

No. 654,355.

Patented July 24, 1900.

J. Y. PARKE.  
ELECTRIC GAS LIGHTER.

(Application filed May 9, 1899.)

(No Model.)

Fig. 1.

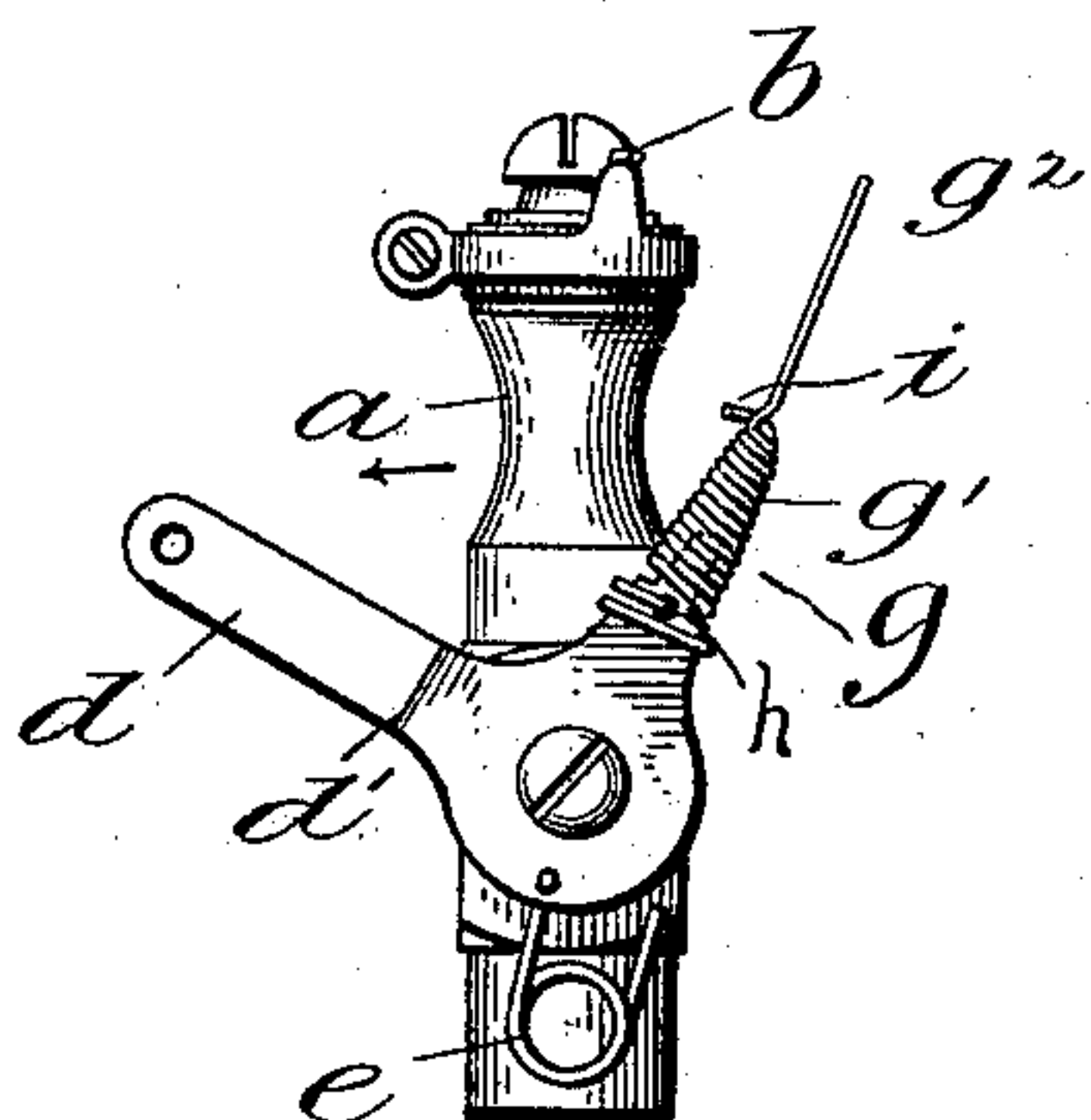


Fig. 2.

