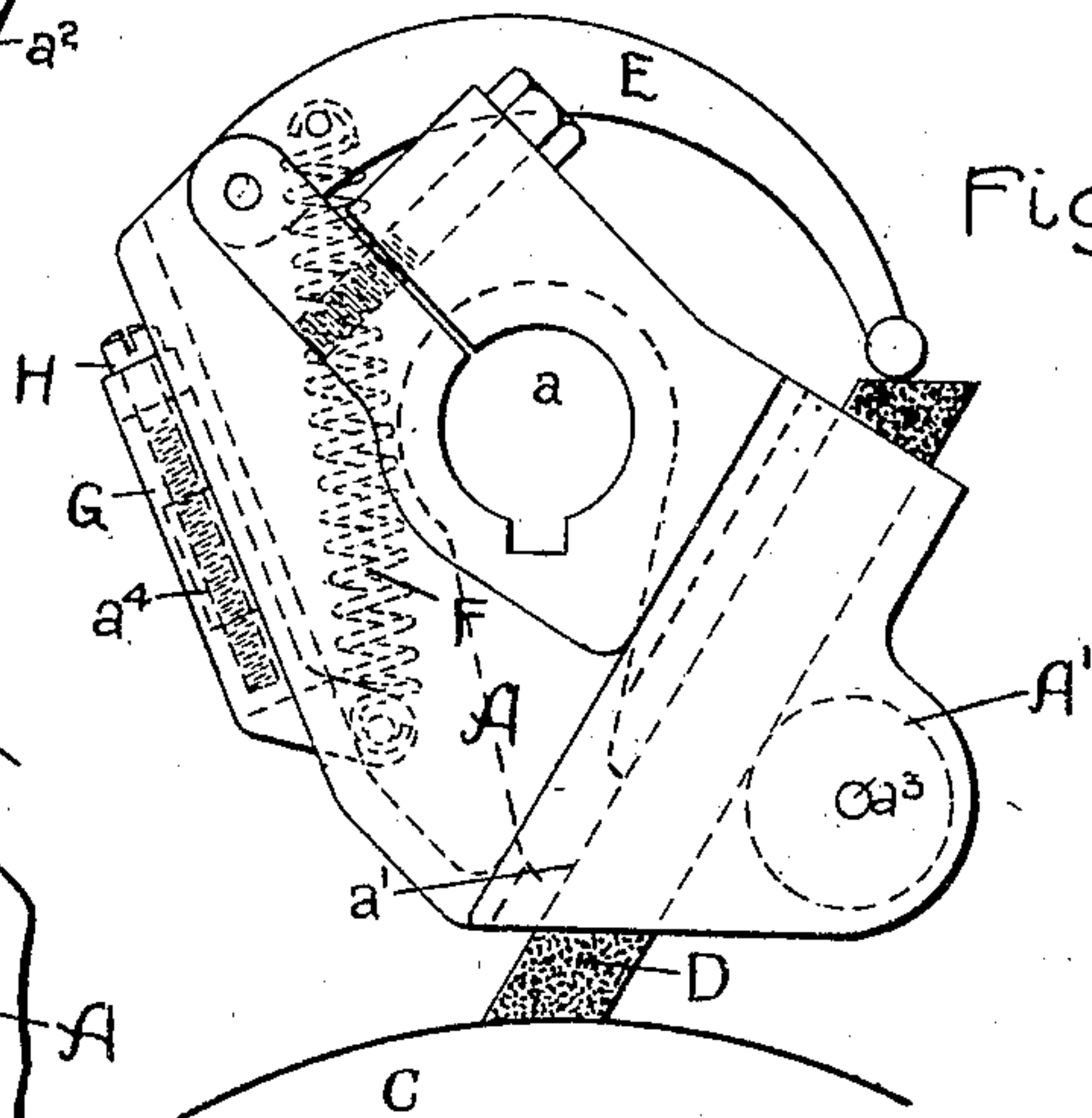
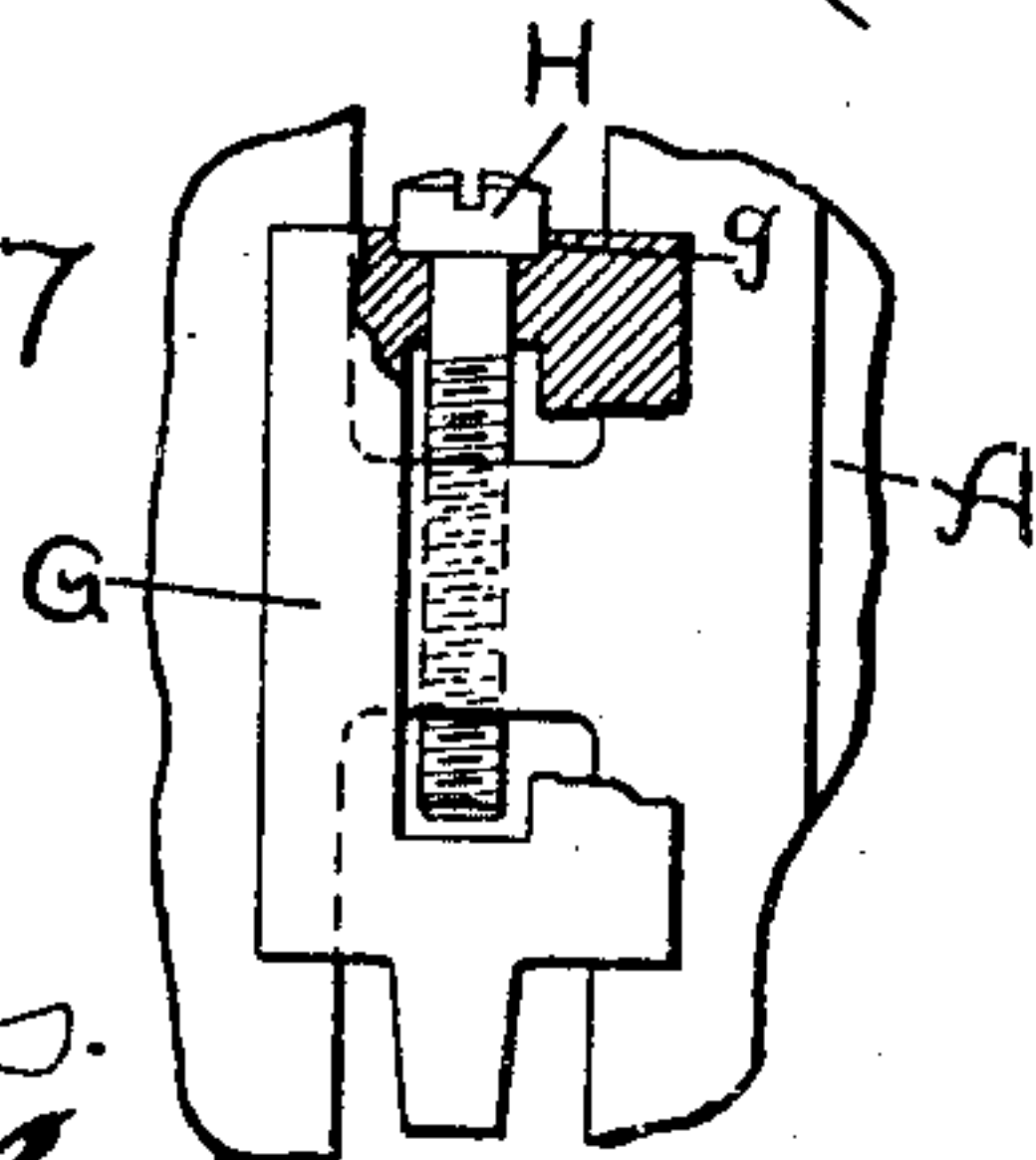


