

(Model.)

C. H. CROCKETT.

ELECTRIC GAS LIGHTING BURNER.

No. 271,805.

Patented Feb. 6, 1883.

Fig. 1

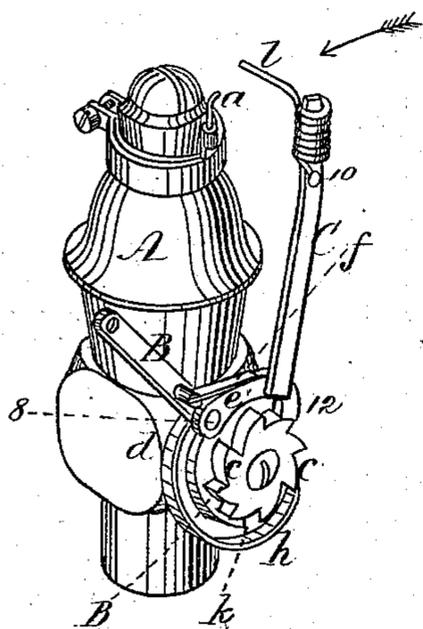


Fig. 2

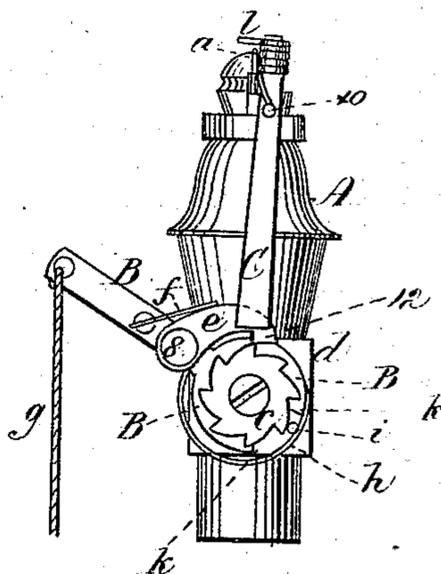


Fig. 3

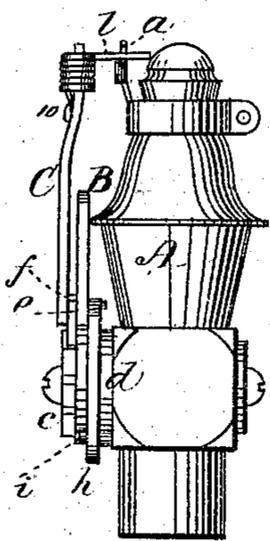
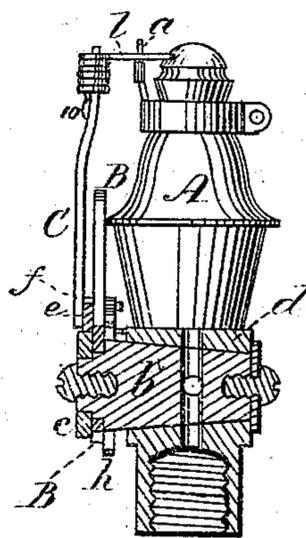


Fig. 4



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES H. CROCKETT, OF BOSTON, MASSACHUSETTS.

ELECTRIC GAS-LIGHTING BURNER.

SPECIFICATION forming part of Letters Patent No. 271,805, dated February 6, 1883.

Application filed July 1, 1880. Renewed August 12, 1882. (Model.)

To all whom it may concern:

Be it known that I, CHARLES H. CROCKETT, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Electric Gas-Lighting Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of an electric gas-lighting burner, having my improvements applied thereto. Fig. 2 is a front elevation of the same with the parts in a different position. Fig. 3 is a side elevation of the same. Fig. 4 is a sectional elevation of the same.

My invention relates to an improvement in that class of electric gas-lighting burners in which the gas is alternately let on and shut off by pulling down a pendent cord or rod connected with suitable mechanism for actuating the gas-cock, and simultaneously producing the electric spark to ignite the gas, by causing the elastic or yielding terminal of a movable electrode to be wiped past or swept into and out of contact with the terminal of a fixed electrode situated in close proximity to the orifice at the tip of the burner. These burners are, however, defective, for the reason that the yielding terminal of the movable electrode is liable—especially when corroded so as to lose its elasticity—to catch against and remain in contact with the fixed electrode, instead of sweeping or wiping past it, as intended, the spring which is relied on to return the mechanism to its original position after being operated by pulling down the cord not always having sufficient power to separate the electrodes when they have become bent or corroded, as is frequently the case, owing to the heat and smoke of the gas to which they are exposed; and when the electrodes are thus left in contact after actuating the gas-cock a continuous galvanic current is established, which prevents any other burner in the same circuit from being lighted, and also causes the battery to soon become exhausted or weakened, necessitating a frequent renewal of the exciting-liquid.