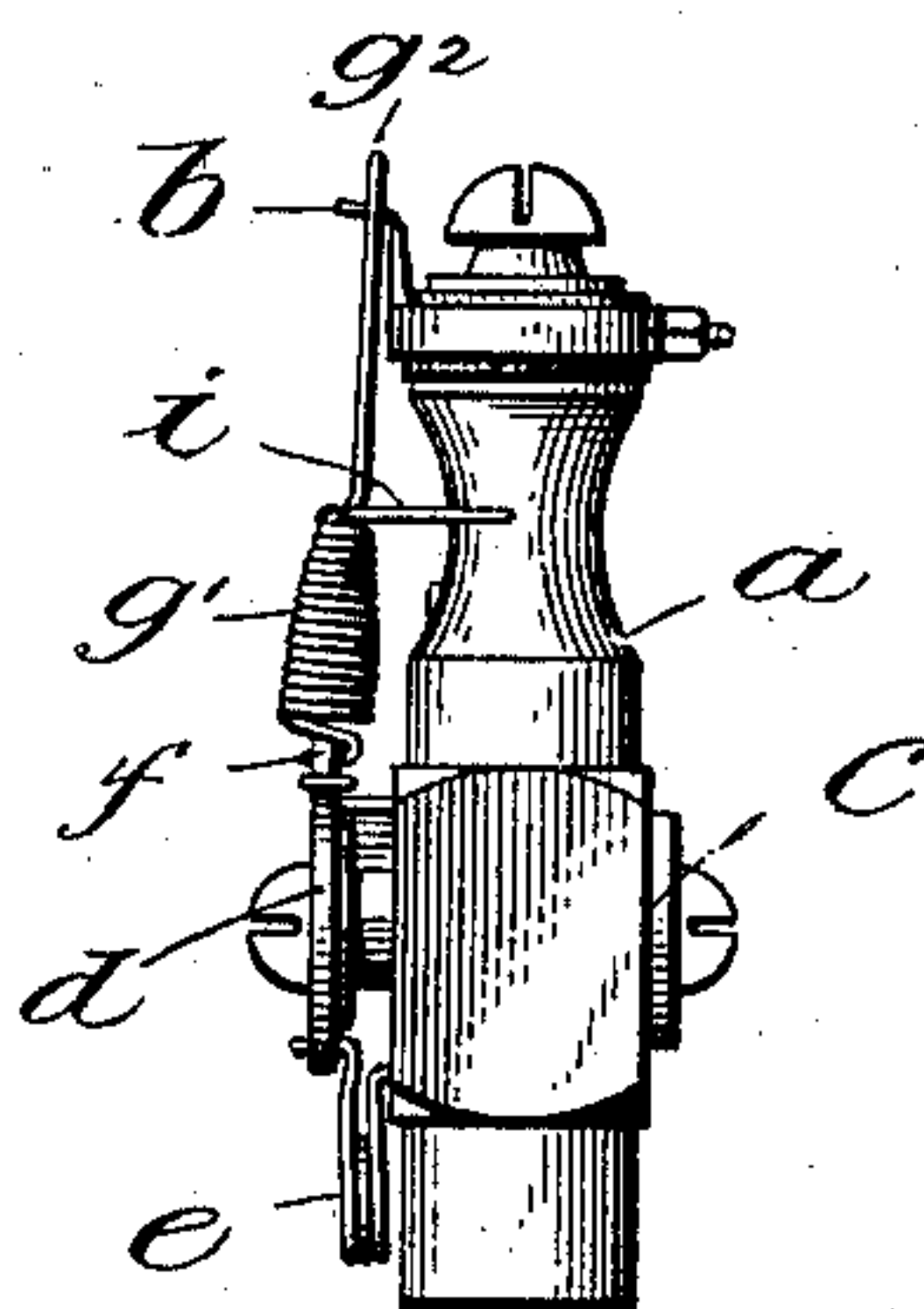


Fig. 3.

