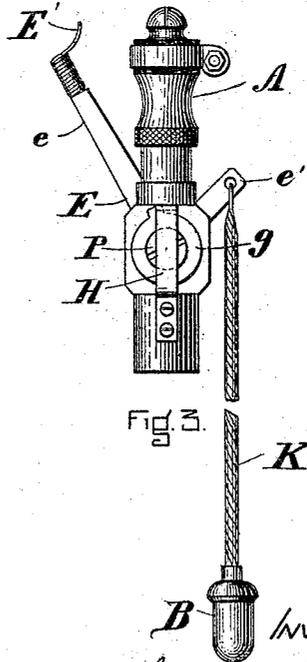
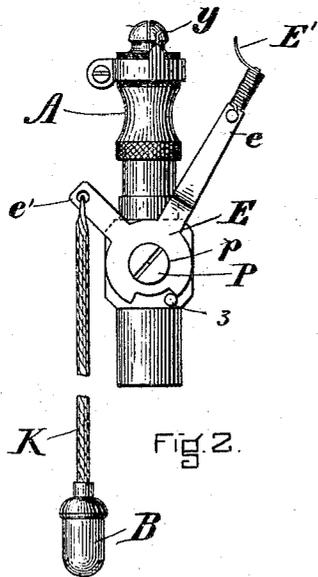
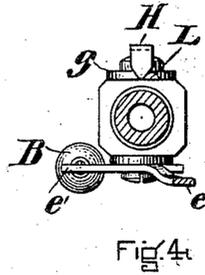
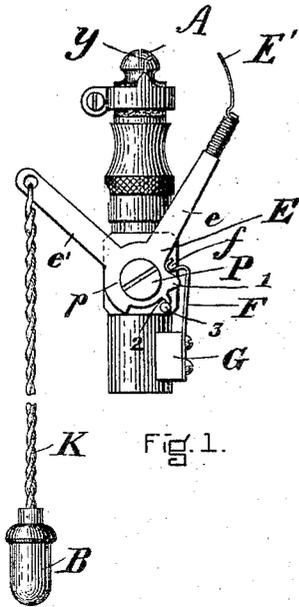


(No Model.)

T. W. LANE.  
ELECTRIC GAS LIGHTER.

No. 489,653.

Patented Jan. 10, 1893.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## ELECTRIC GAS-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 489,653, dated January 10, 1893.

Application filed January 25, 1892. Serial No. 419,164. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS W. LANE, of Boston, Massachusetts, have invented a new and useful Improvement in Electric Gas-Lighting Apparatus, and particularly in that variety in which a two-armed lever is rigidly affixed to the gas-cock, one arm for a lever and the other to carry the movable electrode, of which the following is a specification.

My invention relates to improvements in such apparatus particularly in the devices for oscillating the movable lever by which the gas-cock and electrode-arm are controlled. In such apparatus as frequently constructed a fixed electrode is placed in close proximity to the burner; a movable electrode is carried by one arm of a two-armed metallic lever, one arm of which is vertical and the other horizontal. This two-armed lever is attached to a gas-cock of the ordinary form which is to be tilted back and forth to open and close the valve. This two-armed lever is operated by means of a horizontal slotted lever in which one arm of the two-armed lever plays and to each end of which horizontal lever a chain is attached, the whole operating to turn on the gas and ignite it upon pulling one chain and to extinguish the gas by pulling the other.

