

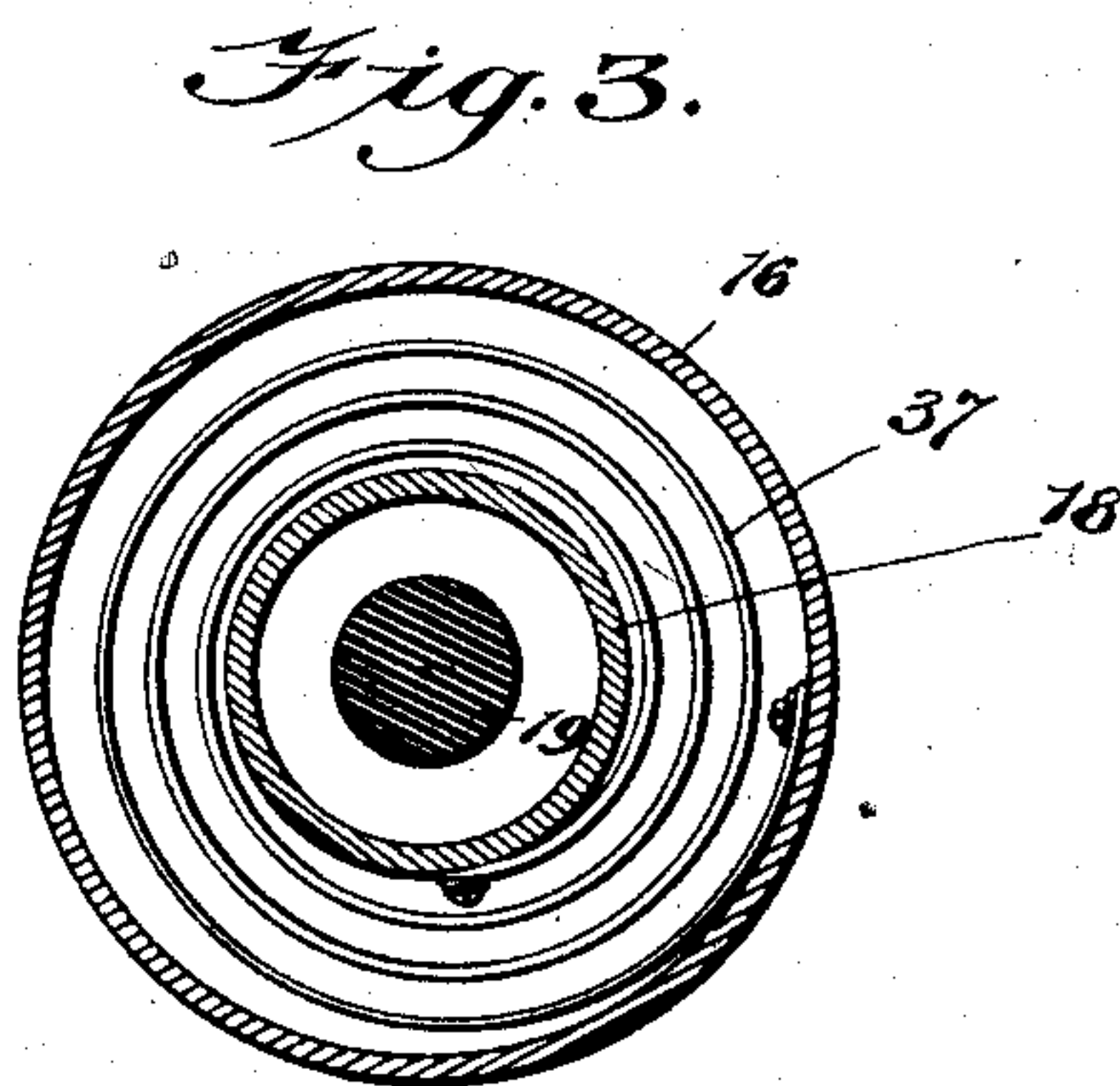
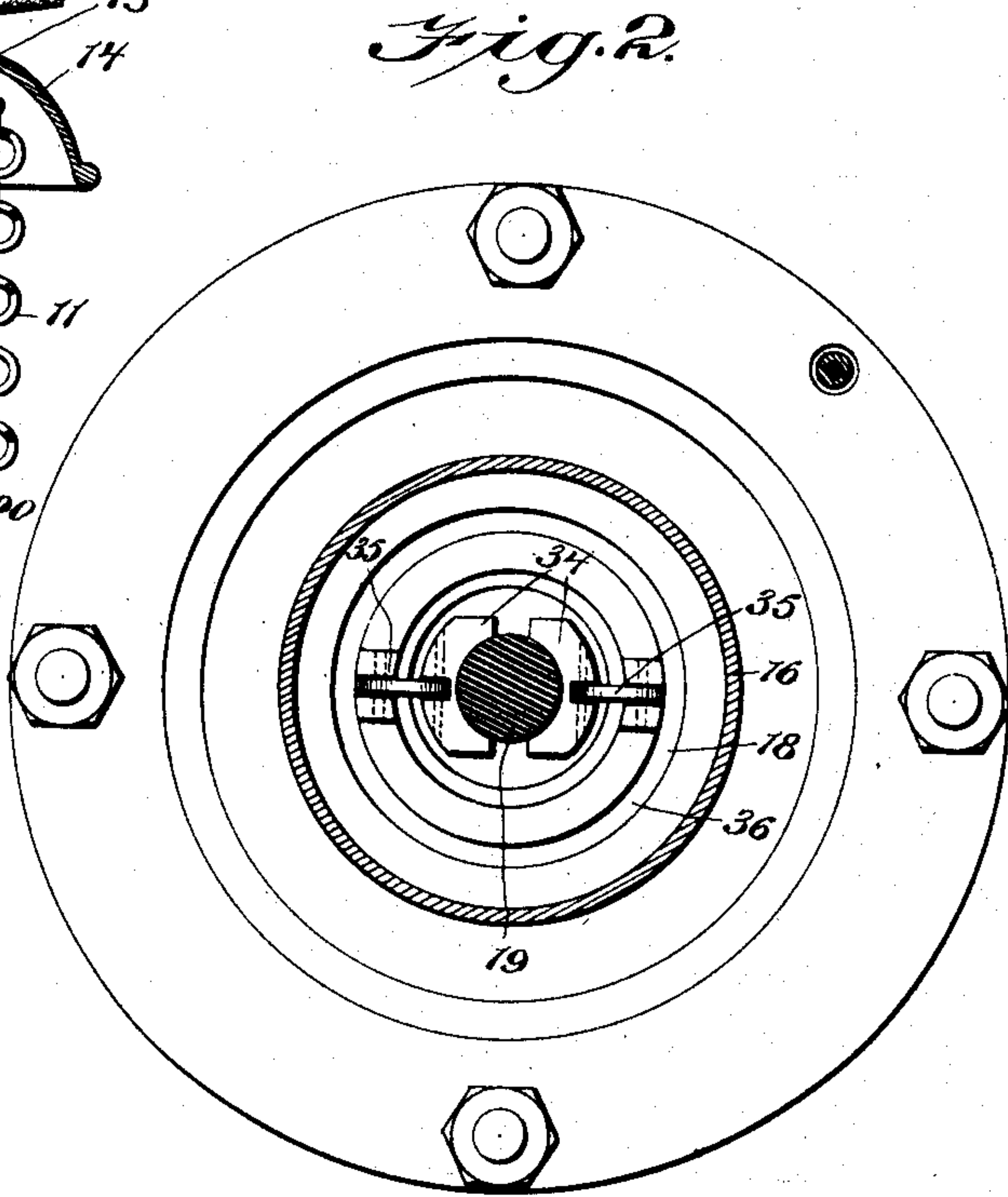
