

A. J. PERKINS.
ELECTRIC HAND LIGHTING GAS BURNER.
APPLICATION FILED OCT. 21, 1908.

916,776.

Patented Mar. 30, 1909.

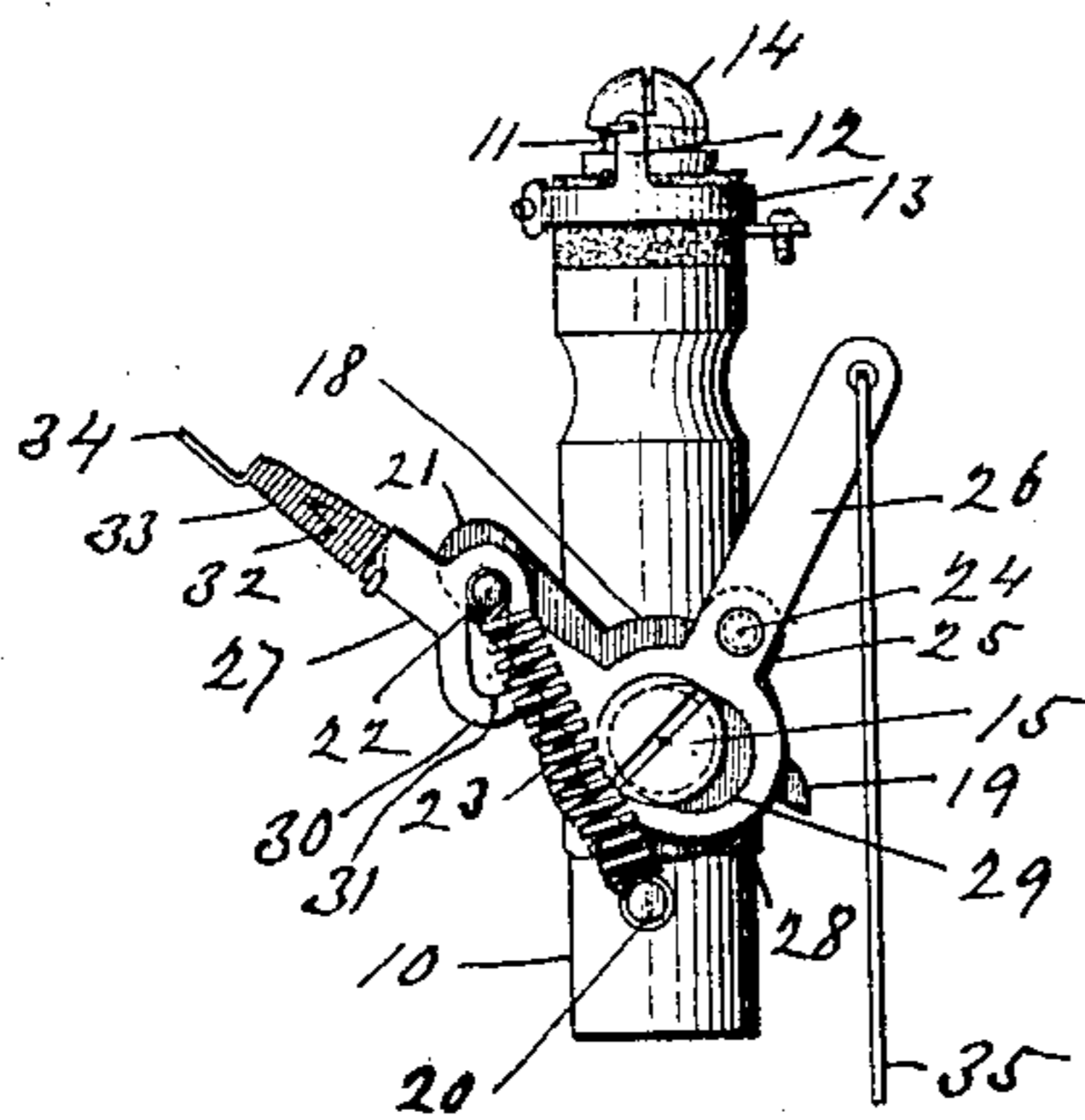


Fig. 1.