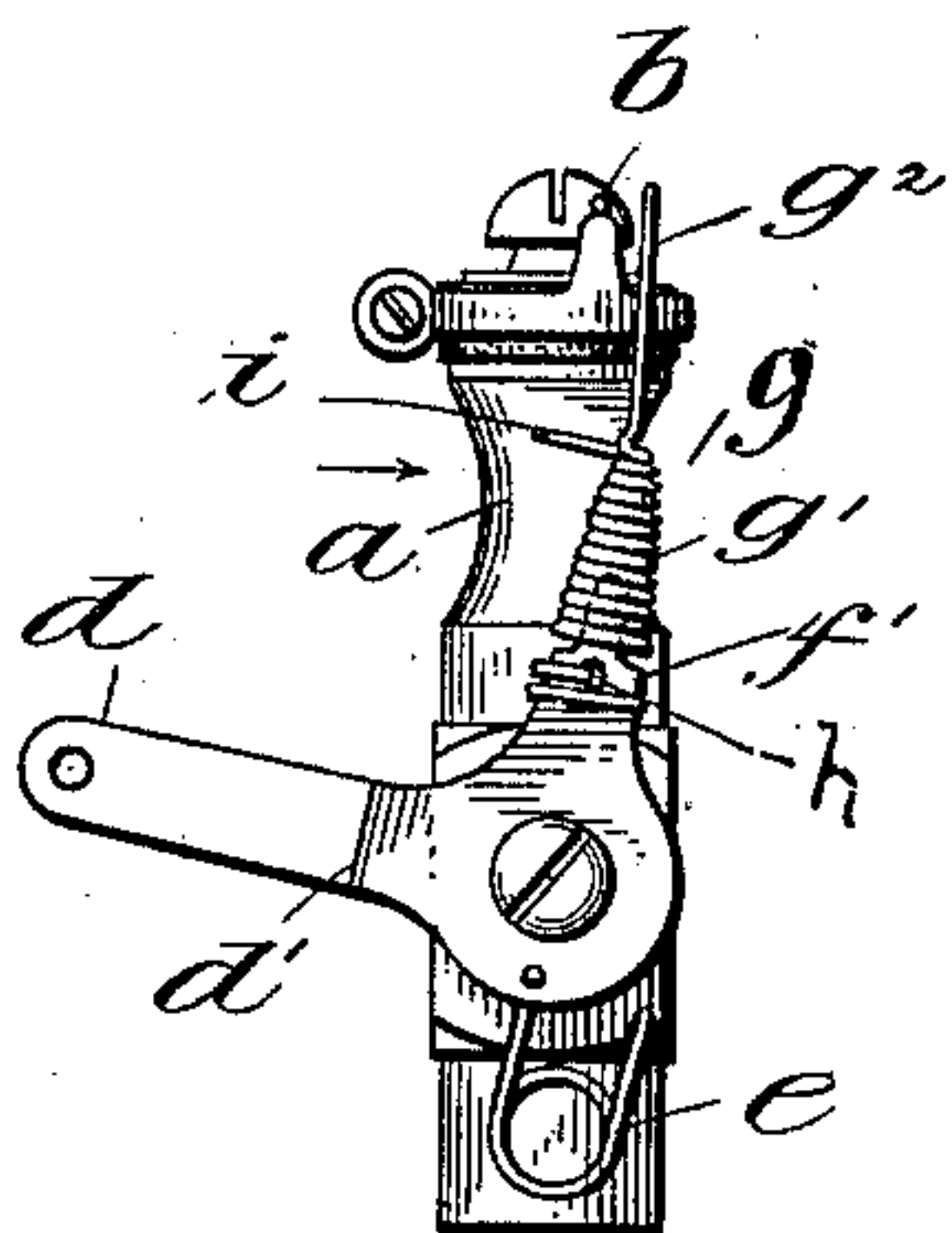


Fig. 4.