Fig. 6.

Fig. 7.



Witnesses.

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UNITED STATES PATENT OFFICE.

NORMAN C. BASSETT, OF LYNN, MASSACHUSETTS, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

BRUSH-HOLDER.

No. 930,337.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed March 24, 1902. Serial No. 99,624.

To all whom it may concern:

Be it known that I, NORMAN C. BASSETT, a citizen of the United States, residing at Lynn, county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Brush-Holders, of which the following is a specification.

This invention relates to brush-holders for dynamo-electric machines, and its object is to provide a device of this character in which the brush is supported by two surfaces on opposite sides of the same but not opposite each other. In brush-holders where the brush is supported against a rather broad flat surface, it is frequently the case that they are in contact at only a few points, owing to the brush being warped or uneven. This renders it liable to rock and chatter, and the purpose of my invention is to avoid this by the special construction adopted. Across the brush-holder and near the commutator is a comparatively narrow strip of surface against which the lower end of the brush rests, while on the opposite side of the brush and near its upper end, is a similar narrow strip of supporting surface, preferably smaller than the lower one. This mode of supporting the brush prevents it from rocking and permits the use of uneven and irregular brushes without the necessity of surfacing them beforehand to make them lie flat against the holder.

In the accompanying drawings, Figure 1 is a side elevation of a brush-holder embodying my improvements; Figs. 2, 3, 4 and 5 are side elevations, partly in section, of modified constructions of the same; Fig. 6 is a side elevation of a further modification showing a specified means for adjusting the tension of the follower-spring; Fig. 7 is a rear elevation of the same, partly broken away.

