

(No Model.)

J. W. PALMER.
ELECTRIC GAS LIGHTING APPARATUS.

No. 545,091.

Patented Aug. 27, 1895.

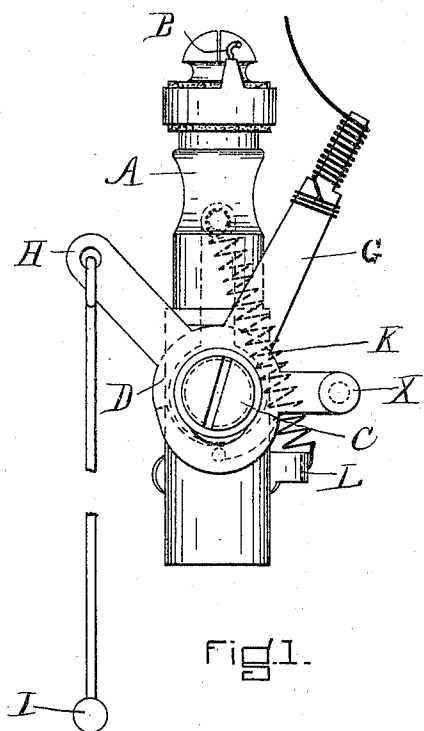


Fig. 1.

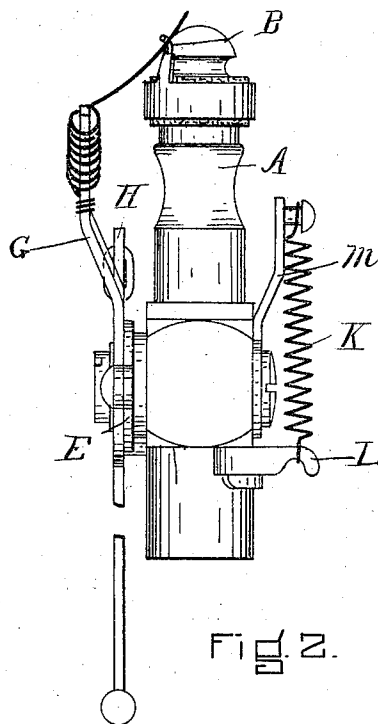


Fig. 2.

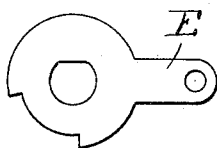


Fig. 4.

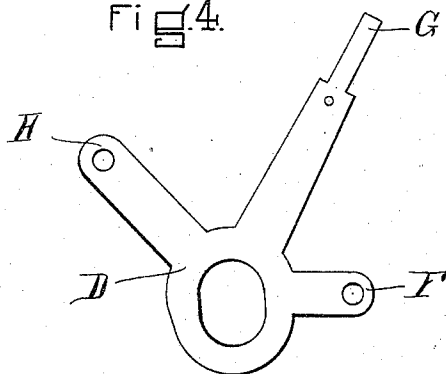


Fig. 3.

WITNESSES.

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UNITED STATES PATENT OFFICE,

JAMES WILL. PALMER, OF NASHUA, NEW HAMPSHIRE, ASSIGNOR TO THE
ELECTRIC GAS LIGHTING COMPANY OF MAINE.

ELECTRIC GAS-LIGHTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 545,091, dated August 27, 1895.

Application filed January 9, 1895. Serial No. 534,291. (No model.)

To all whom it may concern:

Be it known that I, JAMES WILL. PALMER, of Nashua, New Hampshire, have invented a new and useful Improvement in Electric Hand-Lighting Gas-Burners, of which the following is a specification.

My invention relates to electric gas-burners in which a vibrating electrode is operated by means of a stiff wire, which is used to move it both forward and back, said electrode being mounted upon the gas-cock spindle by a device, as shown, including a cam, in order to enable the electrode to rise above the ordinary fixed electrode when the gas is shut off.

The constituents of my burner are, the ordinary gas-pillar having a fixed insulated electrode. The valve oscillates back and forth, and to its spindle is attached a three-arm lever, the center arm carrying the wiping electrode, the left arm to be connected with the operating-wire, and the right arm to be fastened out of the plane of the gas-cock to enable the operation of the cam. A spring is fastened upon the opposite side of the burner upon a projection, and thence to or near the summit of a lever upon the cock, which, being moved to let on the gas, the spring will pass by the point of tension and retain the gas-cock open, and also tend to hold it closed when so desired.

