W. W. BATCHELDER.

PORTABLE PERCUSSION TORCH FOR LIGHTING GAS.

No. 192,964. Patented July 10, 1877.

Fig. 7.

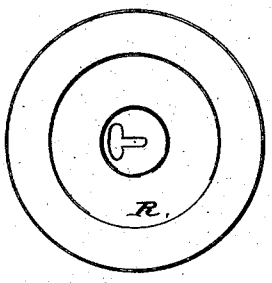


Fig. 1.

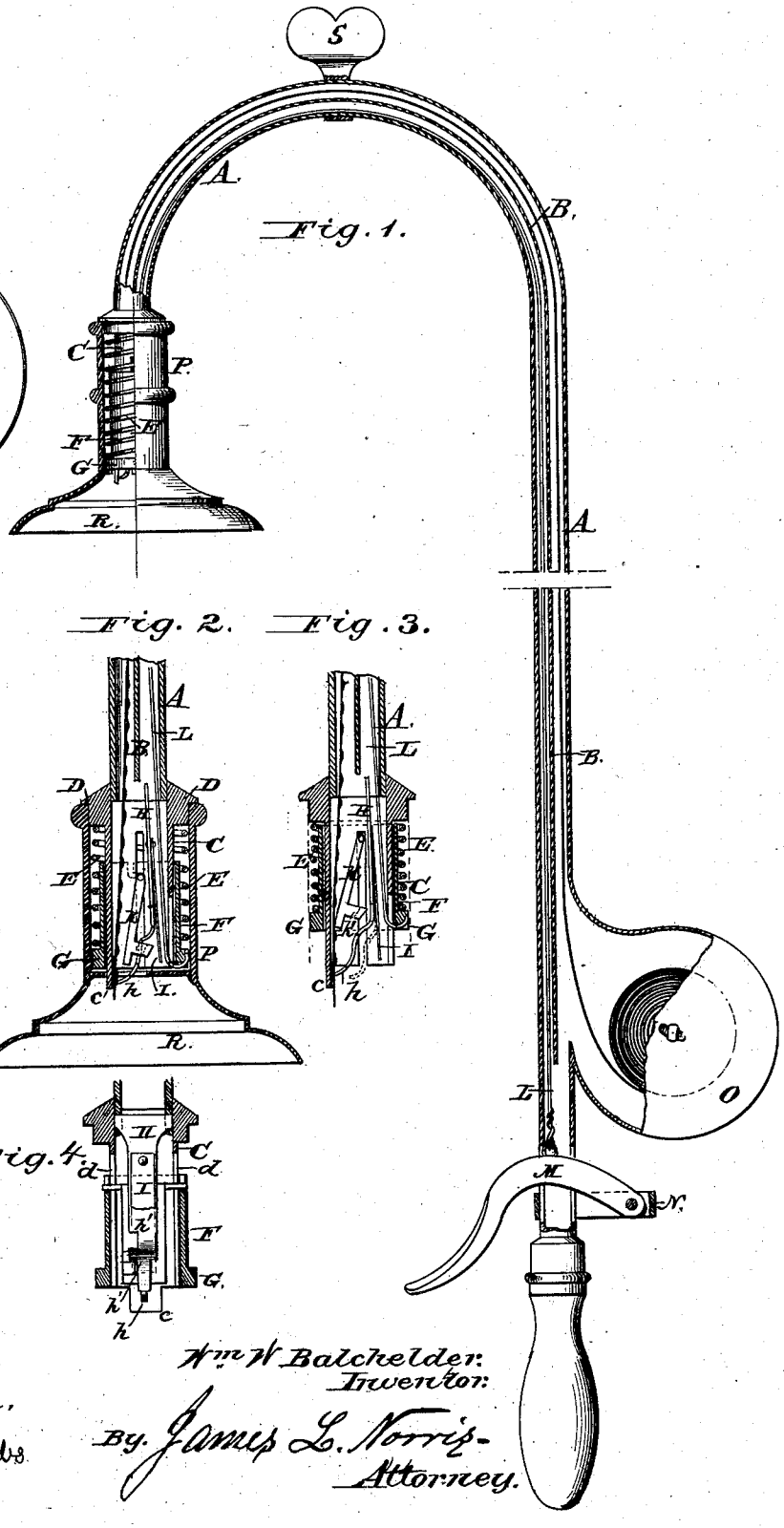


Fig. 5.

