

(No Model.)

2 Sheets—Sheet 1.

A. MAHON & W. J. GREEN.

ELECTRIC GAS LIGHTER.

No. 255,524.

Patented Mar. 28, 1882.

Fig. 1.

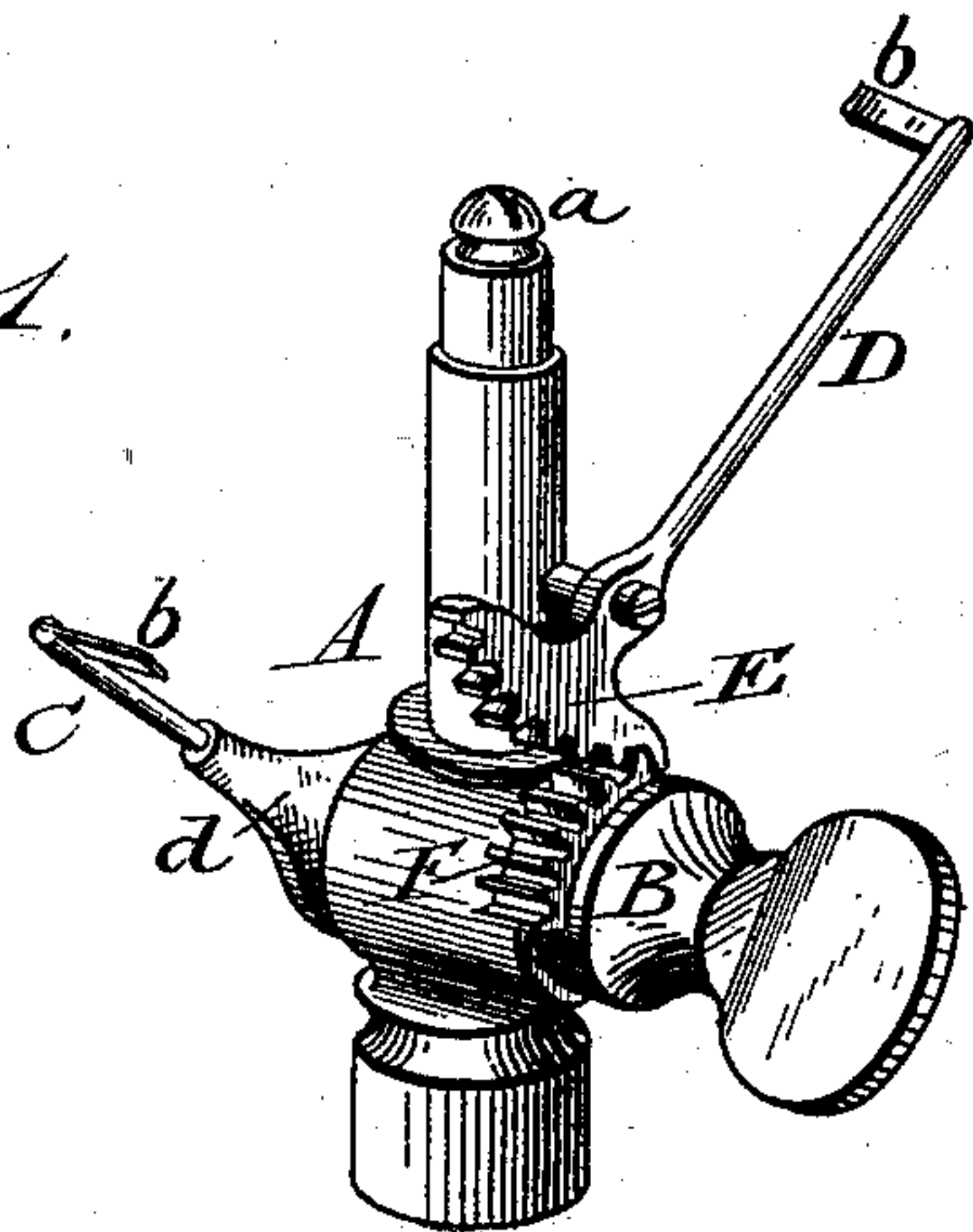
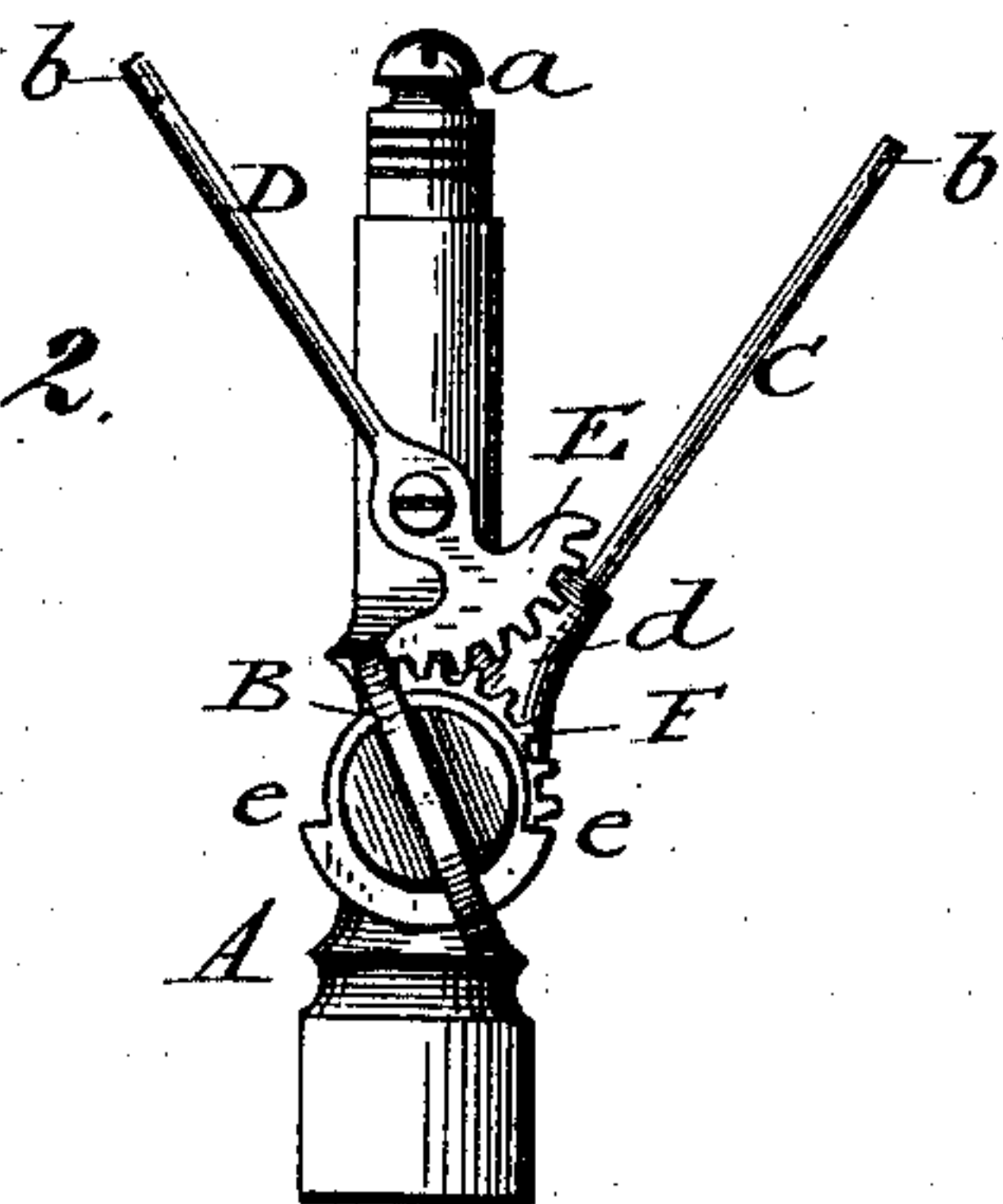