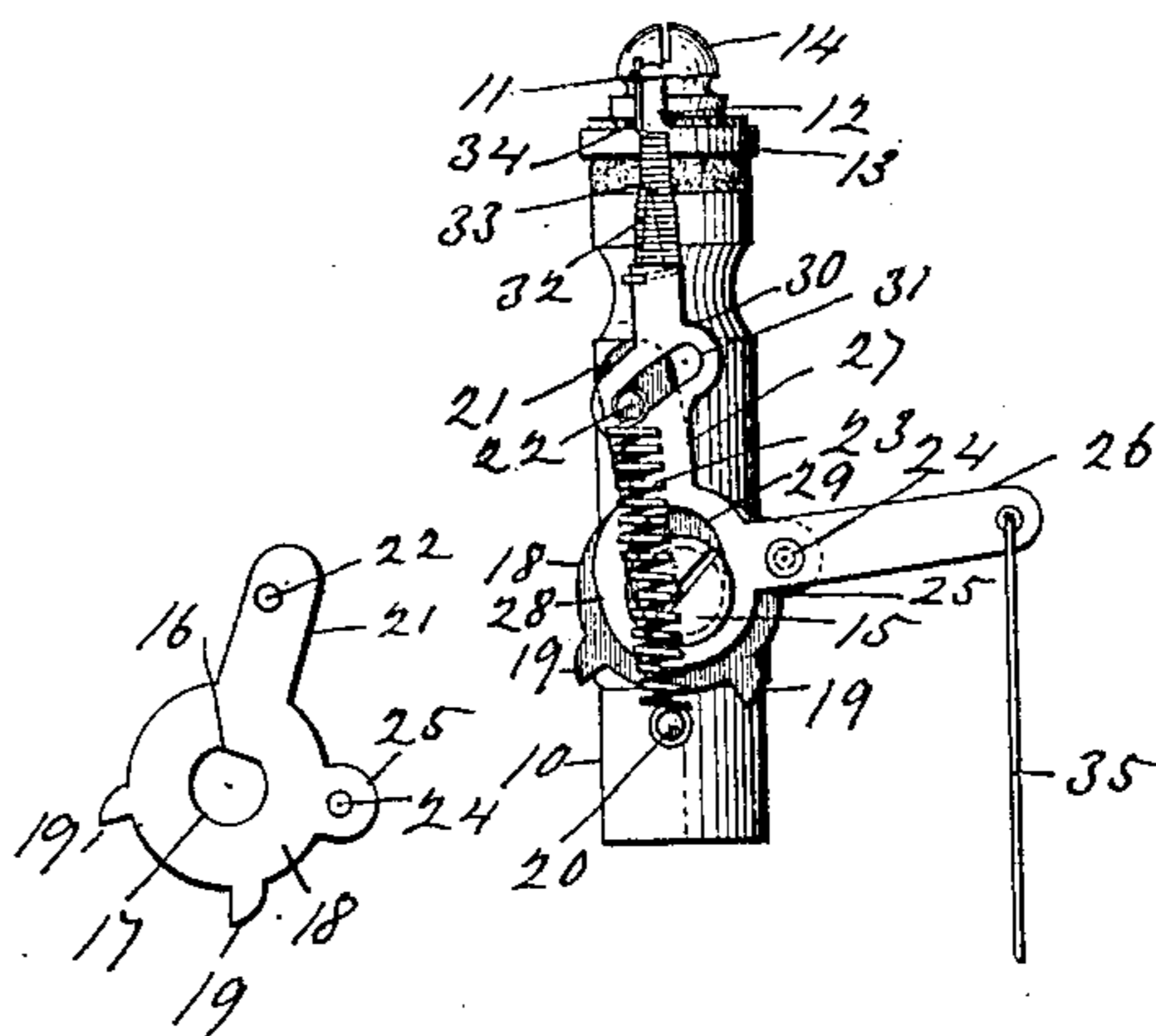


Fig. 2.