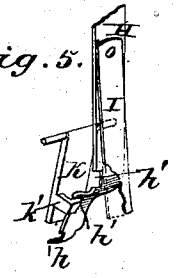


Fig. 2.

Fig. 3.

Fig 6

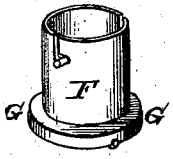


Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM W. BATCHELDER, OF NEW YORK, N. Y.

IMPROVEMENT IN PORTABLE PERCUSSION-TORCHES FOR LIGHTING GAS.

Specification forming part of Letters Patent No. **192,964**, dated July 10, 1877; application filed July 3, 1877.

To all whom it may concern:

Be it known that I, WILLIAM W. BATCHELDER, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Portable Percussion-Torch for Lighting Gas, of which the following is a specification:

This invention relates to an improved portable percussion-torch for lighting gas, its object being to provide an instrument of cheap and simple construction, that can be readily and conveniently manipulated to feed and successively ignite a series of percussion-pellets arranged upon a tape in the same manner as in the ordinary percussion-primers; and to this end it consists of a metallic tube of suitable length, provided at its upper end with a device for withdrawing a tape or primer containing a series of explosive pellets from the magazine, feeding said tape and igniting-pellets thereon, and at its lower end with a magazine for holding the primer, a lever for operating the feeding and igniting mechanism, (which is effected through the medium of a wire extending up through the body of the tube,) and a handle, by means of which the instrument may be held by the operator, all as more fully hereinafter specified.

In the drawings, Figure 1 represents a partial section and elevation of my improved torch; Fig. 2, a sectional view of the feeding and igniting devices; Fig. 3, a similar sectional view of the feeding and igniting devices, with the outer casing removed, showing the hammer just in position to strike; Fig. 4, a rear view of the spring which carries the hammer; Fig. 5, a detached view of the spring carrying the hammer and the tumbler for operating the same; Fig. 6, a detached view of the tubular section, which rides on the tubular extension of the torch-tube; and Fig. 7, a bottom view of the bell attached to the outer casing of the tubular extension.

In the drawings, the letter A represents a tube of metal or other suitable material, of convenient length, which is preferably curved at the upper end to bring the igniting mechanism, to be hereinafter described, into convenient position over the gas-burners, although the said curved construction is not absolutely essential. Said tube is divided on its interior into two longitudinal compartments by means of a longitudinal partition, B, which extends from a point at or near one end to a point at or near the other end of said tube. At the upper end of the tube, either attached to the same or formed thereon, is an enlarged tubular extension, C, provided with slots *d d* on opposite sides, extending from near its base to its extremity, said extension having a shoulder, D, at its base, upon which sets one end of a spiral spring, E. The letter F represents a short tubular section, provided with a shoulder, G, at its outer end, said section being adapted to ride upon the tubular extension C, the shoulder thereon bearing against the other end of the spiral spring E, which surrounds those portions of the extension C and section F between the shoulders D and G thereon. Within the tubular extension C, and permanently secured to the same at its base, is a spring, H, extending to the extremity thereof, the end of said spring being bent forward, so as to form a hammer, *h*, which bears against an anvil, *c*, formed by a projecting lip at the extremity of said extension C, the spring being also provided with recess *h' h'* at one side, for the purpose to be hereinafter explained. The interior of the extension C, at the rear of anvil *c*, is provided with a rectangular groove, *d*, in which the tape travels.

The said spring may be secured within the tubular extension C in any convenient manner, but preferably by means of longitudinal recesses on opposite sides of said extension at its base, into which the edges of the lower end of said springs are forced and held.

To the rear of said spring H, near its lower end, is secured the lower end of an additional spring, I, the upper end of which terminates directly behind the upper end of the spring H, for the purpose to be hereinafter described.

The letter K represents a tumbler, located within the extension C, and provided with projecting pins on opposite sides at its lower end, which ride in the slots in said extension C, and are pivoted in the tubular section F, which rides on the extension C. Said tumbler K lies in front of the spring H, and is provided with a right-angled or L-shaped projection, *k*, at its rear, near the lower end, which projects through the lower recess in the

spring H, the bent arm setting to the rear of said spring when the parts are in their normal position.