Fig. 2.



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Fig. 3.

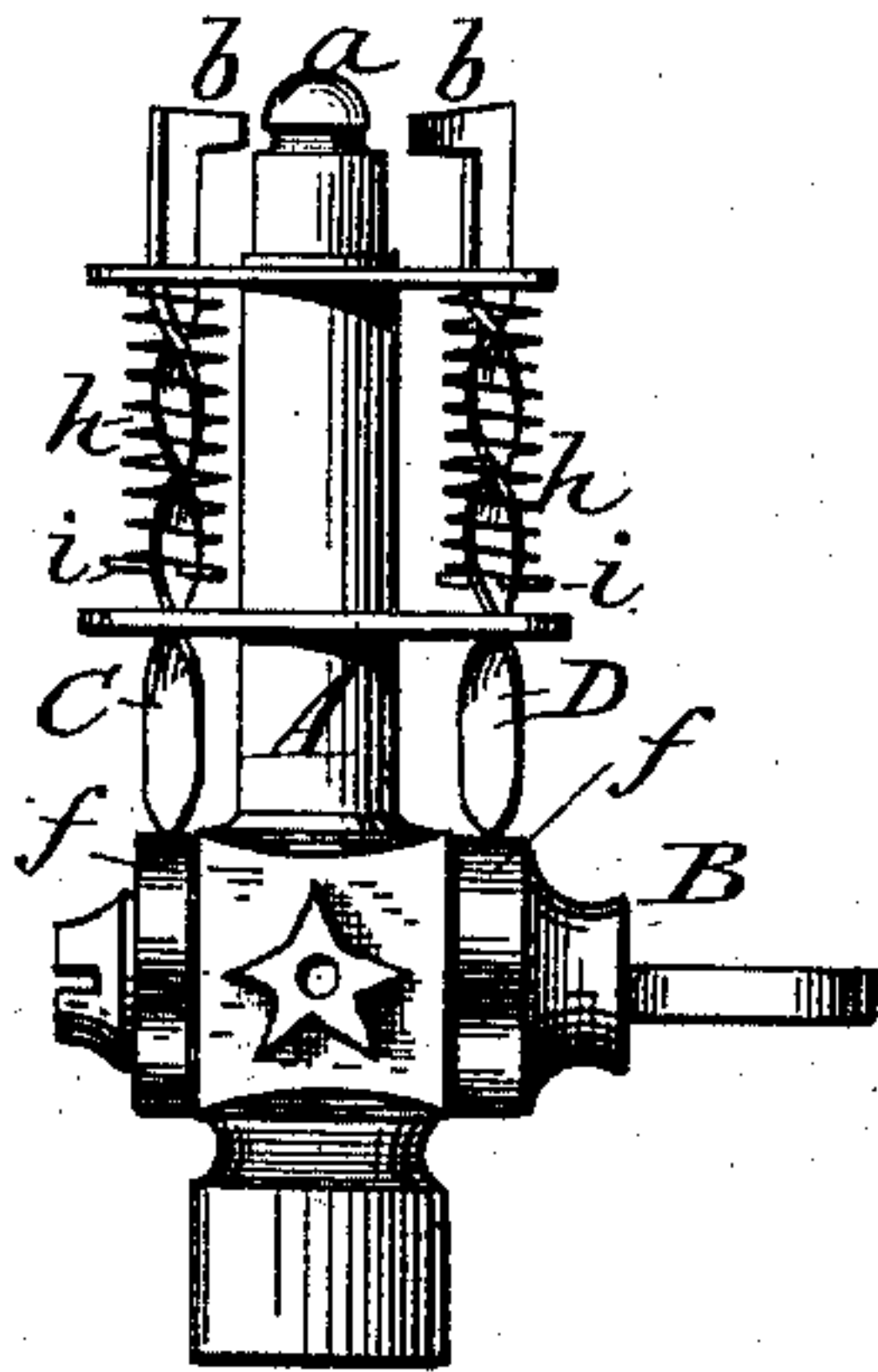


Fig. 4.

