

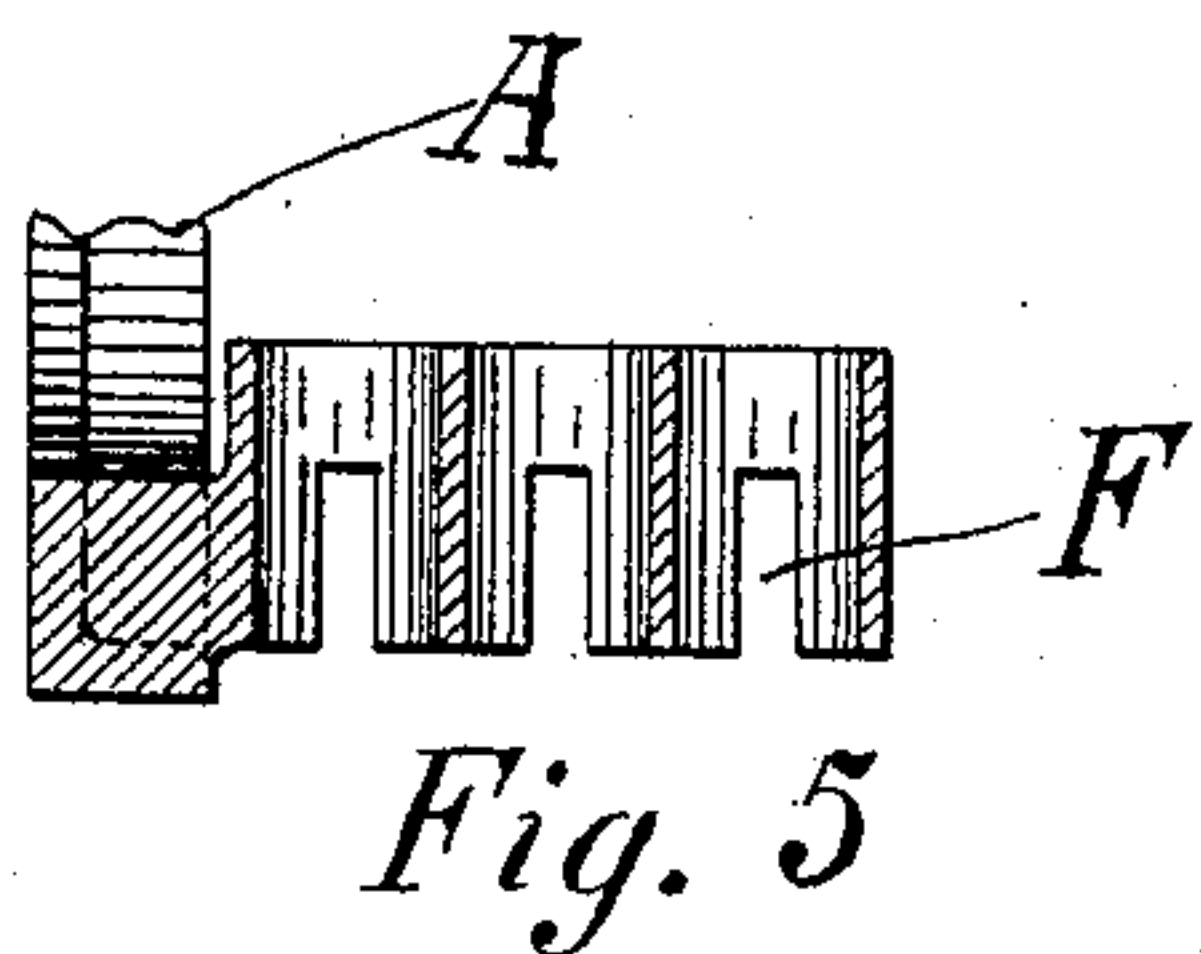
