(Model.)

W. A. DRYSDALE.

ELECTRIC GAS LIGHTER.

No. 281,471. Patented July 17, 1883.

FIG. 1

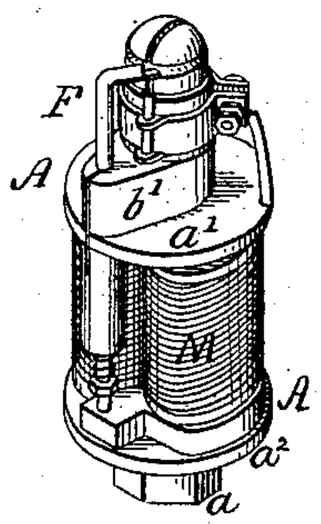


FIG. 2

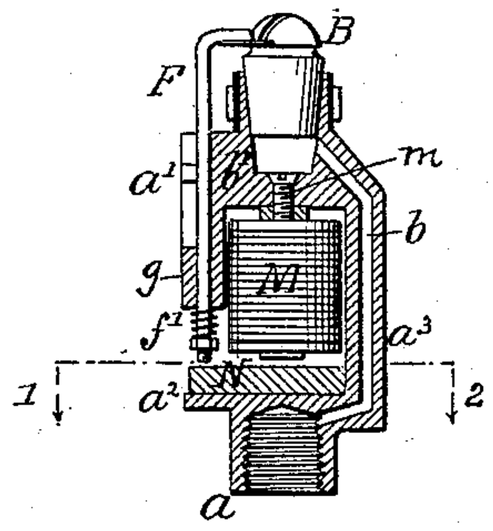


FIG. 4

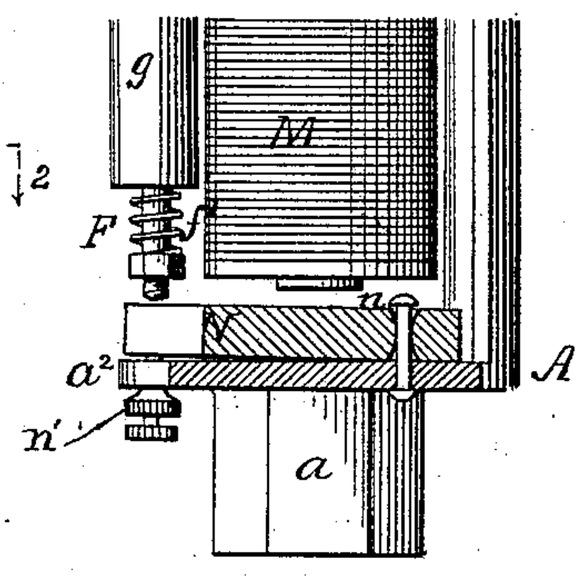


FIG. 3.

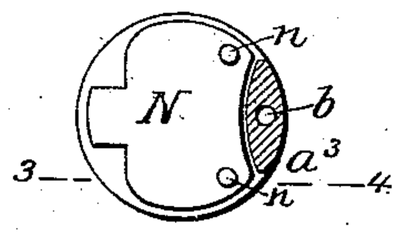


FIG. 6.

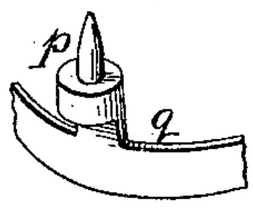
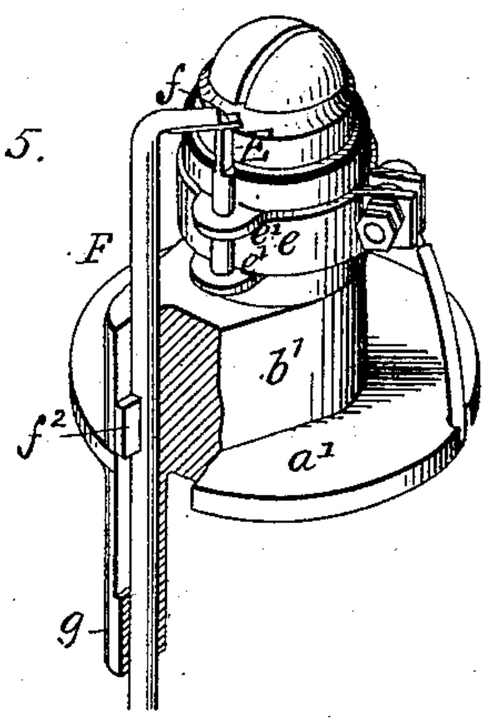


FIG. 5.