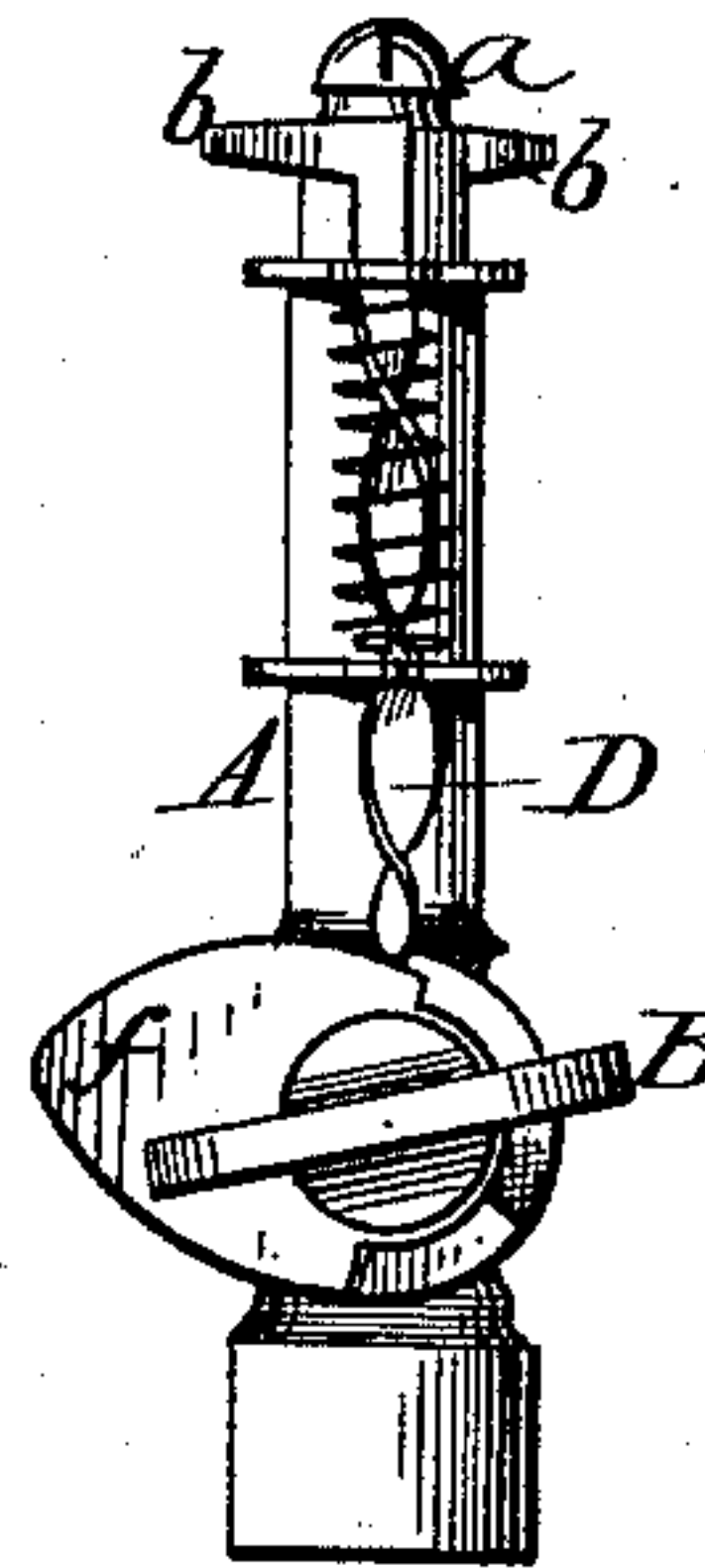
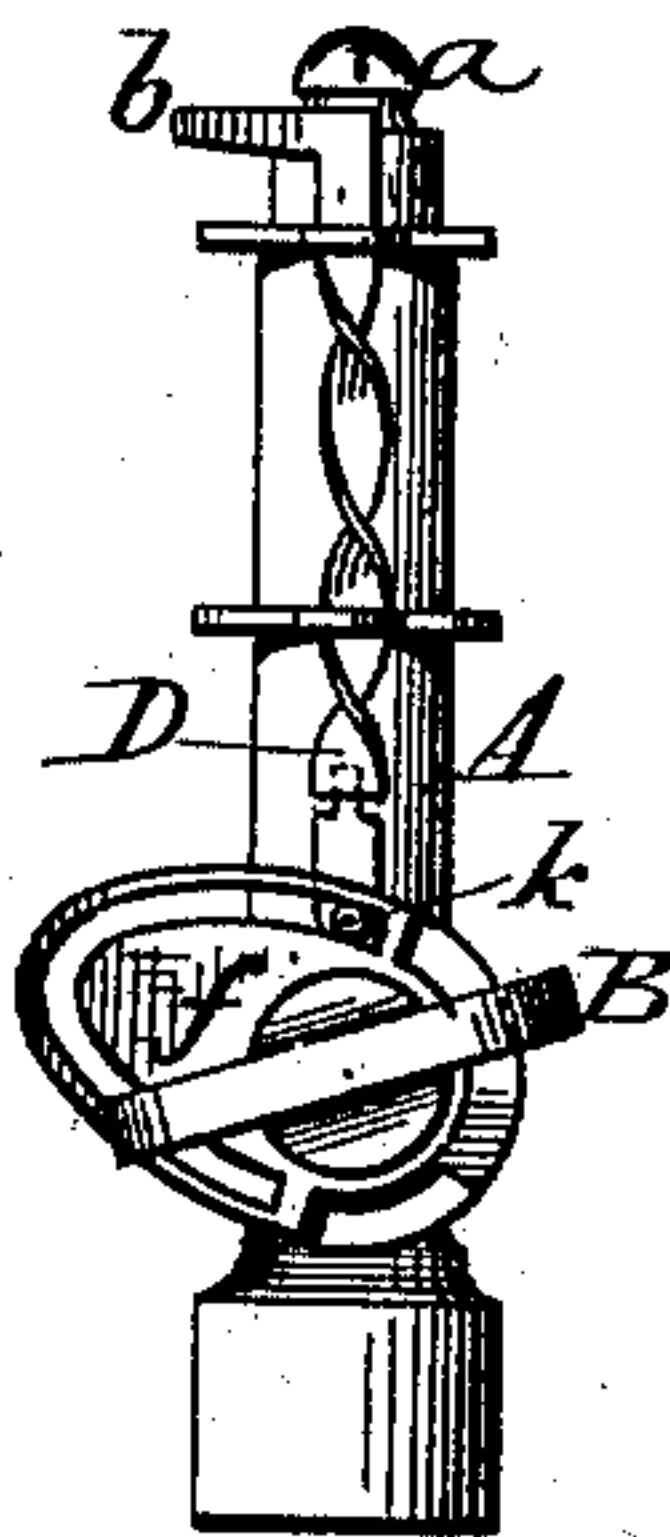