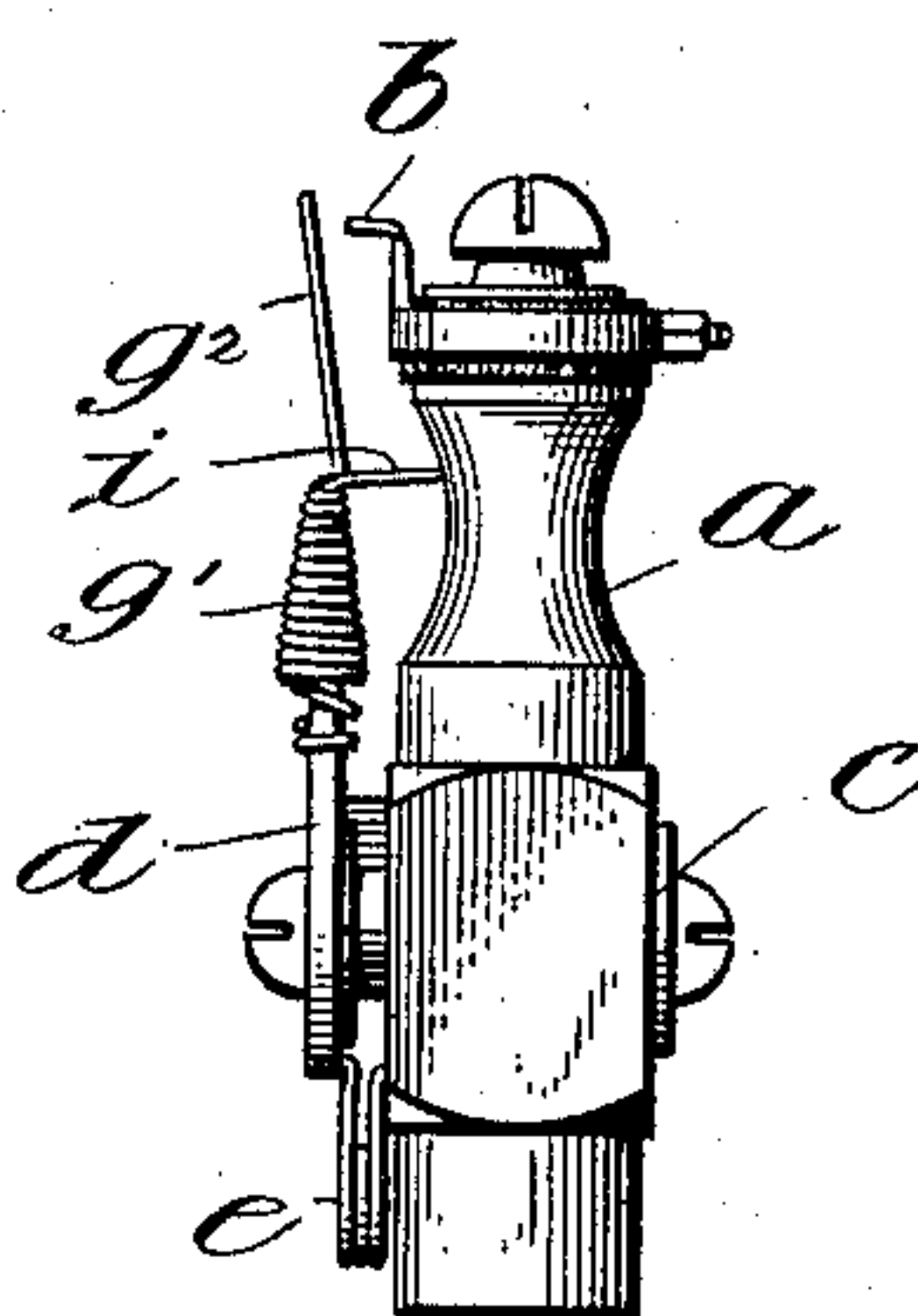
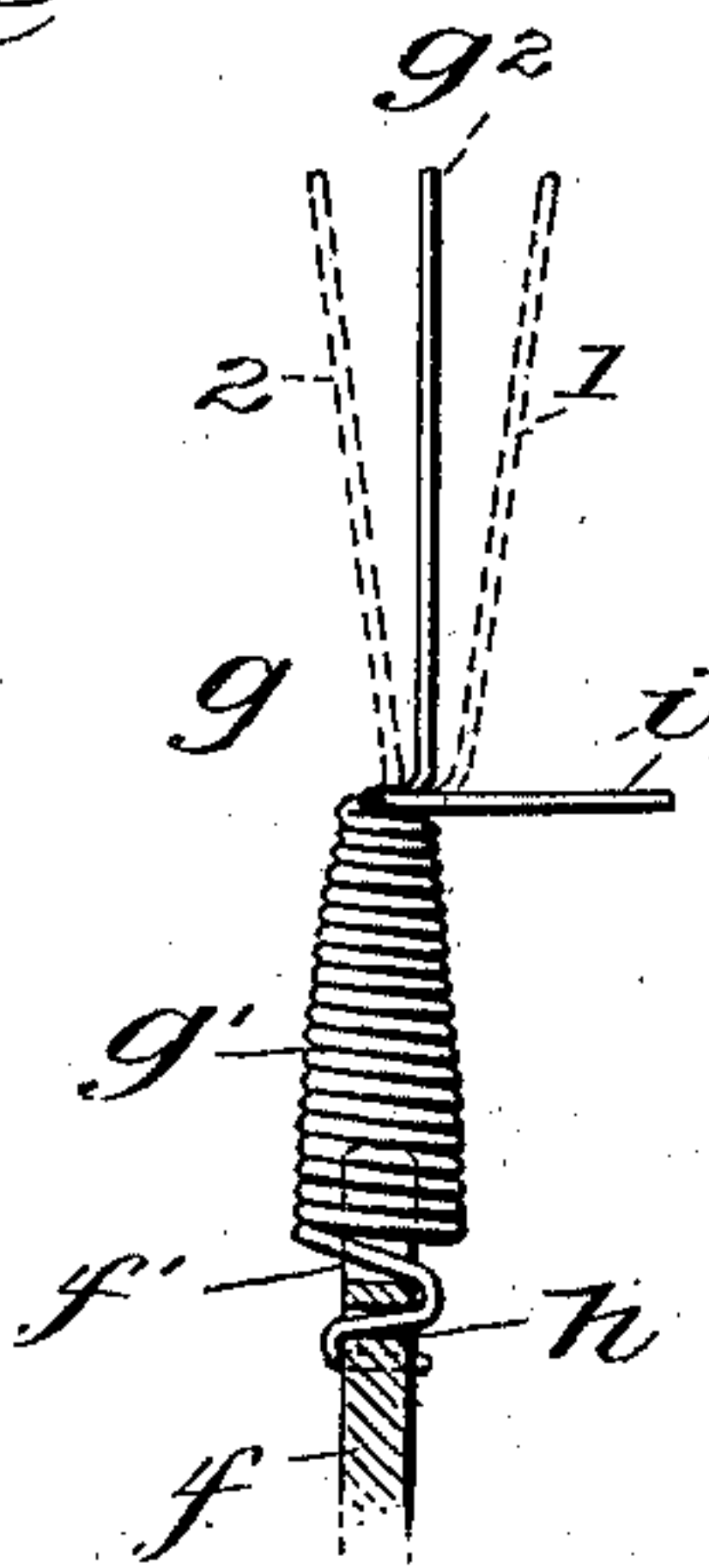


