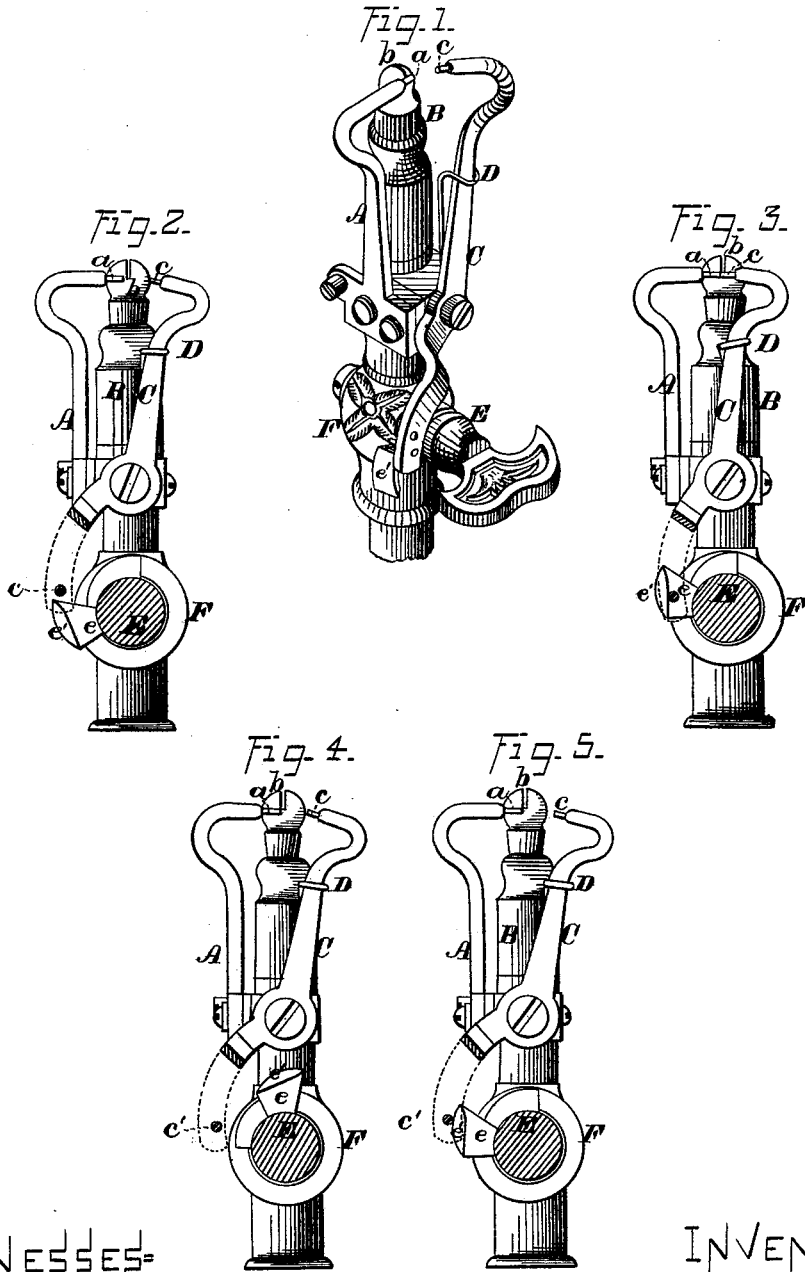


A. L. BOGART.

ELECTRIC GAS-LIGHTING APPARATUS.

No. 180,833.

Patented Aug. 8, 1876.



WITNESSES

Jas. E. Hutchinson
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UNITED STATES PATENT OFFICE.

ABRAHAM L. BOGART, OF NEW YORK, N. Y.

IMPROVEMENT IN ELECTRIC GAS-LIGHTING APPARATUS.

Specification forming part of Letters Patent No. **180,833**, dated August 8, 1876; application filed March 4, 1876.

