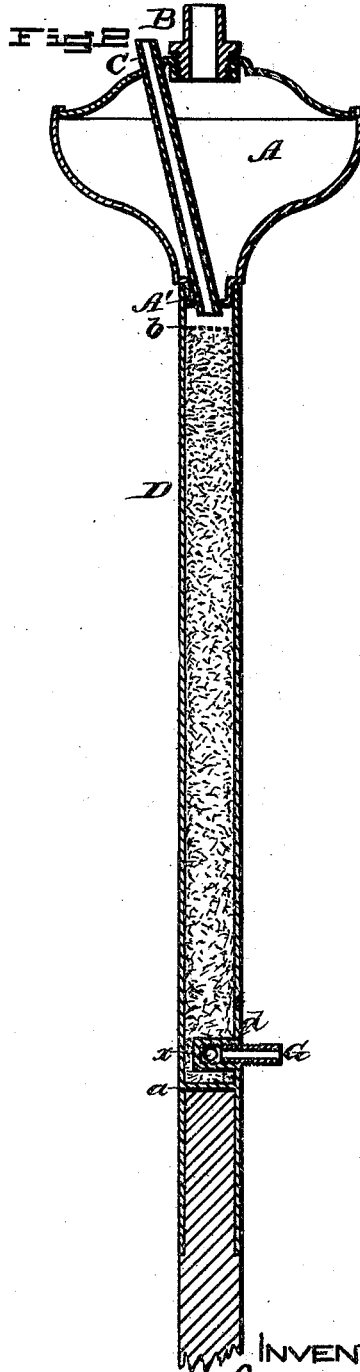
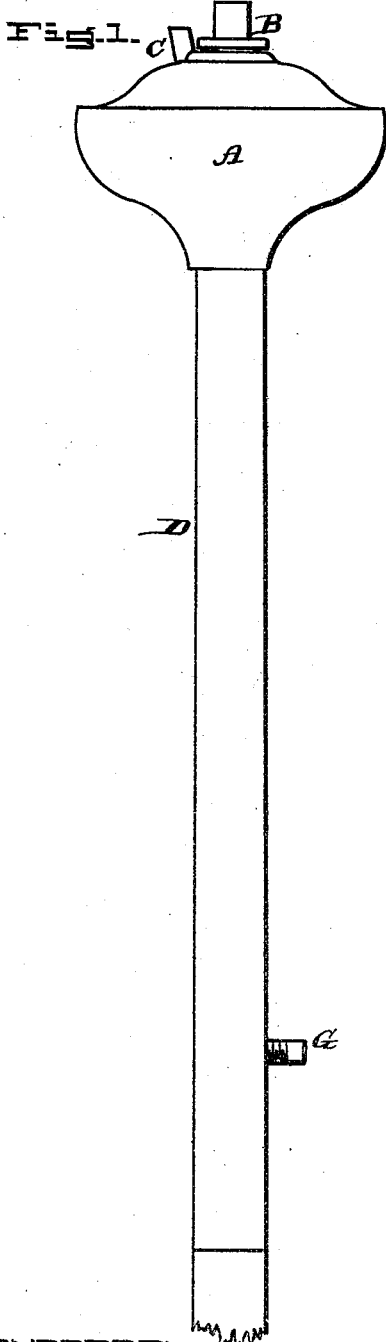


I. W. SHALER.
TORCHES.

No. 180,659.

Patented Aug. 1, 1876.



WITNESSES:

Geo. S. Dubbanel
M. J. Sullivan

INVENTOR

I. W. Shaler.

PER

A. S. Abbott.

ATTORNEY.

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Fig. 4.

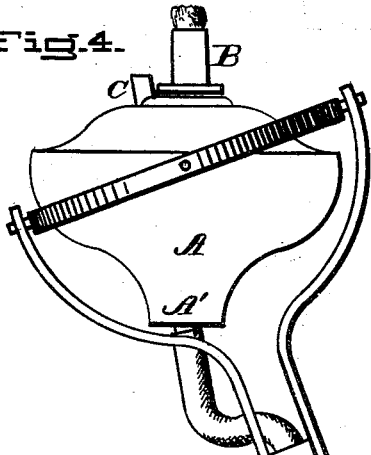


Fig. 5.