Fig. 5.



Witnesses.

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# UNITED STATES PATENT OFFICE.

JOHN Y. PARKE, OF PHILADELPHIA, PENNSYLVANIA.

## ELECTRIC GAS-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 654,355, dated July 24, 1900.

Application filed May 9, 1899. Serial No. 716,121. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN Y. PARKE, a citizen of the United States, and a resident of the city of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Electric Gas - Lighters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to certain improvements in electric gas-lighting devices, and particularly to that class in which the turning of the cock to admit the flow of gas simultaneously operates a sparking device arranged near the tip of the burner to ignite the gas.

Heretofore many forms of devices have been employed for accomplishing this same purpose, all of which are complicated in their structure, containing so much delicate mechanism—such as ratchets, pawls, springs, and various other devices—for preventing the movable electrode on its return movement, as when the gas-cock is turned to cut off the gas-supply, from coming in contact with the fixed electrode and making an unnecessary spark, such complications all tending to decrease the durability and efficiency of the device on account of its liability to get out of order and also greatly increasing the cost of manufacture.

The object of my present invention is to obviate all of these objections by providing an improved form of movable electrode which will contact with the fixed electrode on one movement as the gas flow is turned on and pass in front of and clear the same on its return movement as the gas flow is cut off without employing any intricate or complicated mechanism, and thereby producing an efficient and durable device and inexpensive to manufacture.

