(No Model.)

J. Y. PARKE.

ELECTRIC GAS LIGHTER.

No. 583,630 Patented June 1, 1897.

FIG. 1

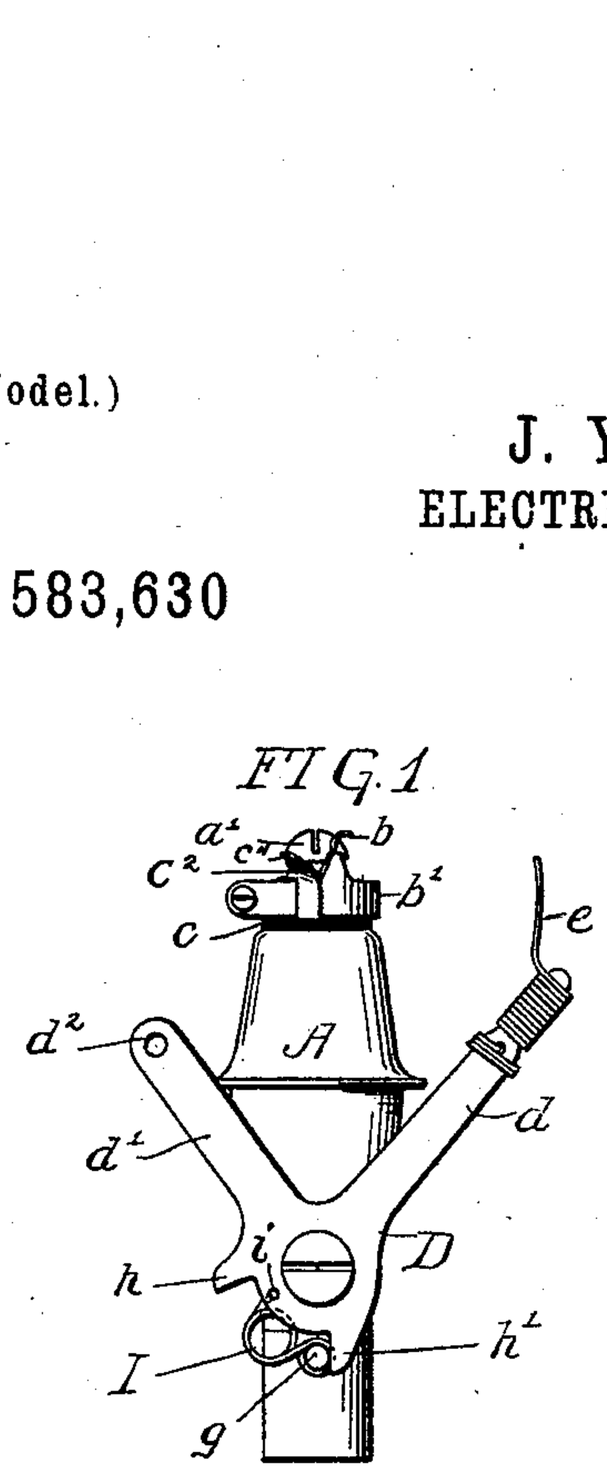


FIG. 2

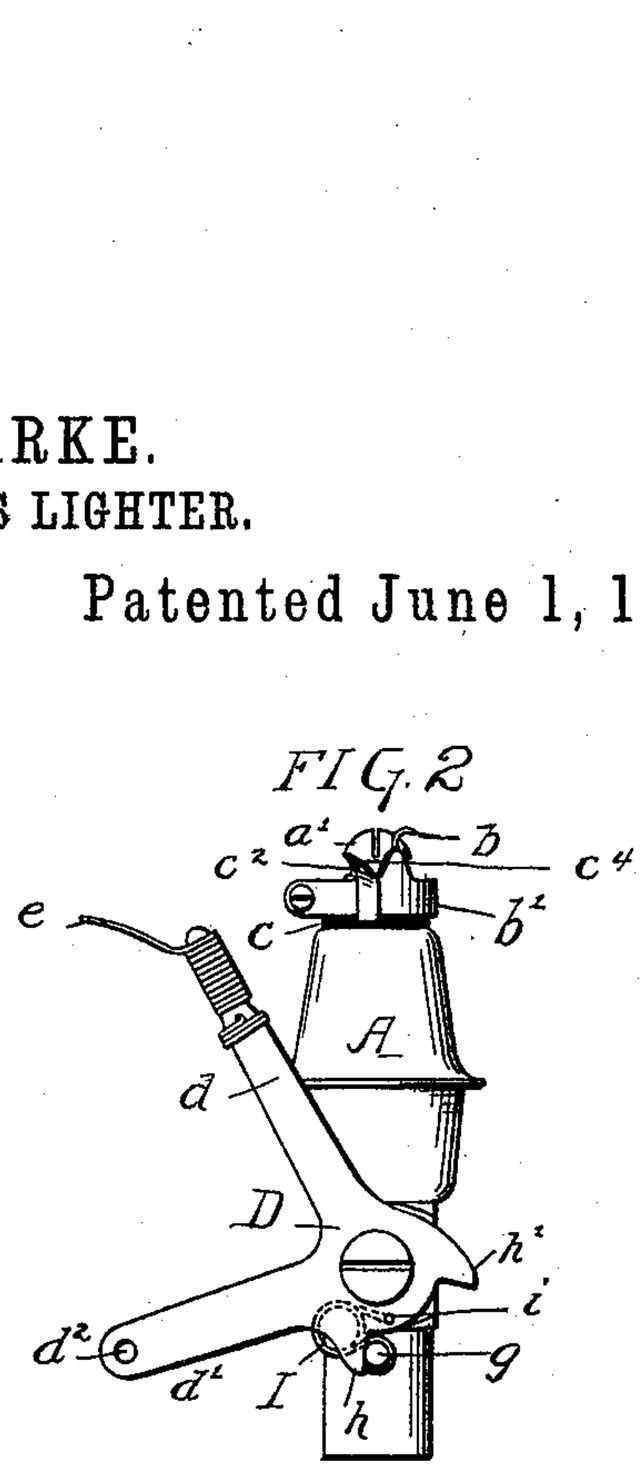


FIG. 3

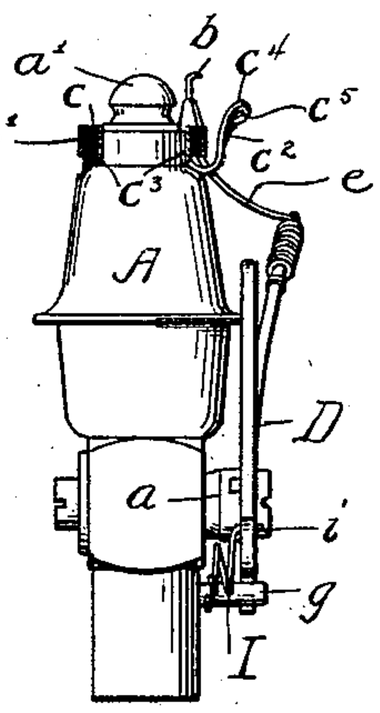


FIG. 4

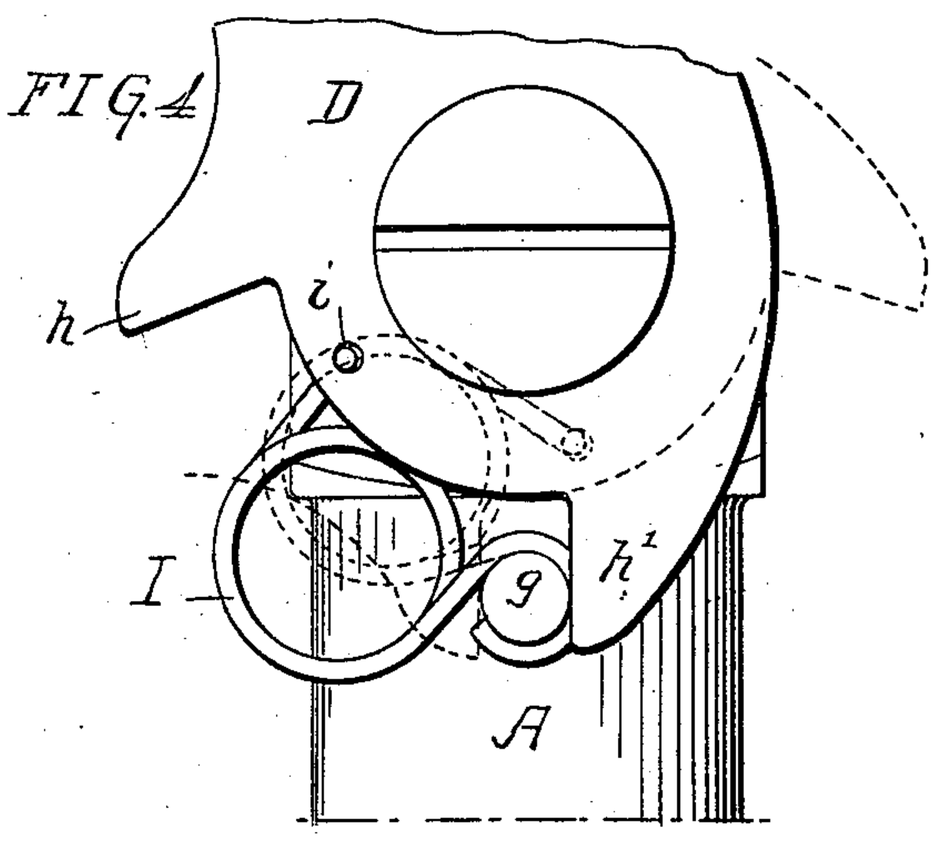


FIG. 5

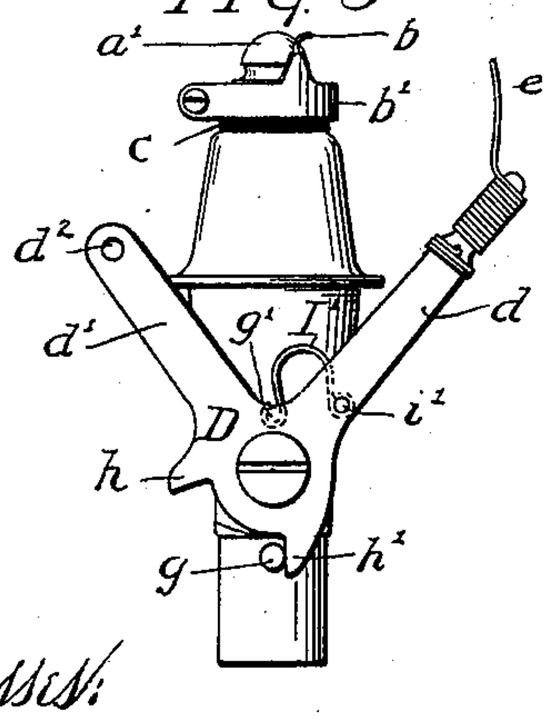
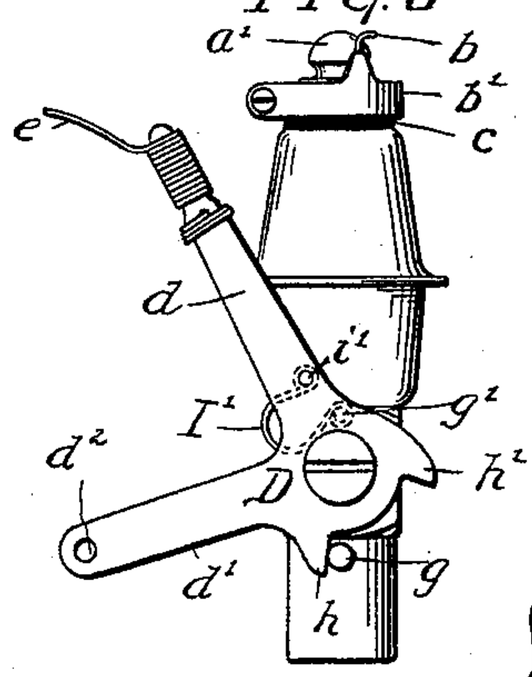


FIG. 6



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By his Attorneys.
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UNITED STATES PATENT OFFICE.

JOHN Y. PARKE, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRIC GAS-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 583,630, dated June 1, 1897.

Application filed January 2, 1897. Serial No. 617,724. (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, 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 of that class in which an electrode carried by a lever connected to the gas-cock of the burner makes and breaks contact with a second electrode close to the burner-tip to effect the ignition of the gas as contact between the electrodes is broken.

The principal object of my invention is to provide an electric gas-lighter of this class with an improved form of spring holding device which will hold the lever in either of the two positions to which the latter is moved; and a further object of the invention is to provide a construction of burner which will prevent contact between the electrodes when the movable electrode is being moved to the rear to shut off the light, as more fully set forth hereinafter.