My improvements relate, as has been said, particularly to the method of operating the two-armed lever. In place of the horizontal slotted bar and the similar devices which have been used by other inventors, I prefer to attach to one end of the horizontal arm of the two-armed lever, a slight metallic wire terminating in an acorn or button by means of which the two-armed lever may be oscillated and the gas-cock tilted at will. It is very desirable in this variety of apparatus that it should be unaffected by any ordinary jar, either from foot-falls, passing trains, dusting, cleansing, or any act of carelessness; and I have therefore added—what is made also somewhat more essential by my device for oscillating the movable lever than the same would be with such horizontal bar—a spring for the purpose of steadying the position of the gas-cock. The reason why a spring is perhaps more essential in my improved form is that each extremity and each ball and

chain of a horizontal slotted lever operates to steady the position of the gas-cock. I contemplate applying this spring in such way that it will not be held strained except during the operation of opening or the operation of closing the valve; but when the valve is entirely opened or entirely closed, the spring will be in a normal position which will have to be disturbed against the stress of the spring in order to move the valve.

In the drawings Figure 1 is a full front view with a leaf spring on the side, to retain the angle lever; Fig. 2 is a full front view without this leaf spring; Fig. 3 is a rear view showing the retaining leaf spring over the rear shoulder; Fig. 4 is a plan showing the connection of the spring over the rear shoulder.

In the drawings my improvements will be readily understood.

Fig. 1. is a full front view of my invention showing the gas-burner, A, having an ordinary gas-cock at P, to the stem of which is attached at *p*, the two-armed metallic lever, E, one arm vertical, *e*, carrying a flexible contact point E' the other horizontal *e'*, and a wire, K, depending from the horizontal arm, *e'*. The fixed electrode is shown at *γ*. The spring in Fig. 1. is a leaf spring, F, attached to the block, G, and curved or bent at its top at *f*, so as to fit over the projection, 1, upon the two-armed lever and be caught when the lever arm is depressed by the projection, 2, upon said lever, which projection, 2, also contacts with the stop, 3, by which the motion of the two-armed lever is limited.

In Figs. 2, 3, and 4, instead of the leaf spring, F, a spring, H, is arranged just over the rear shoulder, or washer of the gas-cock, and a lug or projection, L, from the rear of the gas-cock normally bears against this spring retaining the gas-cock in position either wholly open or entirely closed. I prefer the latter arrangement of the spring as being more simple and preferable in operation but either these or equivalent adaptations of the spring may be used within the scope of my improvement.

The operation of my improved apparatus is so simple as to require little explanation. When the gas-cock is closed a simple pull upon the acorn or ball, B, upon the wire, K, will cause the arm, *e'*, of the two armed lever,

E, to open the gas-cock and bring the vertical arm, *e*, past the fixed electrodes so that the flexible contact point *E'* will contact with the same and produce a spark. To turn the gas  
 5 off, a slight push upon the rod will raise the horizontal arm, *e'*, to position against the stress of the retaining spring and tilt the gas-cock so as to shut off the gas. The motion  
 10 of the two-armed lever, *E*, both in opening and closing, is properly adjusted by means of the stop, *3*, to cause the gas-cock to rotate a proper distance only.

I do not claim to be the inventor of what is shown in earlier devices, but

15 What I do claim as my invention and desire to secure by Letters Patent, is—

1. In a hand lighting electric gas burner, the combination of the burner *A*, fixed electrode *Y*, two-armed lever *E*, having a vertical  
 20 arm *e*, and a horizontal *e'*, and projections 1 and 2, a tilting gas-cock *P*, rigidly attached to said two-armed lever at about the angle thereof, a wire *K*, attached to the horizontal

arm *e'*, a contact point upon the vertical arm *e*, adapted to make contact with the fixed insulated arm *Y*, a leaf spring *F* mounted upon a block *G*, and a stop *3*, all constructed and combined as and for the purposes set forth. 25

2. In an electric hand lighting gas burner having a fixed electrode and a two-armed angle or bell-crank lever rigidly attached to the gas-cock and carrying the movable electrode, the combination of a lever-handle for moving said two-armed lever with a leaf spring attached to the burner body, and its free end adapted and normally tending to hold the gas-cock in either an open or in a closed position and to be strained only during the opening or closing of the gas-cock, all substantially as described. 35

January 20, 1891.

THOMAS W. LANE.

Witnesses:

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