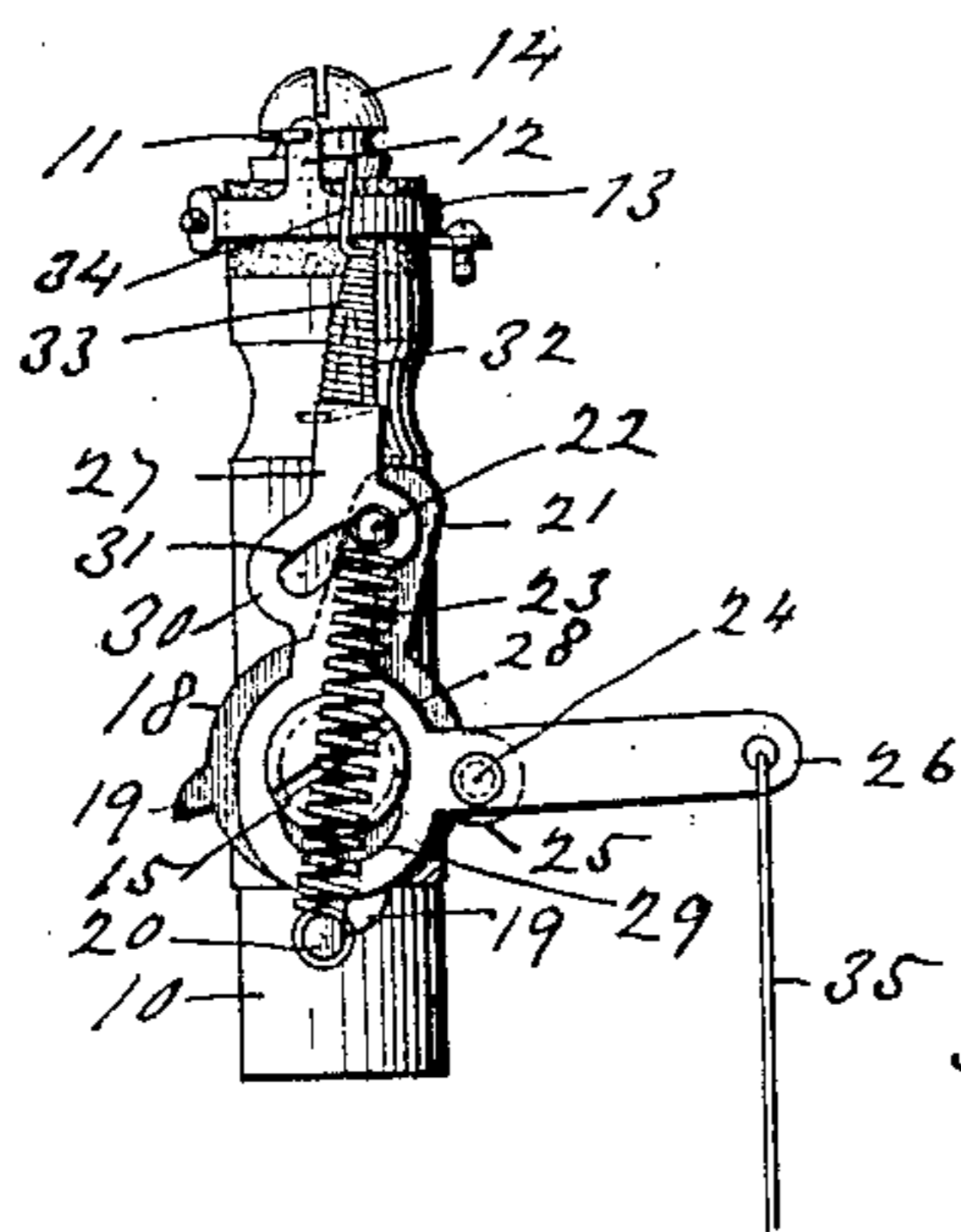


Fig. 3.