Fig. 5.



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UNITED STATES PATENT OFFICE.

ALEXANDER MAHON AND WILLIAM J. GREEN, OF WASHINGTON, D. C.

ELECTRIC GAS-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 255,524, dated March 28, 1882.

Application filed February 20, 1882. (No model.)

To all whom it may concern:

Be it known that we, ALEXANDER MAHON and WILLIAM J. GREEN, of Washington, in the county of Washington, District of Columbia, have invented certain Improvements in Electric Gas-Lighters, of which the following is a specification.

Our invention relates to that class of lighters which ignite the gas by means of a spark produced by joining and immediately separating two electrodes.

Lighters of this class as heretofore constructed have been open to many and serious objections—such as the injury and destruction of the electrodes by constant exposure to the flame, the location of the electrodes in such position as to destroy the symmetry of the flame and cast objectionable shadows, and the liability of the electrodes to vary the position of the spark and render the lighting action uncertain.

Our invention is intended to avoid these difficulties; and to this end it consists in two positively-operated movable electrodes, arranged to meet over the gas-orifice and then recede out of reach of the flame; in arranging the gas-cock to operate both electrodes; in providing the cock with a device which serves both as a stop to limit its motion and as a means of operating one of the electrodes, and in other details hereinafter described.

Referring to the drawings, Figure 1 represents a perspective view of our device in the preferred form. Fig. 2 represents a side elevation of the same with the position of the electrodes changed. Figs. 3 and 4 are elevations of the lighter in a modified form. Fig. 5 is an elevation showing a second modification.