To all whom it may concern:

Be it known that I, ABRAHAM L. BOGART, of New York city, in the county of New York and in the State of New York, have invented certain new and useful Improvements in Electric Gas-Lighting Apparatus; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my improved apparatus as applied to a burner. Fig. 2 is a front elevation of the same, showing the parts in their normal positions and the gas shut off. Fig. 3 is a like view of said apparatus, showing the position of parts when the electric current is closed and gas has just commenced to escape through the tap. Fig. 4 is a side elevation, showing the position of said operative parts when gas is turned on and the electric current is broken, so as to produce a spark and ignite the gas; and Fig. 5 is a like view of the device, in which the operative parts are shown in their relative positions, just before the flow of gas has been cut-off.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to obviate an objection hitherto existing in electric gas-lighting apparatus, in which ignition is produced by turning the stop-cock, the said objection being the liability of the fixed and vibrating arms to be left in contact, so as to produce what is known as a closed circuit, and cause the rapid depreciation and ultimate destruction of the galvanic battery connected therewith; and my invention consists in the peculiar construction of the operative mechanism, by means of which the points of the movable and fixed arms are brought into and held in contact by the forward motion only of the plug of the stop-cock, and are released so as to break the circuit and produce a spark at the instant the flow of gas from the burner commences, substantially as and for the purpose hereinafter specified.

In the annexed drawings, A represents an arm, which at its lower end is secured upon and insulated from a burner, B, and at its upper end extends in a curve outward, upward, and thence inward, and ends in a point, *a*,

(preferably platinum,) that occupies a position near to the orifice *b* of said burner, and in exact range with the gas when the latter is permitted to escape therefrom. Pivoted upon one side of the burner B is a bar, C, which has the form shown in Fig. 1, and at its upper end is the counterpart of the arm A; said part being provided at its end with a platinum point, *c*, that, by the vibration of said bar, may be brought into or removed from contact with the point *a*. Secured rigidly to or upon the burner B, at or near the pivotal bearing of the vibrating arm C, is one end of a spring, D, which from thence extends upward, and has its opposite end bent loosely around the contiguous portion of said arm. The spring D is so arranged as to be in a state of rest when the vibrating arm C occupies its normal position, but if the latter is moved in either direction from said position and released, said spring will return it to and hold it in place. The lower end of the vibrating arm C extends downward upon one side of the plug E of the stop-cock F, to a point near the vertical center of said plug, and is provided with a stud or pin, *e'*, which extends horizontally rearward, and is capable of engagement with a cam, *e*, that is secured upon and revolves with said plug. The cam *e* is constructed with a lip, *e'*, which projects from the side nearest to the pin *e'*, to or nearly to the inner face of the arm C, and upon its inner and outer peripheries is formed upon reverse curves. As seen in Fig. 2, the lip *e'* of the cam *e* is not concentric with the plug E, but diverges slightly therefrom, outward and forward, so that when moved forward, as said plug is turned to permit the flow of gas, said lip will pass over the pin *e'*, as seen in Fig. 2, and, pressing the same inward, will cause the points *a* and *c* to be brought into contact, as shown by Fig. 3. At the instant when the plug E has been sufficiently turned to permit gas to escape from the burner B, the cam-lip *e'* will pass beyond the pin *e'*, when the spring D will return the vibrating arm C to its normal position, the points *a* and *c* will be separated, and a spark produced that will ignite said gas. The plug E may now be turned so as to permit the escape of a full volume of gas, as seen in Fig. 4, or it may be turned

backward until said gas is cut off, without interference with the lighting apparatus, the only result to the latter, produced by thus closing the cock, being to cause the cam-lip *e'* to pass beneath the stud *c'*, and move it outward, as shown in Fig. 5, until said lip has passed beyond said stud, when, by the action of the spring D, the arm C will be returned to its normal position, as seen in Fig. 2.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. The means employed for operating the vibrating arm C, consisting of the cam *e* attached to and revolving with the plug E, and provided with the lip *e'*, which engages alternately with the outer and inner sides of a stud, *c'*, that is secured within and projects

horizontally rearward from the lower end of said arm, said parts being combined in the manner and for the purpose substantially as specified.

2. In combination with the vibrating arm C, which is pivoted to or upon the burner B, the spring D attached at one end to said burner, and at its opposite end to said arm, and operating to return the latter to position when moved therefrom in either direction, substantially as and for the purpose shown.

In testimony that I claim the foregoing I have hereunto set my hand.

ABRAHAM L. BOGART.

Witnesses:

MORTIMER J. ENNIS,
WM. N. RIBLET.