My invention has for its object to overcome these objections and difficulties; and it consists in so constructing and operating the movable

or vibrating electrode that it will come into contact with the stationary or fixed electrode when moved in one direction only as the gas-cock is being opened, it being carried on its return movement past the fixed electrode without coming into contact therewith, whereby all liability of the two electrodes catching together and remaining continuously in contact after the gas-cock has been operated is entirely avoided, which insures all of the burners in the circuit being always in a condition ready to operate.

In the said drawings, A represents a gas-burner near the orifice, at the tip of which is secured the fixed electrode *a*, which is connected, as usual, with one pole of the battery.

b is the plug of the gas-cock, to the outer end of the stem of which is securely fastened a ratchet, *c*, and upon this stem, inside the ratchet and between it and the shell *d*, is loosely pivoted a lever, B, to which is pivoted, at *8*, a pawl, *e*, which engages with the teeth of the ratchet, and is held down thereon by a spring, *f*, bearing on its upper side. From the outer end of this lever B depends a cord or chain, *g*, by means of which it can be vibrated by hand against the resistance of a flat coiled spring, *h*, by which it is returned to its original position, when the cord is released, a stop-pin, *i*, against which strike shoulders *k* on the lever, serving to limit the movement of the latter in either direction, and thus, as the lever is vibrated, the ratchet is rotated to open and close the gas-cock as required.

To the outer end of the pawl *e* is secured an arm, C, which forms a movable electrode which is connected through the burner and gas-pipe with the other pole of the battery. The terminal or contact point of this vibrating electrode C is composed, as usual, of a piece of spring-wire, *l*, having its inner end coiled around the arm and secured in place by means of a rivet, *10*, by which means it is rendered sufficiently elastic to enable it to readily pass the fixed electrode *a* as it is vibrated into and out of contact therewith by the movement of the arm C in the direction of the arrow, which is effected when the lever B is actuated by pulling down the cord *g*. On the return movement of the lever B the end *12* of the pawl *e* will ride up over the next tooth of the ratchet, which is held stationary by the friction of the valve-

plug *b* in its seat, this tooth thus acting as a cam to cause the vibrating electrode or arm C to be raised, as seen in Fig. 2, sufficiently to carry the terminal or contact point *l* over and
 5 entirely clear of the fixed electrode *a*, so as to effectually prevent any contact between the two electrodes on the return movement of the arm C after the gas has been either let on or shut off, no spark being required at this time,
 10 as the gas is lighted by the spark produced on the first or forward movement of the arm C, which occurs simultaneously with the letting on of the gas. As soon as the contact-point *l*
 15 has passed the fixed electrode *a* on the return movement of the arm C, the end 12 of the pawl *e* drops off the point of the tooth of the ratchet by which it has just been raised, and allows the arm C to fall into such a position that on its next forward movement the terminal point
 20 *l* will strike the fixed electrode *a* to make and break contact therewith, and thus produce the spark to ignite the gas as required. It will thus be seen that no contact whatever between the electrodes occurs on the return movement
 25 of the mechanism which actuates the gas-cock, and consequently even if the electrodes should become badly corroded or bent they cannot catch and remain in contact with each other under any circumstances whatever, the estab-
 30 lishment of a continuous galvanic current and the objections incident thereto previously referred to being by this means entirely avoided.

Instead of the movable arm C being raised, as described, it may be merely vibrated, and
 35 the wire *l* raised or moved independently of the arm by extending it down alongside thereof and operating it by suitable mechanism brought into action on the return movement of the arm C, and in lieu of employing the
 40 teeth of the ratchet *c* as cams to actuate the

vibrating electrode to cause it to clear or avoid contact with the fixed electrode, it is evident that an independent cam or other suitable device located in a proper position may be used for this purpose without departing from the
 45 spirit of my invention.

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

1. In an electric gas-lighting burner, the combination, with the fixed electrode *a*, of a
 50 movable or vibrating electrode, C, provided with an elastic or yielding contact-point adapted to be actuated on its return movement in such a manner as to clear or avoid contact with the fixed electrode as it passes the latter, sub-
 55 stantially as and for the purpose set forth.

2. In an electric gas-lighting burner, the combination, with the fixed electrode *a*, of a
 60 movable electrode, C, provided with an elastic or yielding contact-point, *l*, and means for raising the movable electrode on its return-stroke to cause it to clear or avoid contact with the fixed electrode *a*, substantially as
 and for the purpose described.

3. In an electric gas-lighting burner, the
 65 combination of the fixed electrode *a*, the vibrating electrode C, provided with an elastic or yielding contact-point, *l*, and attached to the pawl *e*, the lever B, ratchet *c*, secured to the stem of the gas-cock, and the spring *h*, all
 70 constructed and arranged to co-operate substantially in the manner and for the purpose set forth.

Witness my hand this 29th day of June, A. D. 1880.

CHAS. H. CROCKETT.

In presence of—

P. E. TESCHEMACHER,
 W. J. CAMBRIDGE.