To this end my invention consists in the construction substantially as herein set forth, and particularly pointed out in the claims made hereto.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference are used to indicate similar parts, Figure 1 is a side elevation of a burner embodying my invention, showing the normal position of the movable

electrode when the gas is turned off. Fig. 2 is an end elevation showing the position of the parts at or about the time the gas is permitted to flow, the two electrodes being in contact with each other. Fig. 3 is a side elevation showing the position of the parts on the return movement of the electrode as the gas is being turned off. Fig. 4 is an end elevation showing the position of the parts on the return movement of the electrode, as in Fig. 3. Fig. 5 is an enlarged detail view of the movable electrode, the dotted lines illustrating the positions of the upper part of said electrode on its forward and return movements.

In the said drawings, *a* designates the burner, which may be of any of the usual constructions, having secured at or near its tip a stationary or fixed electrode *b*, insulated from the burner in the usual manner. The burner is provided with a cut-off valve *c* for controlling the flow of the gas to the burner by being moved to alternately open and close the passage, as in the ordinary construction.

Rigidly secured to one end of the cut-off valve is a lever *d*, by means of which the cut-off valve *c* is operated. This lever *d* is bent inwardly to form a shoulder *d'*, which bears against the burner-body when the gas-supply is cut off and the parts are in the position shown in Fig. 1 of the drawings, and also when the gas is turned on, and limits the movement of the said lever *d* in both directions, the spring *e* serving to normally hold the lever in both positions.

Formed integral with the lever *d* and extending at about right angles thereto is an arm *f*, having a reduced upper end *f'*, adapted to carry the yielding movable electrode *g*. This electrode *g* is shown as formed of a thin spring-wire having its lower end rigidly secured to the arm *f* by passing through the aperture *h* and being wound around the same. The wire is then wound into a coil, as *g'*, for a portion of its height and terminates in a straight wire, as *g''*, which extends upwardly beyond the height of the fixed electrode *b*. At the top of the coiled portion *g'* of the electrode is an arm *i*, extending inwardly toward the burner-pipe at about right angles to the portion *g''*, as clearly illustrated in Fig. 5 of the drawings. This arm *i* is soldered to the top of the coil *g'* and extends inwardly a



sufficient distance to bear against the sides of the burner-pipe during the forward and backward movement of the electrode *g*.

The normal position of the parts is shown in Fig. 1 of the drawings, the gas flow being cut off, and in operation the lever *d* is pulled down, which causes the electrode *g* to move in the direction of the arrow in Fig. 1 and the arm *i* to come in contact with the burner-pipe *a*, which action pushes the said arm around, tightens the coil *g'*, and causes the wire *g*<sup>2</sup> to assume the position shown in Fig. 2 of the drawings and in dotted lines at 1 in Fig. 5. This movement causes the wire *g*<sup>2</sup> to be brought in contact with the fixed electrode *b* with a wiping movement and produces a spark when the said contact is broken, which occurs nearly at the end movement of the lever *d* and just as the gas flows into the burner, so that it will be instantly ignited. When it is desired to turn off the gas, the lever *d* is returned to its normal position by being moved upwardly, the spring *e* serving to assist in its quick return immediately after the said lever is started. On this return movement the arm *i* wipes against the side of the burner-pipe and turns the coil *g'* slightly in an opposite direction to that described in the initial operation, which action causes the finger *g*<sup>2</sup> to assume the position shown in dotted lines at 2 in Fig. 5 and pass in front of the fixed electrode *b* without coming in contact therewith, as illustrated in Fig. 4. Thus it will be readily understood that the arm *f*, carrying the movable electrode *g*, reciprocates past the fixed electrode both when the valve is operated to admit the supply of gas and to cut off the same; but owing to the peculiar formation of the electrode *g* and the function of its arm *i* the finger *g*<sup>2</sup> is not permitted to engage the fixed electrode except at every other reciprocation, when the valve is operated to turn on the flow of gas. The transversely-extending arm *i* serves the double function of insuring the contact of the two electrodes during the turning on of the gas and preventing such contact when the gas is turned off.

In burners of this general character the spring which is used for holding the operating-lever in normal position may break or otherwise become displaced, whereupon the arm *d*, carrying the chain, is liable to drop by gravity and cause the two electrodes to contact and thereby ground the circuit. In my construction this objection is obviated by reason of the arm *i* of the movable electrode, which upon such movement of the lever *d* comes in contact with the burner-body and is sufficiently stiff to arrest such movement of the arm and its electrode before the said electrode reaches the fixed electrode, thus preventing their contact.