In the accompanying drawings, Figure 1 is an elevation of an electric gas-lighter constructed in accordance with my invention, showing the pendent lever in the position in which it is normally held before the gas is ignited. Fig. 2 is a similar view illustrating the lever in the position to which it is moved in igniting the gas. Fig. 3 is a side elevation, partly in section, of the device with the parts in the position shown in Fig. 1. Fig. 4 is a fragmentary view, on an exaggerated scale, illustrating more clearly the action of the holding-spring; and Figs. 5 and 6 are views similar to Figs. 1 and 2, respectively, illustrating a slightly-modified arrangement of the holding-spring.

Referring to the drawings, A represents a burner of the ordinary type, provided with a gas-cock a and a tip a'. At a point close to the burner-tip is secured the fixed electrode b, preferably on a ring b', clamped around the upper portion of the burner and insulated therefrom by asbestos or other material c.

Secured to the spindle of the cock a is a pendent lever D, having two arms d d', arranged at about right angles to each other, the arm d being provided with the movable electrode e and the arm d' having at its outer end an orifice d^2 for connection with a pendent wire of any ordinary construction.

Secured to and projecting from one side of the burner is a pin g, adapted to form a stop for lugs h h', projecting from the pendent lever and determining the extent of travel of the pendent lever and the two positions which the latter assumes both before and after the gas is ignited. To this pin g is secured one end of a spring I, having, preferably, one or more coils, and secured at its opposite end in an opening i, formed in the pendent lever, the relative positions of the gas-cock or fulcrum-point of the lever, the opening i, and the pin g being such that when the lever is in the initial position before the electrodes have made contact the opening i will be to one side of a line drawn vertically through the center of the gas-cock and the center of the pin g, while the movement of the pendent lever to turn on and ignite the gas will move the opening i to a position on the opposite side of such a vertical line. These two positions of the pendent lever are illustrated in Figs. 1 and 2 and on an enlarged scale in Fig. 4, the full lines in Fig. 4 illustrating the position of the parts as shown in Fig. 1 and the dotted lines the position illustrated in Fig. 2. It will be seen that when the lever is in the position shown in Fig. 1 the spring tending to straighten out will act to throw the arm d to the right, and when the lever is in the position shown in Fig. 2 the spring, being connected to a point on the lever then to the right of a vertical line through the gas-cock and pin g, will tend to move the arm d in the opposite direction.

The relative positions assumed by the opening i is such that while it passes but slightly to the right of a line extending through the gas-cock and the pin g after moving to the position shown in Fig. 2 the position of the opening is sufficient to insure the holding of the pendent lever in its then position, while at the same time a very slight upward push of the arm d' will move the opening i across and past this vertical line, and the spring in straightening or uncoiling will complete the

movement of the pendent lever and force it to reassume the initial position illustrated in Fig. 1.

In the modification illustrated in Figs. 5 and 6 the same effect is gained in substantially the same manner by mounting the spring above the gas-cock, one end of the spring I′ being connected to a pin g' on the burner and its opposite end being connected to a pin i' on the pendent lever. The action of the spring in this case is precisely the same as that previously described, the spring in tending to straighten serving to lock the pendent lever in either position to which it may have been moved.

The spring I may be in the form of a simple strip of flat metal or wire extending between the pendent lever and the securing-pin of the burner, as shown in Figs. 5 and 6, or it may have one or more coils, as shown in Figs. 1 and 4, as desired. The connection between the end of the spring and the pendent lever may be made by bending the end of the spring and passing it through an opening, as i, formed in the pendent lever, or the connection may be made by means of a pin, as i', (illustrated in Fig. 5,) either secured to the lever or forming an integral part thereof.

In order to prevent contact between the electrodes when the movable electrode is moved back to turn off the light and thus avoid waste of battery, I employ a curved guard-plate c^2, secured to or formed integral with a collar or clip c^3, which is placed around and in contact with the upper portion of the burner A. The collar c^3 is surrounded by insulation c to prevent electrical contact between the collar and the electrode-carrying ring b'. The upper outer end of the guard-plate c^2 is curved in such manner that it does not interfere with the contact of the electrodes when the electrode e is moved to ignite the gas. When, however, the electrode e is moving in the opposite direction and the supply of gas is being cut off, the electrode e comes into contact with the guard-plate, and any contact with the electrode b is prevented.