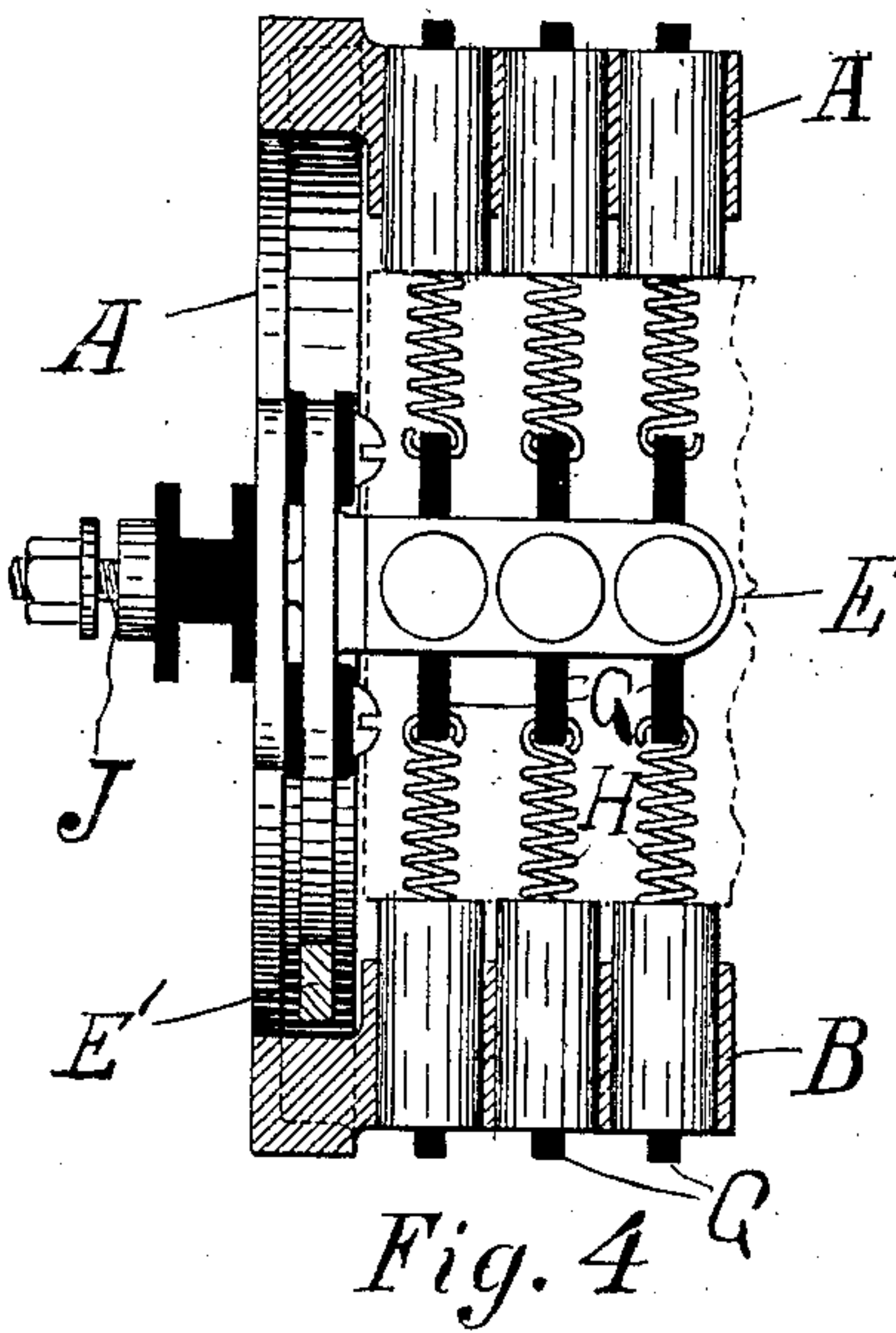