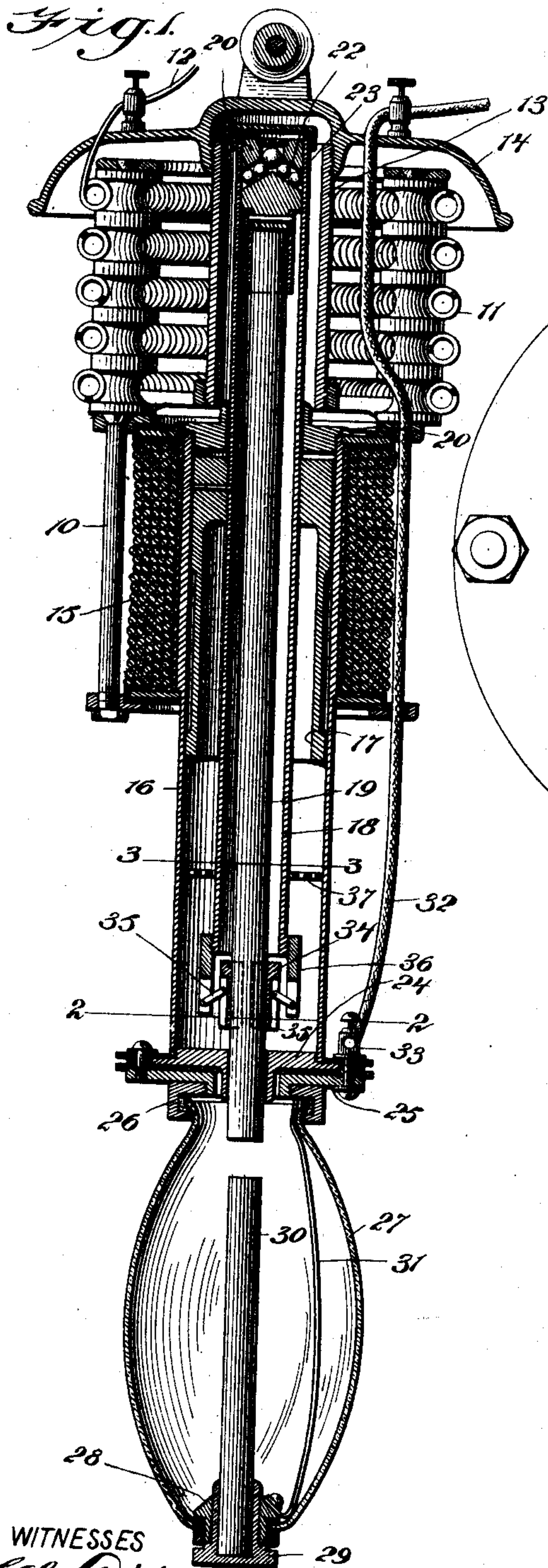
No. 669,015.

