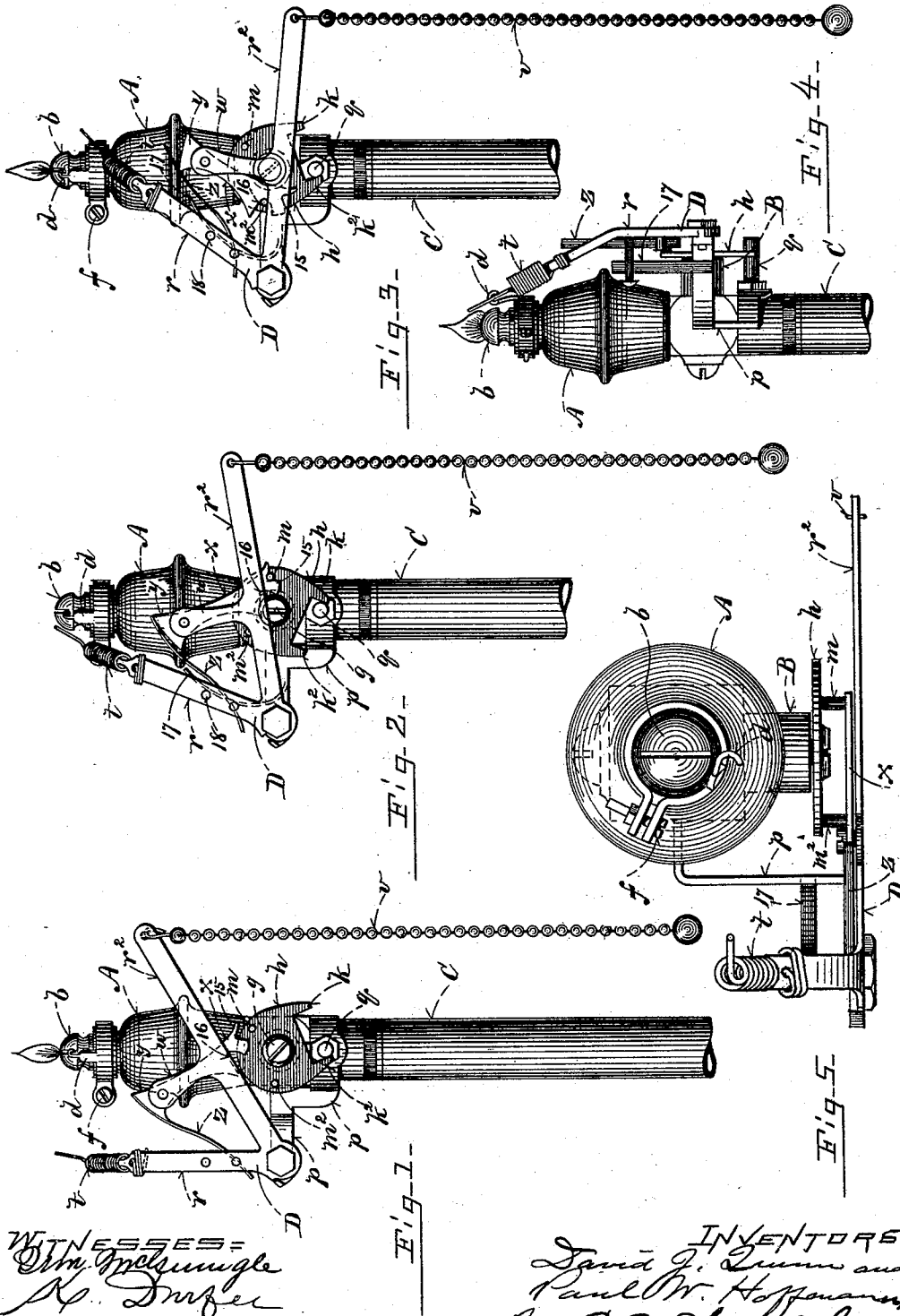


(No Model.)

D. J. QUINN & P. W. HOFFMANN.
ELECTRIC GAS LIGHTER.

No. 496,618.

Patented May 2, 1893.



WITNESSES=
Chas. McLaughlin
H. Dwyer

INVENTORS
David J. Quinn and
Paul W. Hoffmann
By C. A. Shaw & Co.
ATTYS.

UNITED STATES PATENT OFFICE.

DAVID J. QUINN, OF BROOKLINE, AND PAUL W. HOFFMANN, OF BOSTON,
MASSACHUSETTS, ASSIGNORS TO THE IONA MANUFACTURING COM-
PANY, OF PORTLAND, MAINE.

ELECTRIC GAS-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 496,618, dated May 2, 1893.

Application filed June 20, 1892. Serial No. 437,332. (No model.)

To all whom it may concern:

Be it known that we, DAVID J. QUINN, of Brookline, in the county of Norfolk, and PAUL W. HOFFMANN, of Boston, county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Electric Gas-Lighters, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of a gas burner showing our improved electric lighting device, the parts being represented in the position assumed after the gas has been ignited; Fig. 2 a like view showing the parts in the position assumed in lighting the gas; Fig. 3 a similar view showing the valve moved to shut off the gas supply; Fig. 4 a side elevation looking from the left in Fig. 1; and Fig. 5 a top plan view enlarged, the parts being in the position shown in Fig. 1.