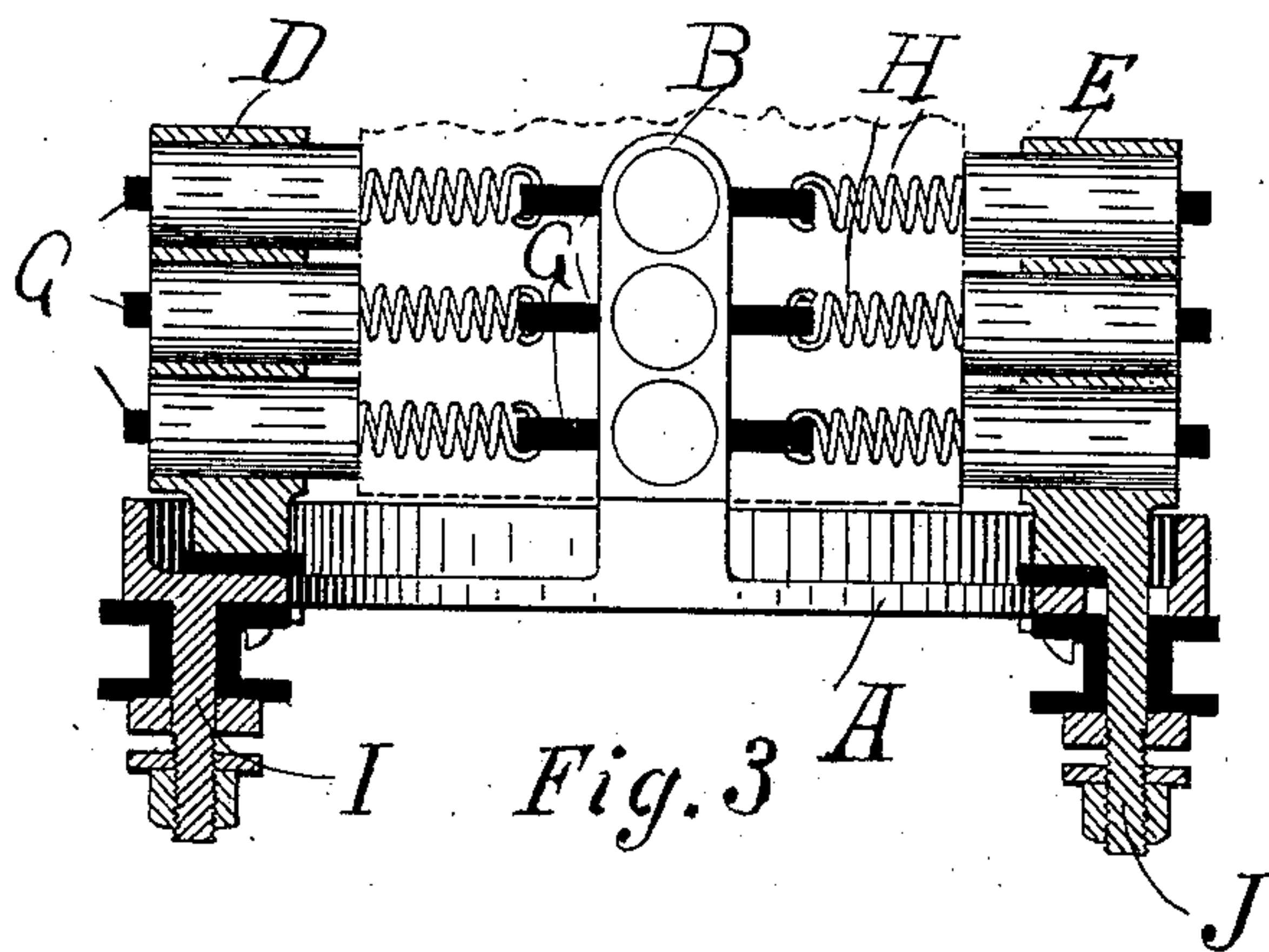