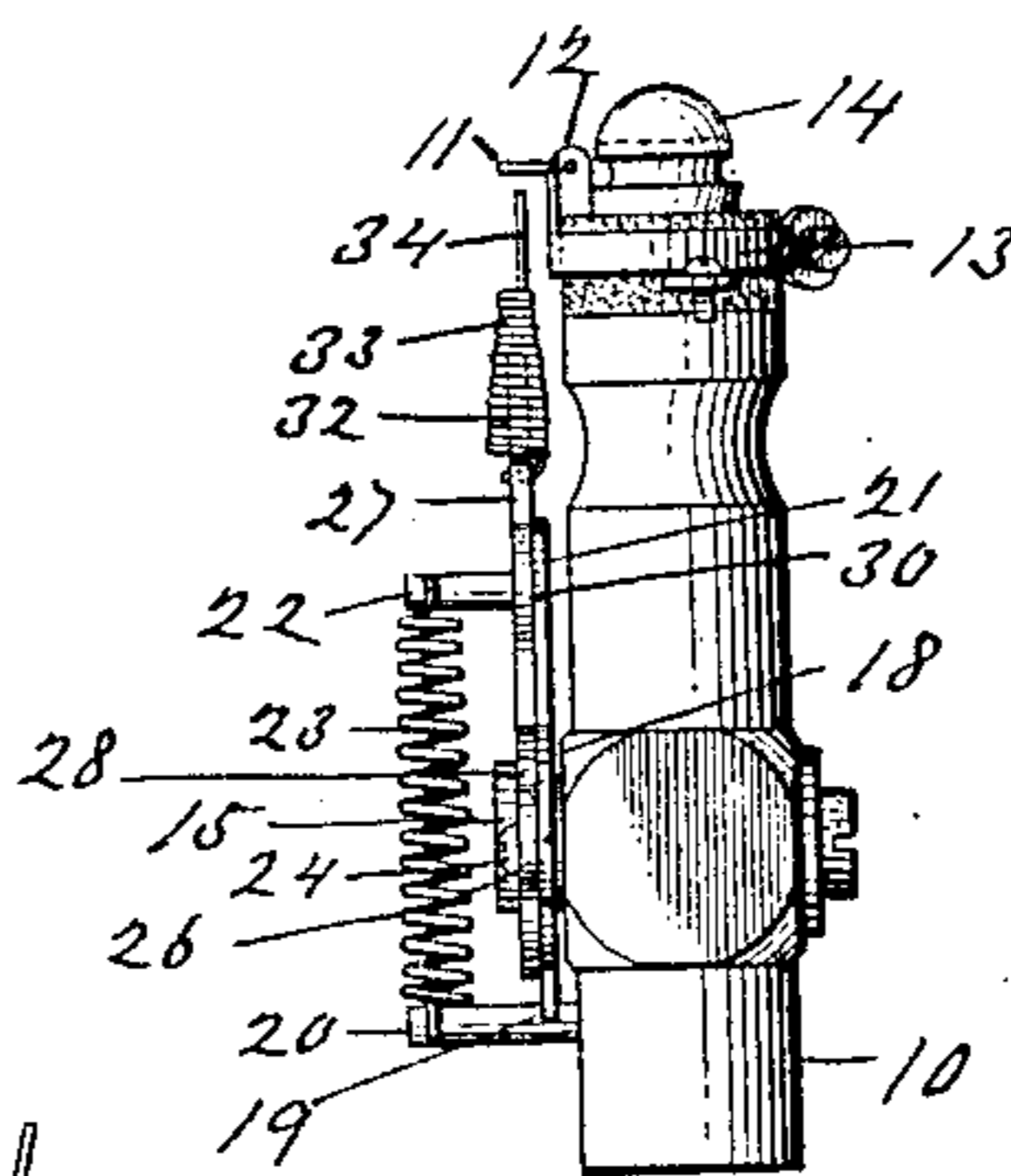


Fig. 4.