Like letters and numerals of reference indicate corresponding parts in the different figures of the drawings.

Our invention relates to an electric lighting apparatus for gas-burners, the particular object being to prevent a spark being formed when shutting off the gas supply.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings A represents a burner of ordinary construction and provided with a tip, *b*. A fixed contact point, *d*, is insulated from the tip and provided with binding posts, *f*, for one electric conducting wire in the usual manner. The ordinary rotatable valve, B, is disposed in the pipe, C, adjacent the burner and on the stem, *g*, of said valve there is a segment, *h*, fast. Said segment is provided with two tangent stop fingers or points, *k*, *k*². Equidistant from opposite sides of the stem or pivot, *g*, there are two laterally projecting pins, *m*, *m*². A frame or supporting arm, *p*, is secured to the burner and is provided with

a laterally projecting stop pin, *q*, disposed between the points, *k*, *k*², in position to be alternately engaged thereby. On the outer end of the frame, *p*, a V-shaped lever, D, is pivoted to swing vertically. One arm, *r*, of said lever forms the spark arm, and is provided with the usual spring contact point, *t*, at its free end. Said lever is in electrical contact with the pipe, C. The opposite arm, *r*², of said lever is provided with the ordinary pull cord or chain, *v*. Projecting laterally from said arm, *r*², there is a lug, *w*, in the outer or upper end of which an actuating pawl, *x*, is pivoted. Said pawl is provided with a flattened or triangular head, *y*, above its pivot on which the free end of a flat tension spring, *z*, secured to the arm, *r*, bears. The lower end of the pawl has a notch, 15, in position to take on the pin, *m*, of the segment and adjacent said notch there is a curved notch, 16, in position to take on the pin, *m*², as hereinafter described.

The lever, D, is held by a spring, 17, secured by an end to the frame arm, *p*, and passing under a pin or lug, 18, on the lever arm, *r*.

In the use of our improvement the parts being in the position shown in Fig. 1, the gas is ignited. To shut off the supply the pull, *v*, is actuated throwing the notch, 15, of the pawl, *x*, into engagement with the pin, *m*, on the segment, *h*, moving the segment sufficiently to close the cock or until its point, *k*, comes into engagement with the stop pin, *q*, as shown in Fig. 3. This stop is so arranged that the spark contact, *t*, does not engage the fixed contact, *d*. As soon as the pull is released the spring, 17, throws the lever, D, back into its normal position. To light the gas the pull is actuated in like manner, the segment being in the position shown in Fig. 3. The notch, 16, of the pawl, *x*, now engages the pin, *m*², on the segment rotating it in the opposite direction and opening the supply. At the same time the spark contact, *t*, meets and passes the fixed contact, *d*, igniting the gas, the parts being in the position shown in Fig. 2. As soon as the pull is again released it is thrown backward by its spring and the pawl is adjusted by the spring, *z*, into position to

again engage the pin, *m*, on the segment and close the supply when the pull shall be again operated.

By our improved mechanism it becomes
5 practically impossible to "ground" the circuit accidentally as in closing the cock the spark contacts do not meet and therefore cannot be left in engagement after the gas is extinguished as frequently happens to lights of
10 this class where the contacts pass each other both in lighting and extinguishing the gas.

Having thus explained our invention, what we claim is—

1. A gas burner, a rotatable valve therefor, a
15 spark arm pivoted on said burner, and a co-operating fixed contact therefor in combination with a two arm pawl pivoted on said spark arm; a disk on the valve stem provided with
20 projections in position to be alternately engaged by the pawl-arms and a stop for said disk, substantially as described.

2. A gas burner a rotatable valve therefor combined with a spring-tensioned spark arm and a co-operating fixed contact therefor, a
25 pawl for opening and closing said valve by the movement of the spark-arm, and stops limiting the movement of the valve in either direction, one of said stops being so arranged

that the contacts shall not engage during the movement for closing said valve, substantially as described. 30

3. A gas-burner, a rotatable valve therefor a spring-tensioned pivoted spark arm and co-operating fixed contact therefor, a segment
35 on said valve, stops limiting the movement of said valve in either direction and a spring-tensioned actuating pawl on said spark arm adapted to alternately engage projections on said segment to open and close the valve, substantially as described. 40

4. The gas burner, spring-tensioned pivoted spark-arm and fixed contact in combination with the valve, the segment, *h*, on the stem thereof provided with the stops, as *k*, *k*², a pin
45 on the burner in the path of said stops; projections, as, *m*, *m*², on said segment and a notched spring-tensioned actuating pawl pivoted to said spark arm and adapted to alternately engage said projections substantially as described.

DAVID J. QUINN.
PAUL W. HOFFMANN.

Witnesses:

KATHARINE DURFEE,
O. M. SHAW.