I do not wish to limit myself to the exact construction shown in the drawings, as the details of construction might be varied without departing from the spirit and scope of my invention.

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

1. In an electric gas-lighting device, the combination with a burner having a fixed electrode secured near its tip, of a movable electrode adapted to oscillate with the gas-valve as the said valve is turned, an arm secured to the movable electrode about midway of its length extending in the path of the burner-pipe, said arm being constructed and arranged so as to contact with the burner-pipe and to guide the movable electrode on the return movement in front of and out of electrical contact with the fixed electrode, substantially as described.

2. In an electric gas-lighting apparatus, an inwardly-projecting arm attached to the movable electrode constructed and arranged to come into physical contact with the burner-pipe upon the return movement of the movable electrode and to guide the movable electrode on such return movement in front of and out of electrical contact with the fixed electrode, said arm in connection with the movable electrode being arranged to yield on the forward sweep so as not on such movement to prevent electrical contact of the two electrodes, substantially as described.

3. In an electric gas-lighting apparatus, a fixed electrode secured near the burner-tip, a yielding electrode carried by the operating-lever, an arm secured to said yielding electrode intermediate of its length extending in the path of the burner-body adapted on its return movement to so contact with the burner-body as to guide the movable electrode away from the fixed electrode and arranged and constructed in the forward movement of the movable electrode as to yield when in contact with the burner-body so as not to prevent electrical contact of the two electrodes, substantially as described.

4. In an electric gas-lighting apparatus the combination with the burner having a fixed electrode secured near its tip, a one-way gas-valve, a movable electrode and operating-lever secured thereto and adapted to oscillate as the said gas-valve is turned on and off, an arm secured to the movable electrode about midway of its length extending in the path of the burner-pipe, said arm being constructed and arranged to guide the movable electrode by physical contact with the burner-body on the return movement out of electrical contact with the fixed electrode and adapted to yield in the forward sweep so as not to prevent electrical contact of the two electrodes upon said forward sweep, substantially as described.

5. In an electric gas-lighting apparatus, the combination of the burner-body, a fixed electrode, an oscillating lever connected with the gas-valve for controlling the gas-supply, a movable electrode carried by said lever comprising a coiled section terminating in an upwardly-projecting straight finger, and an arm secured to the top of the coiled section dis-



posed substantially horizontally constructed and arranged to make physical contact with the body of the burner on the return movement of the movable electrode to guide said electrode on such movement out of electrical contact with the fixed electrode and arranged to yield on the forward sweep so as not to prevent electrical contact of the two electrodes at that time, substantially as described.

10 6. In an electric gas-lighting apparatus, a movable electrode comprising a coiled spring terminating in an upwardly-projecting member for contacting with the fixed electrode and a transversely inwardly projecting member adapted to make physical contact with the burner-body on the return sweep to prevent electrical contact of the electrodes and constructed to yield on the forward sweep when in contact with the burner-body so as not to prevent electrical contact in such forward sweep, substantially as described.

20 7. In an electric gas-lighting device, the combination of the burner-body, a fixed electrode carried thereby, a movable electrode adapted to contact with the fixed electrode, and an operating-lever connected with the gas-valve having an arm, *d*, bent inwardly as

at *d'*, and terminating in a substantially L-shaped extension, for the purpose specified.

8. In an electric gas-lighting apparatus, a movable electrode comprising a spring-arm terminating in an upwardly-projecting member for contacting with the fixed electrode, a movable oscillating arm connected with the gas-valve, said movable spring-electrode being mounted upon said oscillating arm, an inwardly-projecting arm secured to said spring-electrode about midway in its length transversely disposed thereto adapted to make physical contact with the burner-body on the return sweep to push the movable electrode away from the fixed electrode to prevent electrical contact of the electrodes and constructed to yield on the forward sweep when the said transverse arm is in contact with the burner-body so as not to prevent electrical contact of the electrodes in such forward sweep, substantially as described.

In witness whereof I have hereunto set my hand this 5th day of May, A. D. 1899.

JOHN Y. PARKE.

Witnesses:

BENJ. F. PERKINS,  
HORACE PETTIT.