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by his Attys.
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UNITED STATES PATENT OFFICE.

WILLIAM A. DRYSDALE, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRIC GAS-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 281,471, dated July 17, 1883.

Application filed February 17, 1883. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM A. DRYSDALE, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Electric Gas-Lighters, of which the following is a specification.

The object of my invention is to improve and simplify the construction of electric gas-lighters, as more fully described hereinafter.

In the accompanying drawings, Figure 1 is a perspective view of my improved electric gas-lighter; Fig. 2, a vertical section; Fig. 3, a sectional plan on the line 1 2, Fig. 2; Fig. 4, an enlarged sectional view on the line 3 4, Fig. 3; Fig. 5, an enlarged perspective view of the burner, and Fig. 6 is a detached perspective view of the usual form of fixed platinum tip.

The frame A of the burner consists, principally, of an upper horizontal disk, a', and a lower disk, a^2, united by a vertical portion, a^3, Fig. 2, the lower disk carrying the internally-threaded nipple a, to be screwed onto the usual screw-tip of the gas-bracket. Gas-passages b lead from the interior of the nipple through the vertical portion of the frame to the tip B of the burner, carried by a projection, b', on the upper disk, a'. Around the portion of the frame in which the tip B is inserted is clamped a ring, e, carrying the fixed electrode E, of platinum. Resting on the top of this electrode is the platinum tip f of the movable electrode F, which has a cylindrical portion, adapted to slide in an opening bored in the projection b', and pendent leg g, the latter affording a long bearing for the electrode. The lower end of the electrode F is screw-threaded, for the reception of an adjusting-nut to regulate the action of a spiral spring, f', interposed between the nut and the bottom of the leg g, to keep the tips of the electrodes normally in contact. To prevent the electrode F from turning in its bearing, I secure to the side thereof a wing or flange, f^2, which is adapted to a slot cut along the edge of the opening, as shown in Fig. 5.

To the under side of the disk a' are secured the electro-magnetic coils M M by a screw, m, conveniently inserted through the bottom of the gas vertical way below the burner-tip B.

Immediately below the poles of the pendent magnet M is arranged the armature N, which is pivoted on two vertical pins, n, riveted to the disk a^2, the openings in the armature through which the pins n pass being enlarged, to allow the outer end of the armature to rise when attracted by the electro-magnets and strike the lower end of the movable electrode F, raise the latter, separate the platinum tips, and form the spark. Adjusting-screws n' may be provided to adjust the position of the armature, which falls back by gravity, and by the action, in the first instance, of the spring f'.

The above-described construction and arrangement of parts greatly simplify and cheapen the device, and enable me to get the parts into the most compact possible shape.

In order to increase the efficiency of the sparking-points, I construct the fixed electrode in a novel manner. The usual manner of constructing this is shown in Fig. 6, a short piece of platinum, p, tapering a little toward the point, being secured in wings bent up from a projection on the band q. This construction gives but a small spark, and the electrode is, moreover, easily burned off. I secure a long piece of platinum, E, in two lugs, e' e', on both the upper and lower sides of the ring e, so as to prevent the liability of its being burned off. I also file or cut down the platinum to some distance back from its point, so as to form a flat blade-like electrode, with its flattened faces practically parallel, the extreme tip or outer end of the blade (practically at right angles to the flattened sides) making contact with the other electrode, as shown in Fig. 5, so that the direction of the motion of the movable electrode is about parallel with the flat faces of the blade. With this construction I find that on connecting the electrode E with the zinc or positive element of the battery I obtain a spark extending down the flat blade to about the shoulder formed by the flattening of the point, whereas with other constructions of the electrodes the spark only plays about the extreme point.

I claim as my invention—

1. The combination of the frame of an electric gas-lighter and an electro-magnet, M, with a horizontal armature, N, and vertical

pivot-pins *n*, passing through enlarged openings in said armature, substantially as described.

2. The combination of the frame of an electric gas-lighter with a vertically-moving electrode, F, having a cylindrical portion adapted to a corresponding opening in the frame, and a wing, f^2, adapted to a guide-slot along the edge of said opening, substantially as described.

3. The combination of the frame and armature N with the pendent electro-magnet M, and a retaining-screw, *m*, passing through the vertical gasway below the burner-tip, as set forth.

4. A platinum spark-producing electrode having a flattened blade-like point extending some distance back from the tip, in combination with another electrode, with which the extreme tip of the flattened point at right angles to the flat sides makes contact, substantially as set forth.

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

WILLIAM A. DRYSDALE.

Witnesses:
HARRY SMITH,
HUBERT HOWSON.