The guard-plate c^2 is bent upwardly around and at some distance from the band b', so as to prevent short-circuiting, and its upper edge c^4 is inclined upwardly from that edge nearest the electrode b in such manner as to give sufficient room for the yielding of the spring-electrode e in its passage over and in contact with the fixed electrode b, and is then bent outwardly away from the burner to form a projecting lip or catch c^5, with which the spring-electrode e comes into contact on its return or rearward movement. The lip c^5 bends the electrode outwardly to an extent sufficient to prevent any contact with the fixed electrode during this return movement, and any sparking between the electrodes is thus prevented.

The means of securing the guard-plate c^2 as illustrated in the drawings is preferred, but any other means of fastening may be employed, and the relative position of the guard-plate may be slightly varied.

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

1. In an electric gas-lighter, the combination of a burner having a gas-cock, a fixed electrode near the burner-tip, a pendent lever operatively connected to the gas-cock, an electrode carried by said pendent lever, and a curved spring having two arms normally tending to separate, the ends of said arms being secured respectively to the burner and to the lever and tending to hold such lever in either of the two positions to which it may be moved.

2. In an electric gas-lighter, the combination of the burner having a gas-cock, an electrode secured near the tip of the burner, a pendent lever secured to the gas-cock, an electrode carried by said pendent lever, a fixed stop carried by the burner and adapted to limit the range of movement of the pendent lever, and a curved spring having two arms normally tending to separate, one of such arms being connected to a fixed point on the burner and the opposite arm being connected to the pendent lever, the point of connection between the lever and said arm being such that as the lever is operated the point of connection will be on one or other side of a straight line extending through the burner-cock and the point of connection between the opposite arm of the spring and the burner.

3. In an electric gas-lighter, the combination of the burner, A, a tip, a', thereon, a gas-cock, a pendent lever operatively connected to said gas-cock, an electrode, e, carried by the pendent lever, a collar or clip, c^3 extending around the upper portion of the burner, a guard-plate, c^2, having its upper edge, c^4, inclined and bent outwardly to form a lip or catch, c^5, for contact with the electrode, e, on its return movement, a band, b', extending around the upper portion of the burner and insulated therefrom, and a fixed electrode, b, carried by the band, b', for contact with the movable electrode on its forward movement, substantially as specified.

4. In an electric gas-lighter, the combination of the burner having a gas-cock, an electrode secured in position near the burner-tip, a two-armed pendent lever secured to the gas-cock, an electrode carried by one arm of said lever, lugs on said lever, a fixed stop-pin projecting from the burner and adapted to make contact with said lugs, a torsion-spring having one end secured to said stop-pin and having its opposite end secured to the pendent lever in such manner that the point of connection between the pendent lever and the spring will be on opposite sides of an imaginary line extending through the center of the gas-cock and the center of the stop-pin when the pendent lever is moved to effect the ignition or the shutting off of the gas.

5. In an electric gas-lighter, the combina-

tion of the burner, A, a tip, a', a collar or clip, c^3, surrounding the burner, a guard-plate, c^2, secured to or formed integral with the collar or clip, c^3, a band, b', insulation, c, between the collar, c^2, and said band, a fixed electrode, b, carried by the band, b', a pendent lever, D, a gas-cock to which said lever is operatively connected, and an electrode, e, carried by said pendent lever, substantially as specified.

6. In an electric gas-lighter, a rigid guard affixed to the burner-tip having its upper end bent outwardly to engage the movable electrode and so situated as to permit contact of the fixed and movable electrodes in but one direction of travel of such movable electrode.

7. In an electric gas-lighter having a pendent lever operatively connected with the gas-cock and a fixed electrode secured at or near the burner-tip and a movable yielding electrode secured to the upper end of the pendent lever, a fixed guard secured near the burner-tip in the line of travel of the movable electrode the said guard-plate having at its upper end a lip so inclined as to engage with and direct the movable electrode downwardly and away from the burner-tip to prevent contact of the fixed and movable electrodes in one direction of travel of such movable electrode.

In testimony whereof I have hereunto set my hand this 31st day of December, A. D. 1896.

JOHN Y. PARKE.

Witnesses:
EDMUND S. MILLS,
JNO. E. PARKER.