R. R. MOFFATT.

SELF-LIGHTING GAS-BURNER.

No. 187,403. Patented Feb. 13, 1877.

Fig. 1.

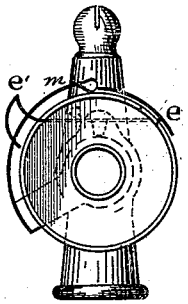



Fig. 2

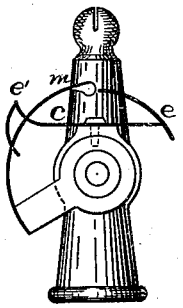



Fig. 5.

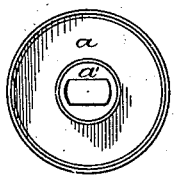



Fig. 3.

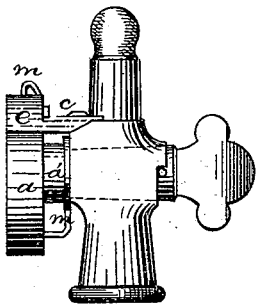



Fig. 4.

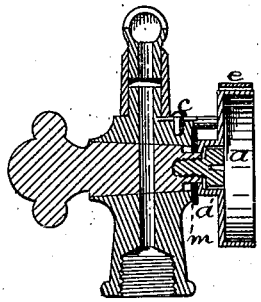
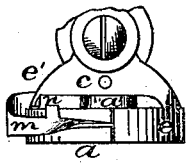



Fig. 6.




Witnesses:

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W. H. Hull.

Inventor:

R. R. Moffatt.

# UNITED STATES PATENT OFFICE

RICHARD R. MOFFATT, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-THIRD HIS RIGHT TO CHARLES R. BROWER, OF SAME PLACE.

## IMPROVEMENT IN SELF-LIGHTING GAS-BURNERS.

Specification forming part of Letters Patent No. **187,403**, dated February 13, 1877; application filed January 5, 1877.

*To all whom it may concern:*

Be it known that I, RICHARD R. MOFFATT, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Self-Lighting Gas-Burners, of which the following is a specification, reference being had to the accompanying drawings, which form a part of the same.

The object of this invention is to provide a cheap and desirable self-lighting gas-burner, that is simple in construction, not liable to get out of working order, and that will not consume the paper tape when used, thereby making no ash.

The invention consists in a novel arrangement of a cylindrical magazine to a gas cock and burner, and a means whereby a primed tape is fed out and a percussion-pellet thereon exploded, which lights the gas by the operation of turning it on.

In the drawings, Figure 1 is a view of the invention looking into the magazine. Fig. 2 is a view of the burner and gas-cock, (with the cylindrical magazine detached therefrom,) showing the spring-hammer, also the feed and cam. Fig. 3 represents a side view of the invention. Fig. 4 is a central section of the same, showing the manner of attaching the magazine, spring-hammer, feed, and cam to the gas cock and burner. Fig. 5 is a back view of the cylindrical magazine, showing the opening in the bottom of the recess. Fig. 6 is a top view of the invention, showing the spring-hammer, feed, cam, &c.

Similar letters of reference in the several figures of the drawings indicate like parts.

In the drawings, letter *a* is a cylindrical box, which is pressed into shape, out of sheet metal. *a'* is a cup-shaped recess or chamber in the center of the box *a*. In its bottom is an opening, through which passes the end of the gas-cock, and by which they are connected, the bottom of the chamber *a'* acting as a substitute for the washer used in the ordinary gas-cock.