Patented Feb. 26, 1901.

G. RASMUS.  
ELECTRIC ARC LAMP.

(Application filed Nov. 30, 1900.)

(No Model.)



WITNESSES  
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# UNITED STATES PATENT OFFICE.

GUSTAV RASMUS, OF NEW YORK, N. Y.

## ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 669,015, dated February 26, 1901.

Application filed November 30, 1900. Serial No. 38,179. (No model.)

*To all whom it may concern:*

Be it known that I, GUSTAV RASMUS, a citizen of the United States, and a resident of the city of New York, (Long Island City,) in the  
5 borough of Queens, in the county of Queens and State of New York, have invented a new and Improved Arc-Lamp, of which the following is a full, clear, and exact description.

This invention relates to improvements in  
10 electric-arc lamps; and the object is to provide an arc-lamp of very simple and comparatively inexpensive construction and of high efficiency with a less current than ordinarily required for arc-lamps.

15 I will describe an arc-lamp embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification,  
20 in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of a lamp embodying my invention. Fig. 2 is a section  
25 on the line 2 2 of Fig. 1, and Fig. 3 is a section on the line 3 3 of Fig. 1.

The lamp comprises a frame 10, on which is supported a resistance-coil 11, connecting at one end with the leading-in wire 12 and connecting at the other end with a metal tube  
30 13, which is closed at its upper end by a hood or cap 14. Arranged within the frame 10 is a solenoid 15, which is also comprised in the electric circuit. Extended through the solenoid and for a distance below the same is a  
35 brass tube 16, in which the tubular core 17 operates. This core 17 is rigidly connected to an inner tube 18, within which the upper carbon 19 is located. Attached to the upper end of the solenoid-spool is a collar 20, through  
40 which the tube 18 is free to move. The upper end of the carbon 19 is engaged in a socket-piece 21, movable vertically in the tube 18, and to insure an electrical contact between the socket-piece and the tube 18 I  
45 provide said socket-piece with downwardly and outwardly inclined openings 22, in which metal balls 23 are arranged. These metal balls 23 are pressed outward by a larger or heavier ball engaging with the upper balls 23.