The brush-holder A is a casting of suitable shape, provided with a transverse hole a to enable it to be secured upon a supporting stud B, preferably by means of a key B^1 . At the lower end of the holder, near the commutator C, is a transverse flat surface a^1 , not very wide and preferably inclined to the radius of the commutator. An electric conducting block D rests against this surface, near its lower end, while its upper end is supported by a transverse surface on the opposite side of the brush. In Figs. 1, 3 and 4 this upper surface is a flat cross-bar a^2 , while

in Fig. 2 and Fig. 6 it consists of a roller A^1 loosely journaled on a transverse pin a^3 . In Fig. 5 a combination of the flat surface and the roller is used.

The block D is preferably made of carbon, and its ends are inclined to the sides thereof, said ends being beveled in parallel planes, preferably perpendicular to the radius of the commutator. The brush can therefore be slipped into the holder either end downward, and can be reversed end for end when desired.

Pivoted to the brush-holder in the rear of the brush is a follower E, the free end of which rests on the upper end of the brush. A spring is provided to cause the follower to exert a pressure on said brush in order to feed it downward as it wears away and also to force it into good electrical contact with the holder. In Fig. 1 the spring F is a simple helical spring attached at one end to the holder and at the other end to the follower. In Figs. 2, 3, 4 and 5 the spring F^1 is in the nature of a clock-spring coiled around a stationary pin A^2 fixed in the holder, one end of the spring being fastened to the pin and the other end being formed with a handle f which can be engaged with any one of a plurality of notches in a quadrant e on the follower, in order to adjust the tension of the spring. The end of the follower may be plain as shown in Figs. 1 and 6, or provided with a friction roller E^1 , as in Figs. 2, 3, 4 and 5.

It will be observed that the line along which the follower exerts its pressure on the brush is oblique to the longitudinal axis of the brush, so that the effect of such pressure is to force the upper part of the brush closely against the upper supporting surface at the same time that it feeds it downward against the commutator. The reaction of the commutator keeps the lower part of the brush in good contact with the lower supporting surface.

In Figs. 6 and 7 is shown a device for adjusting the tension of a helical follower-spring. The lower end of the spring is attached to an anchorage or abutment in the form of a block G which is fitted to slide on the back of the holder. An adjusting screw H rotates in a bearing in the upper part of the block, and meshes with a screw-threaded hole in a lug a^4 on the holder. By turning the screw the block G will be moved

up or down and the tension of the spring varied accordingly. The ends of the lug a^4 serve as stops to limit the movement of the block G. The head of the screw may fit
 5 into a notch g in the upper end of the block, so as to lock it against accidental rotation when once adjusted.

This construction is very simple and easy of adjustment, and is not likely to be shifted
 10 in the ordinary handling of the brush-holder.

What I claim as new and desire to secure by Letters Patent of the United States, is,

1. A brush-holder having narrow surfaces for supporting a brush on opposite sides of
 15 the same but displaced with respect to each other lengthwise of the brush, one of said surfaces being movable.

2. A brush-holder having a narrow surface for supporting the brush near the commu-
 20 tator and another narrow surface on the opposite side of the brush displaced with respect to said first mentioned surface lengthwise of the brush for supporting the brush near its upper end, the last mentioned sur-
 25 face being movable.

3. A brush-holder having a surface lying in front of and supporting the brush near the commutator only, and an antifriction support lying in the rear of the brush near its
 30 upper end only, said surface and said support being displaced with respect to each other lengthwise of the brush.

4. A brush-holder having a narrow surface for supporting the brush near the commu-
 35 tator and a roller displaced with respect to said surface lengthwise of the brush for supporting the brush near its upper end but on the other side thereof, in combination with a follower whose line of pressure is obliquely downward toward the upper sup-
 40 porting surface.

5. A brush-holder having a narrow surface for supporting the brush near the commu-
 45 tator and another narrow surface on the opposite side of the brush displaced with respect to said first mentioned surface lengthwise of the brush for supporting the brush near its upper end, said surfaces having no supporting surfaces opposite them.

6. A brush-holder body comprising similar
 50 and parallel end pieces connected by a narrow, angularly disposed back for the brush and a narrow supporting surface on the opposite side of said brush displaced with respect to said back lengthwise of the brush,
 55 said back and said surface having no supporting surfaces opposite them.

In witness whereof I have hereunto set my hand this 20th day of March, 1902.

NORMAN C. BASSETT.

Witnesses:

BENJAMIN B. HULL,
 HELEN ORFORD.