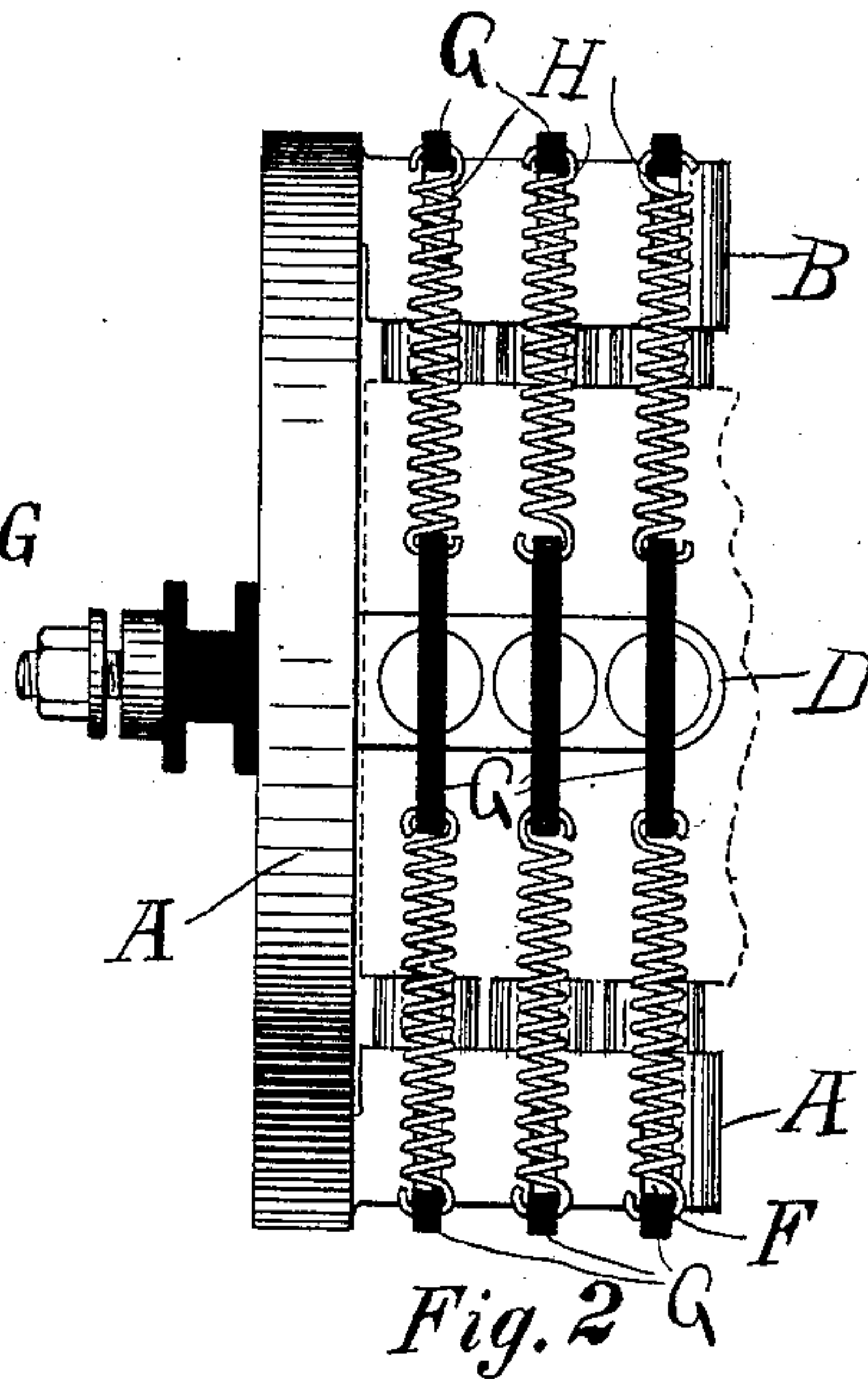