50 Attached to the lower end of the tube 16 is a plate 24, and attached to this plate 24, but

insulated therefrom, is a plate 25, having an opening at its center, which surrounds a hub extended downward from the plate 24. This  
plate 25 has a downwardly-extended exter- 55  
nally-threaded hub portion, with which an interiorly-threaded globe-supporting ring 26 engages. The globe 27 is removably connected to the ring 26 and at its lower end is  
60 attached a metal collar 28, through which the socket-piece 29 for the lower carbon 30 engages. The lower carbon is electrically connected to the collar 26 and to the plate 25 by  
65 means of a wire 31, which is preferably arranged within the globe 27. While I have shown but one wire 31, there may be two or  
more. A leading-out wire 32 connects with the plate 25 through the binding-post 33.

Carried by the lower end of the tube 18 are carbon-clamping blocks 34. These clamping-  
70 blocks 34 have link connections 35 with a ring 36, having screw-thread engagement with the lower end of said tube 18. A yielding electrical connection is provided between  
75 the tubes 16 and 18 by means of a coiled spring 37, which is connected at one end to said tube 16 and and at the other end to the tube 18. This form of spring allows a vertical  
80 movement of the tube 18 relatively to the tube 16.

In operation when the current is cut out momentarily the tube carrying the upper carbon will move downward, so that the end of  
said carbon engages with the lower carbon. Upon its downward movement the ends of the  
85 clamping-blocks will engage against the upper side of the plate 24, moving them slightly outward to release the carbon. As the current is closed, however, by the carbons coming in contact the solenoid 15 will be ener-  
90 gized, drawing the core upward, causing the clamping-blocks to engage with the upper carbon, raising it out of engagement with the lower carbon, and thus forming the arc. The  
95 current of course passes through the wire 12, the resistance-coil, and through the carbons, and thence out through the wires 31 and 32. As the carbons wear away the upper carbon  
will move downward relatively to the tube 18.

It will be seen that a lamp embodying my  
100 invention may be very cheaply made because only one resistance-coil and one solenoid are



required, and as the parts are arranged one upon another the lamp will take up but very little space.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an arc-lamp, a solenoid, a tube extended through the solenoid and projected below the same to a considerable distance, a collar attached to the upper end of the solenoid, an inner tube movable through said collar and through the first-named tube, a solenoid-core attached to said inner tube, a carbon-holder movable in the inner tube, a plate attached to the lower end of the first-named tube and having an opening for the passage of a carbon, and carbon-clamping devices carried by the inner tube and adapted to be moved to open position by contact with said plate; substantially as specified.

2. In an arc-lamp, a solenoid, a tube extended downward from said solenoid, an inner tube for carrying the carbon, a core for the solenoid connected to said inner tube, a plate attached to the lower end of the first-named tube, a lower plate having an opening through which the tubular hub of the first-named plate extends, the said plates being insulated one from the other, a downwardly-extended hub on the lower plate having an ex-

terior screw-thread, and a globe-supporting ring engaging with said screw-thread, substantially as specified.

3. In an arc-lamp, a solenoid, a tube extended downward from the solenoid, a plate on the lower end of said tube and having an opening through which a carbon may move, a core, an inner tube attached to the core, opposite carbon-clamping blocks, and link connections between said blocks and a part on the lower end of the inner tube, the said blocks being extended to engage with said plate to move the blocks to open position, substantially as specified.

4. In an arc-lamp, a carbon-carrying tube, a socket-piece movable in said tube and having oppositely-extended downwardly-inclined openings, rolling contact devices in said openings, and a rolling device of greater weight than the contacts and engaging therewith to press them outward, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GUSTAV RASMUS.

Witnesses:

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B. MOESER.