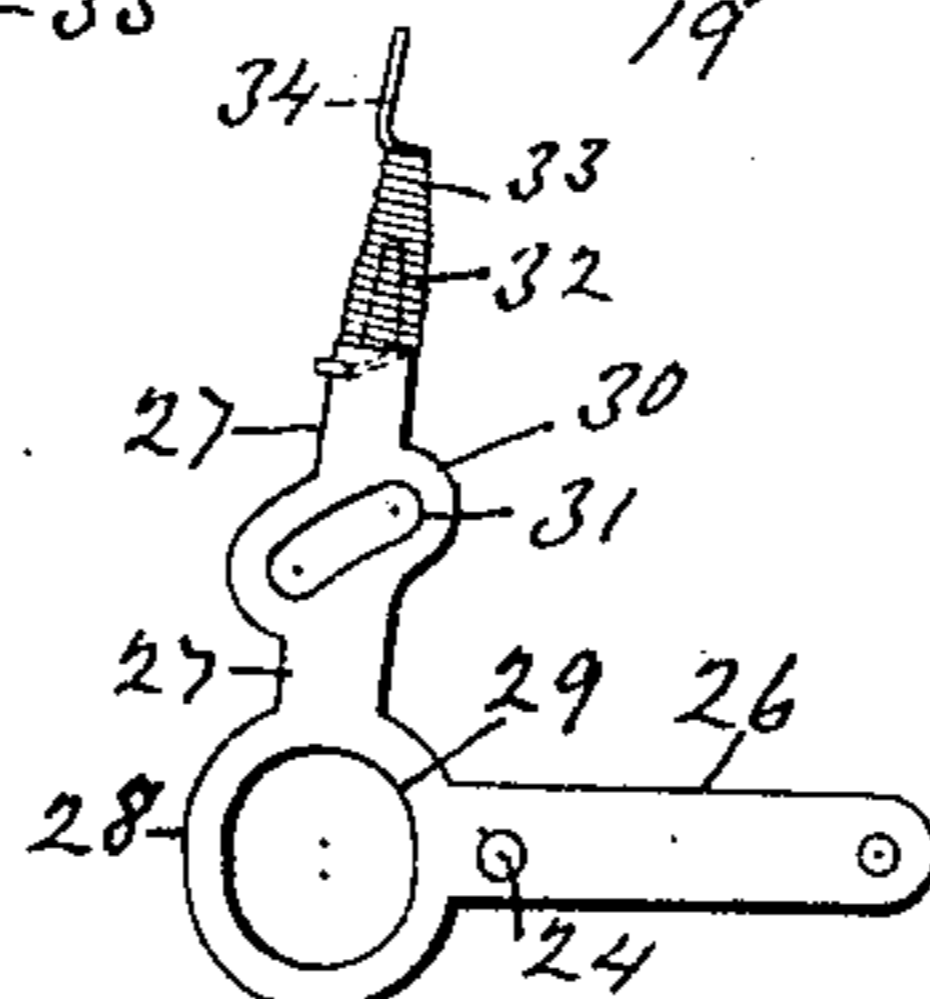


Fig. 5.

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UNITED STATES PATENT OFFICE.

ARTHUR J. PERKINS, OF REVERE, MASSACHUSETTS, ASSIGNOR TO BOSTON ELECTRIC COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

ELECTRIC HAND-LIGHTING GAS-BURNER.

No. 916,776.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed October 21, 1908. Serial No. 458,814.