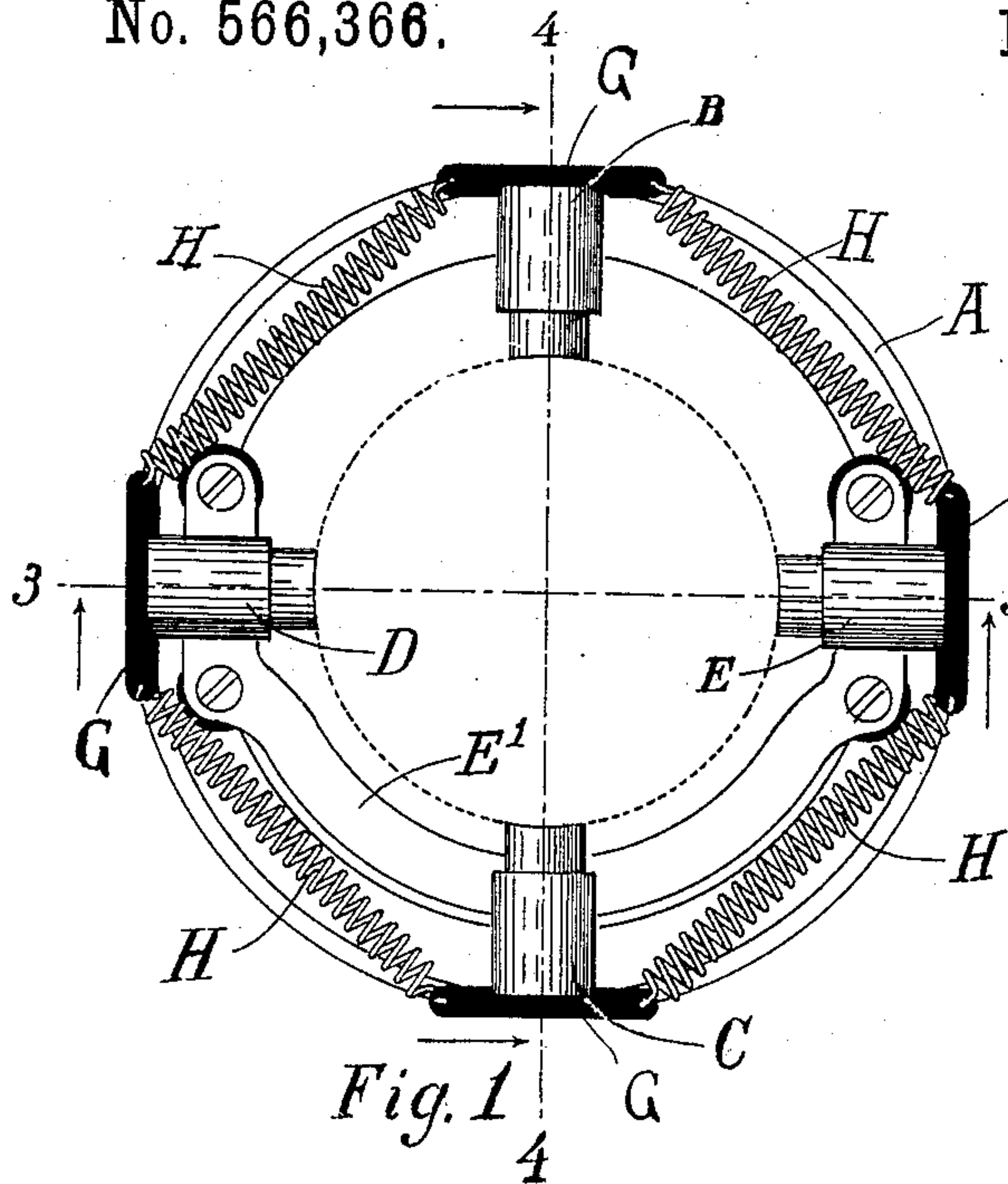
(No Model.)