Referring to Figs. 1 and 2, A represents the body of an ordinary gas-burner provided with the usual horizontal cock, B, to control the discharge of the gas, and with the usual tip or outlet, *a*, at the top. C and D represent the two vibrating electrodes or lighting-arms, the upper ends of which are brought together and separated immediately over the gas-outlet to effect the lighting of the gas. The electrode C is secured rigidly to the rear end of the cock B, and is carried by the rotation of the latter through a vertical arc past the side of the burner. The electrode D is pivoted near its

lower end to the side of the burner, and provided with a sector-pinion, E, which engages in a similar pinion, F, formed on the forward end of the cock, as shown, so that the motion of the cock will cause the second electrode to be moved in the same manner as the first. The arrangement is such that the two electrodes move in opposite directions, passing each other when in line with the gas-outlet and falling back in opposite directions beyond the reach of the flame. The upper ends of the electrodes terminate in small fingers *b*, of platinum or other suitable material, arranged to strike and pass each other with a frictional contact, whereby the production of the spark is insured. Either of the electrodes may be insulated from the rest of the device; but it is preferred, as shown, to insulate the arm C by connecting it to the cock through the medium of the section *d*, composed of gutta-percha or other non-conducting material.

When the cock is closed the parts stand in the position represented in Fig. 1; but the act of opening the cock causes the electrodes to approach and pass the burner, produce the spark, and then continue their movements until they have passed beyond the reach of the flame, as shown in Fig. 2.

It will be observed that the pinion F, in addition to operating the electrode, serves also as a stop to limit the rotation of the cock by encountering the usual shoulders, *e*, upon the body.

Referring to Figs. 3 and 4, A represents the burner, and B the cock, the latter being provided at its ends with two eccentrics or cams, *f*. C D represent the electrodes, made of a spiral form, mounted vertically in guides on opposite sides of the body, and seated at their lower ends upon the eccentrics *f*, so that when the cock is rotated to permit the escape of gas the eccentrics force the electrodes upward through their guides with a rotary motion and then permit them to fall back again.

In order to insure the descent of the electrodes as the eccentric recedes, spiral springs *h* are applied around the electrodes, and bear upon pins or shoulders *i* thereon, as shown. The upper ends of the electrodes terminate in elastic fingers extending horizontally, as shown. The two electrodes are twisted and

arranged to revolve in opposite directions, so that when raised by the cams their fingers *b* are brought against each other over the gas-outlet. The fingers may simply meet and then
5 separate as the electrodes descend, or the rotation may be continued, so as to carry the fingers past each other, as preferred. It will be seen that under the above construction the rotation of the cock causes the electrodes to
10 rise and meet in the gas and then separate and descend out of the reach of the flame.

In order to avoid the use of the springs, each eccentric may be slotted or grooved, as shown in Fig. 5, so as to engage with an arm or roller,
15 *k*, swiveled to the lower end of the electrode, in which case the cam will serve to both elevate and depress the electrode in a positive manner.

The leading feature of our invention consists
20 in operating two movable electrodes positively by the cock, and it is manifest that the details may be modified without departing from the limits of the invention.

It is also manifest that if the devices are
25 used in connection with an induced current it will be unnecessary for the electrodes to be brought in actual contact with each other, the proper action being secured if they are brought sufficiently near to each other to permit the
30 passage of the spark between them.

Having thus described our invention, what we claim is—

1. In an electric gas-lighter, the combination of two movable electrodes and a cock, whereby both electrodes are moved positively in relation to each other. 35

2. In an electric gas-lighter, the combination of a burner and two movable electrodes arranged, substantially as described, to pass each other in opposite directions in the gas-jet and
40 then fall back on opposite sides of the burner, away from the flame.

3. In an electric gas-lighter, the combination of a burner and two electrodes arranged to pass each other in opposite directions and fall
45 back on opposite sides of the burner.

4. In an electric gas-lighter, the combination of two electrodes and connecting devices, substantially as shown, whereby the electrodes are moved positively in opposite directions in
50 respect to each other.

5. The combination of the burner, the cock, the electrode attached rigidly to the cock, and the second electrode, sustained independently of the cock and connected therewith, substantially as shown, to turn in the opposite direction. 55

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