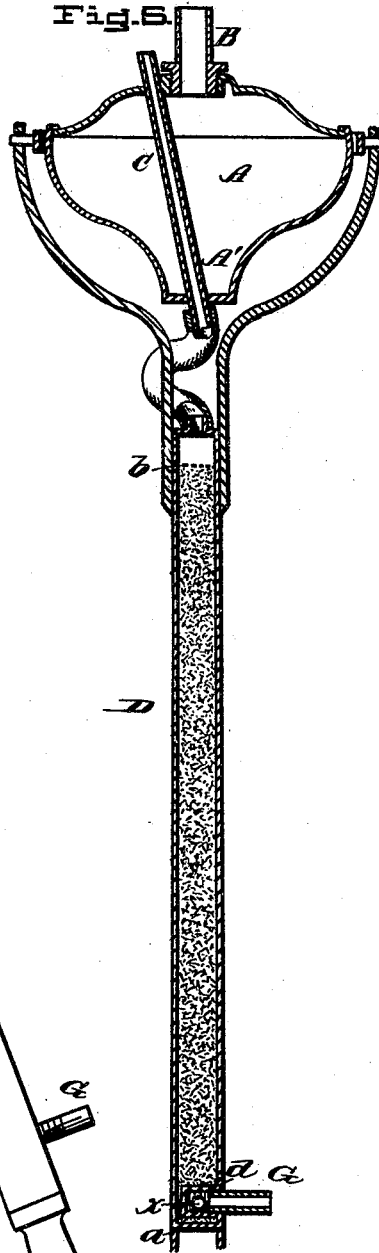
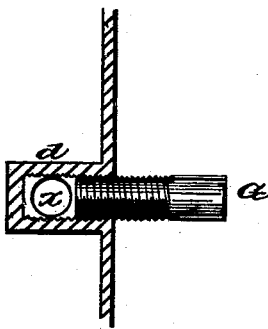


Fig. 6.



WITNESSES:

Geo. F. Rutnamel
M. J. Sullivan

INVENTOR:

I. W. Shaler.
PER

A. S. Abbot.
ATTORNEY.

UNITED STATES PATENT OFFICE.

IRA W. SHALER, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN TORCHES.

Specification forming part of Letters Patent No. **180,659**, dated August 1, 1876; application filed July 26, 1876.

To all whom it may concern:

Be it known that I, IRA W. SHALER, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Torches, of which the following is a specification:

The nature of my invention consists in the construction and arrangement of a torch, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, which forms a part of this specification, and in which—

Figure 1 is a side view. Fig. 2 is a vertical section. Fig. 3 is a detail view. Figs. 4 and 5 show modification.

A represents an ordinary lamp or reservoir, such as is used for burning heavy oils, and is provided with the wick-tube B. Through the lamp A passes a small tube, C, the upper end of which is close to the wick-tube, and the lower end projects through the cylindrical projection A' formed on the bottom of the lamp. D represents a metal tube forming a part of the handle of the torch. The lamp A is fastened in the upper end thereof by having its projection A' fitting therein, while in the other end of the tube a wooden handle is to be inserted. Near the lower end of the tube D is a cross-partition, *a*, and above the same the tube is filled nearly to the upper end with sawdust saturated with benzine, naphtha, or other volatile hydrocarbon liquid. A perforated diaphragm, *b*, is then pressed down on the sawdust. Within the tube D, above the partition *a*, is a short tube, *d*, which opens through the side of the large tube, is closed at its inner end, and has side openings *x x*.

Into this tube *d* is screwed a mouth-piece, G, which is to be run clear up to the inner end of the tube *d*, closing the mouth-piece, and preventing any air from entering.

When the torch is lighted, the heavy oil burns at all times with the same flame, with no danger of explosion from sudden gust of wind or otherwise. By slightly unscrewing the mouth-piece G, and blowing through, a puff of air is forced through the sawdust and light oil contained therein, and becomes carbureted, and as gas escapes through the tube C into the flame of the torch, it produces a flash-light by being suddenly ignited. This may be repeated as often as desired without in any way interfering with the light of the torch itself.

A torch constructed in this manner, though mainly intended for processions, &c., can be used for many purposes, and be made to throw a flash-light whenever desired.

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

The combination of the lamp A with small tube C passing through the same, the handle-tube D having diaphragms *a b*, and the space between them filled with sawdust saturated with light hydrocarbon oil, the perforated tube *d*, and adjustable mouth-piece G, all constructed substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

IRA W. SHALER.

Witnesses:

H. B. BROWN,
JAS. F. DU HAMEL.