The magazine *a* is attached to the gas-cock by means of a screw, the head of which fills the chamber *a'*, with its top face on a line with the bottom of the magazine *a*, so that there will be no projections within the magazine, which is intended and used for holding a coil of paper tape, primed at intervals with pellets of percussion compound. Near the top of the magazine is an opening, through which the tape passes in the operation of the invention. *m* is a spring, one end of which is formed or shaped so as to act as a hammer, with which to explode the pellets of percussion compound, the periphery of the box or magazine *a* acting as an anvil, upon which the hammer strikes. *n* is a spur or an offset upon the spring *m*. This spring extends partly around the cylindrical magazine *a*, and is then bent so as to pass down its rear side toward the center, where it is secured to the gas-cock by means of a hole or opening in the spring, similar to the one in the chamber *a'*, and is firmly held in place upon the gas-cock, between the burner and the chamber *a'*, when the screw is in fast, as shown in Fig. 4.

Attached to the burner is a spring, *c*, one end of which is shaped to form a stop-feed, *e*, for operating the primed tape. The other end is shaped to form a cam, *e'*, for raising the spring-hammer *m* when the gas-cock is turned for lighting. When turned in the other direction the hammer will not be raised. The spring *c* may be attached to the burner by means of a pin or screw, as shown. The magazine-cover is simply a cylinder similar to the magazine, which is pushed into place, the edge of the magazine passing over the periphery of the cover-box. Projecting outward at the center of the cover is a knob, by which it can be handled; or, if desired, the cover may be made in any other manner.

The operation of the invention is as follows: A coil of primed tape is inserted within the magazine *a*, with one end of it passing out a little distance (one pellet) through the opening in the upper part of the magazine. The gas-cock is then turned so as to allow the gas to flow at the burner. The cylindrical magazine *a* and the spring *m* turn with the gas-cock, being attached thereto, when the feed *e* holds the pellet-tape in a manner that causes it to pass out a little distance from the magazine *a*. At the same time the spur *n* passes upon the incline face of the cam *e*, and, in riding over it, raises the spring-hammer *m*, when it falls and strikes the pellet upon the tape,

which is in front of the feed *e*, exploding it, the fire from which, passing upward, lights the gas. The periphery of the cylindrical magazine acts as an anvil in exploding the primed tape. When the gas-cock is turned to shut off the flow of gas, the magazine *a* and spring *m* revolve in the other direction, and the spur *n* passes under the cam *e'*. At the same time it presses the hammer end of the spring *m* down upon the tape, holding the tape firmly against the magazine, causing it to move with the magazine and spring, and preventing it from returning into the magazine.

The spring *c* permits the feed-stop *e* and the cam *e'* to press or give freely in the operation of the apparatus.

The tape passes down between the periphery of the magazine and the hammer-spring after the pellets are fired or ignited, and, when long, may be cut or torn off, as desired.

The elements of this invention—viz., the cylindrical magazine, spring-hammer, cam, and feed piece—may be applied in combination with fluid-burning lamps, or in lighters of various shapes, and for use in various ways.

Having thus fully described the object, construction, and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a gas-lighting apparatus, the revolving magazine *a*, substantially as and for the purpose herein specified.

2. The magazine *a*, provided with a recess-chamber, *a'*, substantially as and for the purpose herein set forth.

3. In a lighting apparatus, substantially as specified, the cylindrical magazine *a*, having no projections upon its periphery, as herein set forth.

4. A lighting apparatus constructed, substantially as specified, so that the periphery of the cylindrical magazine will operate or act as an anvil upon which to strike and fire the pellets, substantially as and for the purpose herein specified.

5. The hammer-spring *m*, extending partly around the periphery of the magazine *a*, without contact therewith, so that the tape will pass between them, substantially as herein set forth.

6. The hammer-spring *m*, attached to the gas-cock, substantially as and for the purpose herein set forth.

7. The cam *e'*, arranged as specified, so that the spur *n* will pass under it and press the spring *m* downward upon the tape, substantially as herein set forth.

8. In combination with a moving magazine, the stationary feed *e*, arranged and operating substantially as and for the purpose herein set forth.

9. The combination of the stationary feed *e* and cam *e'* with the spring *c*, substantially as and for the purpose herein set forth.

10. The magazine *a*, attached to the gas-cock, as shown, so that they will rotate together, substantially as and for the purpose herein specified.

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