To all whom it may concern:

Be it known that I, ARTHUR J. PERKINS, a citizen of the United States, residing at Revere, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Electric Hand-Lighting Gas-Burners, of which the following is a specification.

This invention relates to that class of electric hand-lighting gas-burners of the "pull down" type in which the pulling down of an arm or lever turns on the gas-cock and at the same time swings a spring-electrode into contact with an electrode at the burner-tip, thus igniting the gas by an electric spark, the gas being turned off by a reverse movement of the arm or lever; an example of an invention of this class being illustrated and described in Letters Patent of the United States dated June 26, 1900, and numbered 652,430. In burners of this general description there has been much complaint that the movable pin which has been employed in connection with the swinging electrode is liable to stick, and thus the cone-spring is unable to rise into contact with the electrode at the tip. This tendency to stick is by reason of the fact that when the burner is on the fixture there is very soon an accumulation of dust and dirt, clogging the pin. This necessitates the burner being frequently repaired or discarded.

My present invention has for its object to produce an improved construction whereby the movable electrode pin is entirely discarded, whereby the burner is rendered more simple in construction and efficient in operation, and whereby the danger of the parts being out of repair is reduced to a minimum.

The nature of the invention is fully described in detail below, and illustrated in the accompanying drawings, in which:—

Figure 1 is a front view of my improved burner with the gas turned off. Fig. 2 is a similar view with the spring-electrode making contact with the electrode at the tip during the act of turning on the gas. Fig. 3 is a similar view taken while the gas is being turned off just before the spring-electrode has reached the point where it passes under the electrode at the tip without making contact with it. Fig. 4 is a side view with the parts in the same position as in Fig. 3. Fig. 5 is an elevation of the plate or member

which is mounted on the spindle of the gas-cock, removed. Fig. 6 is a view in elevation of the electrode-carrying lever removed.

Similar numerals of reference indicate corresponding parts.

Reference-numeral 10 represents a burner-pillar provided with an electrode 11 mounted on and extending horizontally from the post 12 which is rigid with the insulated collar 13 in suitable proximity to the tip 14.

15 is the gas-cock, constructed as usual. Mounted on the spindle of the gas-cock and adapted to be rotated thereby by means of the straight edge 16 of the opening 17 is a plate or disk whose main portion or hub 18 is provided with a pair of teeth 19, which are adapted to strike on opposite sides of the pin 20 which extends horizontally from the burner-pillar, thus limiting the rotation or reciprocation of the plate or disk.

Thus far the parts described are not new in this invention.

The plate 18 is provided with a substantially radial arm 21 which is provided with a horizontally extending pin 22. A spiral spring 23 connects the pins 20 and 22. Pivotaly connected at 24 to a small radial extension 25 integral with the plate 18, is the arm 26 of an elbow-lever or lifting-lever which comprises said arm 26 and the arm 27. The arm 27 is broadened at 28 near the pivot 24, and this broadened portion is provided with a slot 29 elongated in line with the arm 27, into which slot extends the spindle of the gas-cock 15. Furthermore the arm 27 is broadened diagonally at 30 in order to provide the diagonal slot 31 into which the pin 22 extends. The outer end of said arm 27 is formed into cone-shape 32, and at said end the arm is provided with the coiled spring 33 whose upper end is formed into the electrode point 34.

When the gas is turned off, as illustrated in Fig. 1, the arm 26 of the lifting-lever is elevated, and the arm 27 is swung down resting by gravity by means of its slotted portion 30, 31 on the pin 22 which extends from the arm 21 of the disk or plate 18, said arm 21 being held down toward the left by the power of the spring 23 which connects the pins 22 and 20, and the further swinging down of the arm 21 being prevented by the left hand tooth 19 which bears against the pin 20 and limits the rotation of the disk 18. When the gas is turned on, the wire or cord 35 is pulled, draw-