C. E. WOODS.

BRUSH HOLDER FOR DYNAMO ELECTRIC MACHINES.

No. 566,366.

Patented Aug. 25, 1896.



WITNESSES:

Donald M. Carter,
Francis M. Ireland

INVENTOR

Clinton E. Woods

UNITED STATES PATENT OFFICE.

CLINTON E. WOODS, OF CHICAGO, ILLINOIS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE AMERICAN ELECTRIC VEHICLE COMPANY, OF SAME PLACE.

BRUSH-HOLDER FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 566,366, dated August 25, 1896.

Application filed January 15, 1896. Serial No. 575,603. (No model.)

To all whom it may concern:

Be it known that I, CLINTON E. WOODS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Brush-Holders for Dynamo-Electric Machines, of which the following is a specification.

My invention relates to brush-holders for dynamo-electric machines, and has for its object to provide a new and improved brush-holder, of which the following is a description, reference being had to the accompanying drawings, wherein—

Figure 1 is a front elevation of a brush-holder embodying my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a cross-section on line 3 3, Fig. 1. Fig. 4 is a section on line 4 4, Fig. 1. Fig. 5 is a detail view, in part section, of one of the brush-holding devices.

Like letters refer to like parts throughout the several figures.

I have shown in the drawings a brush-holder adapted to be used upon a four-pole machine, the brushes being located around a common center. This brush-holder shows four sets of brushes, but it is of course evident that the number of sets of brushes may be varied, if desired. The brushes are connected with a frame, which, as shown in the drawings, consists of a ring A. Two brush-holding devices B and C are electrically connected with this ring and are preferably integral therewith, as shown in the drawings. These brush-holding devices may be constructed in any convenient manner. As shown in the drawings they consist of projecting arms provided with slots in which the brushes are inserted, the brushes in this case being cylindrical and being radially disposed about the commutator. The two sets of brush-holding devices D and E are connected with the ring A, but are insulated therefrom, as shown. These two brush-holding devices are electrically connected together by means of the strip E'. As shown in the drawings, the said brush-holding devices are integral with the strip E', the whole being insulated from the ring A.

Each brush-holding device, as shown in the drawings, is capable of holding three brushes and is provided with the slots F F, the sides of each apartment into which the brush is held being provided with two of said slots, one on each side thereof.

Associated with each brush-holding device are the movable parts or strips G, adapted to fit into the slots F and bear upon the top of the brush. These movable pieces or strips are connected together by any suitable elastic devices, so that when the brushes are in position they are elastically pressed against the commutator. As shown in the drawings, these movable pieces are connected together by means of the springs H H. The brushes are connected with the external circuit by means of the binding-posts I J. The binding-post I is electrically connected with the ring A, and the binding-post J is insulated from said ring but is electrically connected with the strip E'.

I have described these several parts in detail, but it is evident that they may be varied in form, construction, and arrangement without departing from the spirit of my invention, and I therefore do not wish to be limited to the exact construction shown.

The use and operation of my invention are as follows: When the brushes are placed in the brush-holding devices and the movable pieces placed in position in the slots F, the brushes will be elastically forced against the commutator, which is indicated in Fig. 1 in dotted lines. The current enters at one of the binding-posts, for example, the binding-post I, and is conducted by means of the ring A to the brushes in the holding devices B and C. The current then passes through the armature of the dynamo and passes out of the machine through the brushes in the holding devices D and E and through the binding-post J. When it is desired to replace any brush, the movable part G associated with said brush is lifted out of the slots F and moved to one side, so that the brush may be inserted in the opening in the holding device. The movable part G is then replaced and the brushes will then be in operative condition.

It will be seen that I have here a simple,

convenient, and effective brush-holder by which the brushes are elastically pressed against the commutator with substantially the same pressure at all times.

5 I claim—

1. A brush-holder for dynamo-electric machines comprising a frame having a series of brush-holding devices connected therewith, each brush-holding device provided with a
10 movable part adapted to engage the brush, and a series of elastic connecting devices, connecting said movable parts together whereby the brushes when in position are elastically forced against the commutator.

15 2. A brush-holder for dynamo-electric machines comprising a ring having a series of brush-holding devices connected therewith, said brush-holding devices arranged around a common center, a movable part associated
20 with each brush-holding device and adapted to bear against the top of the brush when in position, and a series of springs connecting said movable parts together whereby the brushes when in position are elastically
25 pressed against the commutator.

3. A brush-holder for dynamo-electric machines comprising a ring having a series of

brush-holding devices connected therewith, and slotted at one end, said brush-holding
30 devices arranged around a common center, a movable part adapted to work in slots in said brush-holding devices and adapted to bear against the top of the brush when in position and a series of springs connecting said
35 movable parts together, whereby the brushes when in position are elastically pressed against the commutator.

4. A brush-holder for dynamo-electric machines comprising a ring, having two sets of brush-holding devices electrically connected
40 therewith, two additional brush-holding devices attached to the ring, but electrically insulated therefrom, said latter brush-holding devices electrically connected together, a series of movable parts associated with said
45 brush-holding devices and adapted to work in slots cut therein, and a series of springs connecting said movable parts together, substantially as described.

CLINTON E. WOODS.

Witnesses:

FRANCIS W. PARKER,
DONALD M. CARTER.