The letter L represents a wire, chain, or cord, fastened at one end to the shoulder of the section F, and extending down through one of the longitudinal chambers in the tube A, the other end being secured to a thumb-lever, M, passing through said tube, and pivoted to a standard, N, near the handle, in such position as to be under the control of the thumb or finger of the operator.

The letter O represents the magazine in which the primer is contained, consisting of a flat cylindrical casing with a removable cover. Said casing is attached to the tube A on the side of the bend to which the handle is attached, in order that the magazine may be out of the way of the globe or shade when using the instrument, and to prevent its becoming heated by the flame of the gas, which might possibly ignite its contents. The primer is in the form of a tape, provided with percussion-pellets at suitable intervals, similar to the ordinary percussion-primers, the tape being in the form of a coil, one end of which is extended up through the tube A, and out between the anvil on the extension C, the end of the tumbler K, and the hammer on the end of the spring H.

The letter P represents a removable cylindrical casing, secured over the extension C and the section F, to protect the working parts thereof, and the lower end of said casing is provided with a bell, R, to collect the gas as it escapes from the burner, and hold it until ignited by the explosion of one of the pellets.

In order to provide for the insertion of the tape or primer when required, I provide each tape or primer at the ends with some means by which it can be fastened in the magazine so that the last portion thereof cannot be withdrawn from the magazine during the operation of the instrument.

The instruments are put up ready for use with a tape or primer properly inserted, and by means of the fastening device at the end thereof, the latter portion is retained in the magazine until a new tape can be attached, thus obviating all difficulty in replacing the primers or tapes.

Any convenient fastening device may be employed for this purpose; but I prefer simply to tip the ends of the tape with mucilage, so that when inserted it can be looped and fastened around a pin at the center of the magazine, and, when required, another can be readily attached to the nearly-exhausted one.

The operation of my invention is as follows: The cock of the burner being properly set by means of the key S on the instrument for the purpose, the bell is placed over the burner, and the lever M is depressed by the thumb of the operator. This operation causes the section F to be drawn backward upon the tubular extension C, compressing the spiral spring E.

The tubular section carries with it the tumbler K, the annular projection thereon traveling down the rear side of the bent end of the spring H, lifting the end of the tumbler away from the tape or primer as said tumbler is being drawn backward. When the projection *k'* arrives opposite the lower recess *h* in the spring H, it will be forced forward through said opening by means of the spring I to the front of the spring H, just below the bent portion thereof.

Upon releasing the thumb-lever M the spring F will operate to throw the parts into their normal positions, during which the projection *k*, acting against the bent portion of the spring H, will force it back away from the anvil; and the end of the tumbler, bearing against the tape or primer, will feed it forward until the projection *k'* on the tumbler arrives opposite the upper recess *h* of the spring, when the spring H will be set free, and the anvil at the end thereof allowed to fall against the pellet of percussion, striking it against the anvil, igniting it, and lighting the gas.

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

1. A gas-torch provided with mechanism operated automatically to withdraw the tape or primer from the magazine, and feed and ignite the same by the reaction of a spring operated by means of a cord, wire, or chain extending down the interior of the tube of the torch to an operating-lever, substantially as and for the purposes described.

2. A gas-torch having the magazine located upon the same side of the bend as the handle thereof, whereby all injury to the globe or shade is avoided in the use of the instrument, and all danger of the magazine becoming heated and the contents ignited is obviated, substantially as set forth.

3. The combination, in a gas-torch, of the tubular extension C and tubular section E, riding thereon and operated by means of a spring, and a chain, cord, or wire extending to a lever near the handle, with the springs H and I and tumbler K, whereby the tape or primer is withdrawn from the magazine and fed forward and ignited, substantially as set forth.

4. In combination with the tube A, the longitudinal partition therein dividing the same into two compartments for the passage of the operating-wire and the tape or primer, and forming a flat guide for the latter, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

W. W. BATCHELDER.

Witnesses:

JAMES L. NORRIS,

JAMES A. RUTHERFORD.