ing down the arm 26 of the lifting-lever which is swung on the pivot 24 extending from the portion 25 of the disk 18. In this process the lower edges of the slots 29 and 30 first swing
 5 up against the spindle of the gas-cock 15 and against the pin 22 respectively, and thus the slotted arm 27 swings up the arm 21, imparting rotation to the disk 18 against the power of the spring 23, and the electrode point 34 is
 10 brought up toward the electrode 11, until when it reaches the position illustrated in Fig. 2 it makes contact and turns on the gas. After the electrode point 34 has swung toward the right under and out of contact with
 15 the electrode 11, the continued pull on the wire 35 causes the arm 27 to pull the arm 21 by the center, and the spring 23 holds the parts in an open position with the right hand tooth 19 bearing against the pin 20. When
 20 the gas is to be turned off the lifting of the arm 26 of the lever first causes the arm 27 to swing to the left, and drop with the upper edges of the slots 31 and 29 resting upon the pin 22 and gas-cock 15 respectively, the drop
 25 being sufficient to lower the upper end of the electrode point 34 so that it is able in its movement toward the left to clear the electrode 11 and to make no contact with it as it moves under it, the position of the parts as
 30 the electrode 34 is approaching (and being under) the electrode 11 being well illustrated in Figs. 3 and 4, in which the lever is seen to be resting by gravity with the upper ends of the said slots in contact with the pin 22 and
 35 gas-cock 15. As the upward pressure on the arm 26 is continued the spring 23 pulls down the arm 21 and draws the parts into the position illustrated in Fig. 1, turning off the gas.

It will be seen that the operating lever is
 40 one integral piece of metal, and that when the cord or wire is pulled the spiral spring 33 is not moved with relation to the lever as it is in a fixed position thereon. It is not raised by any bolt or pin which moves or slides with
 45 relation to the lever, but it is raised directly by the lever itself. Its movement therefore is positive and not relative to that of the lever, and there is no opportunity for any of the parts to stick or become clogged by the
 50 accumulation of dust or dirt. As long as the lever can be operated the electrode will swing up and make contact, and will swing back without making contact.

Having thus fully described my invention,

what I claim, and desire to secure by Letters Patent is:—

1. In an electric hand-lighting gas-burner provided with an oscillating gas-cock, the burner-pillar, a fixed electrode supported by the pillar, a disk or plate rigid on the spindle
 60 of the gas-cock, means for limiting the rotation of the disk, an elbow-lever one arm of which is pivotally supported by the disk or plate at one side of the center of the disk and the other arm of which is provided with a
 65 longitudinal slot near its inner end into which the gas-cock extends and with a diagonal slot between the longitudinal slot and the outer end of the arm, a pin extending from the disk through the diagonal slot, a spring connect-
 70 ing said pin with the burner-pillar, and an electrode fixed directly to and upon the outer end of the slotted arm of the lever, for the purpose set forth.

2. In an electric hand-lighting gas-burner
 75 provided with an oscillating gas-cock, the burner-pillar, a fixed electrode supported by the pillar, a disk or plate rigid on the spindle of the gas-cock and provided with a substantially radial arm, means for limiting the ro-
 80 tation of the disk, an elbow-lever one arm of which is pivotally supported by the disk or plate at one side of the center of the disk and the other arm of which is provided with a longitudinal slot near its inner end into which
 85 the gas-cock extends and with a cam-slot between the longitudinal slot and the outer end of the arm, a pin extending from the arm on the disk through the cam-slot, a spring connecting said pin with the burner-pillar, and
 90 an electrode fixed directly to and upon the outer end of the slotted arm of the lever, whereby swinging the lever in one direction turns on the gas and brings the electrode thereon into contact with the electrode sup-
 95 ported by the burner-pillar and swinging it in the opposite direction turns off the gas and allows the slotted arm of the lever and the electrode thereon to pass under the electrode on the burner-pillar without contact there-
 100 with.

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

ARTHUR J. PERKINS.

Witnesses:

HENRY W. WILLIAMS,
 M. A. ATWOOD.