I am aware that a cam has been used to enable the wiping electrode to pass over the fixed electrode upon turning off the gas, but in cases only, so far as I know, of ratchet-wheel hand-lighters with continuously-rotating gas-cocks, in which the cam is to be differently constructed and attached.

My invention will be made plain by reference to the accompanying drawings, in which—

Figure 1 is a front view of my invention when the gas is turned off. Fig. 2 is a side view of my invention, showing the arm H, the flexible end of the arm G, and the fixed electrode B. Fig. 3 is a plan of the part D, containing an oval-shaped slot, for purposes as hereinafter described, the arm H, to which is to be attached the operating-rod I, the arm G, which carries the flexible wiping electrode, which is so well known in these devices as to require no description, and the arm F, by which the part is to be attached, as herein-

after described. Fig. 4 is a plan of the part E, by which the gas-valve is operated and to which the part D is to be loosely pivoted.

I will now refer more particularly to the drawings.

A is the burner-pillar; B, the fixed electrode; C, the gas-cock; D, the three-arm lever pivoted to the plate E at X, attached to the gas-cock and composed of the three arms, which are constructed from one piece of metal and shown, respectively, at F, G, and H. The operating-wire I is attached to the lever-arm H. The spring K is fastened to the projection L and to lever M, attached to the gas-cock. Upon pulling down the wire I a spark will be made as the electrode G passes the fixed electrode and the spring K brought into operation to hold the gas-cock open, all as described.

I will now explain more particularly the parts of my burner, how they are assembled, and their operation. The purpose of the spring K will be seen to be to hold the gas-cock either open or closed, as it will not permit the lever M to remain exactly parallel with the gasway through the burner, but will draw it either to one side or the other. Of course this spring is susceptible of a different construction and location so long as it subserves its purpose. The part E, it will be noticed, has a portion of its circumference cut away, which, by means of a complementary stop, is to limit the extent of the oscillation of the part E, whose center is made of an irregular shape, permitting it to fit upon and so operate the projection of the gas-valve, and its projecting arm, which is shown to be perforated, is intended to be loosely pivoted to the arm F of the part D. It will thus be seen that it is by the part E that the gas-cock is immediately moved. The part D, which has the three arms F, G, and H, will be seen to be provided with an oval slot. This slot is concealed in Fig. 1 of the drawings by the part C, which is a part of the gas-cock. As constructed in the drawings, the part C is the head of a screw, which screw passes through the oval slot in the part D and fits into the irregular slot in the part E, and is held in place in the valve proper (not shown) by means of its threads. This screw-head in Fig. 1 more than covers

the oval slot in the part E; but the shank of the screw is not as large as said oval slot in the part D, whereby the part D is permitted to oscillate.

- 5 Referring now to Fig. 1, it will be seen that if the lever H be depressed by pulling upon the wire I it will swing upon its fulcrum at X, and of course the top part of the oval slot in the part D will bear against the screw-shank.
- 10 The complete depression of the rod I will move the arm G to the other side of the burner, in which position it will be held by the operation of the spring K, hereinbefore described. Upon pushing up again upon the rod I it is
- 15 evident that the lower part of the oval slot in the part D will press against the shank of the screw and will elevate the part G. As the gas is turned on by pulling down upon the part I, at which operation it is necessary that the
- 20 flexible contact-point upon the arm G should make contact with the fixed electrode B, it is necessary that the upper part of the slot in the part D should bear upon the screw; but in turning off the gas there is no necessity to
- 25 make a spark, and it is desirable to elevate the flexible contact-point out of contact with the fixed electrode B. The oval slot, which allows of the raising of the part G, is for this purpose—that is, to secure a contact between

the electrodes and a spark in turning on the gas and to avoid contact of the electrodes or the making of a spark at the turning off of the gas.

Having described my invention, what I claim is—

1. The combination of a gas-burner pillar, provided with a fixed insulating electrode, an oscillating gas-cock, and a plate thereto affixed, and a three-arm vibrating piece, one arm loosely pivoted to said plate, one arm carrying the wiping electrode, and the third arm connected with an actuating rod or wire, substantially as described.

2. In an electric hand-lighting gas-burner, in combination with the oscillating gas-cock, a plate-piece thereto affixed and adapted to carry the vibrating electrode, and a vibrating electrode constructed with three arms, one to be affixed to said plate, one to carry the vibrating electrode, and one for connection with the operating wire, all substantially as described.

Witness my hand this 17th day of April, 1894.

JAMES WILL. PALMER.

Witnesses:

F. A. PALMER,
LUENA S. GORDON.