

No. 612,272.

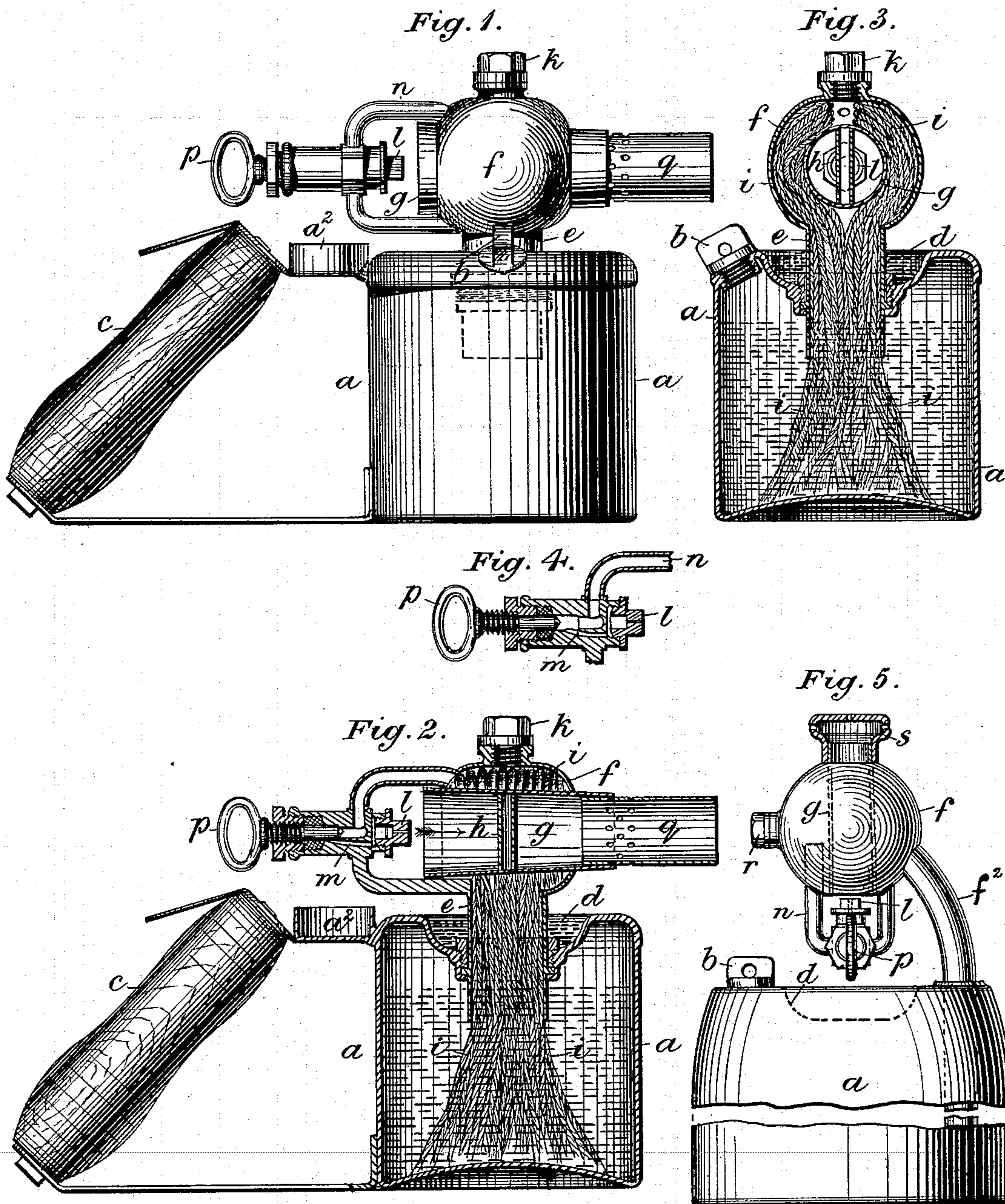
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W. PULLEN.

BLOWPIPE LAMP FOR PLUMBERS OR PAINTERS.

(Application filed Nov. 5, 1897.)

(No Model.)



Witnesses:-

Richard Skerrett
William James Bowker

Inventor:-

William Pullen

UNITED STATES PATENT OFFICE.

WILLIAM PULLEN, OF BIRMINGHAM, ENGLAND.

BLOWPIPE-LAMP FOR PLUMBERS OR PAINTERS.

SPECIFICATION forming part of Letters Patent No. 612,272, dated October 11, 1898.

Application filed November 5, 1897. Serial No. 657,549. (No model.) Patented in England August 19, 1896, No. 18,384.

To all whom it may concern:

Be it known that I, WILLIAM PULLEN, a subject of the Queen of Great Britain, residing at Birmingham, England, have invented certain new and useful Improvements in Blowpipe-Lamps for the Use of Plumbers or Painters and for Heating Purposes Generally, (for which I have obtained Letters Patent of Great Britain, No. 18,384, dated August 19, 1896;) and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is principally to dispense with the air pumps or blowers ordinarily employed in blowpipe-lamps for forcing by pressure of air the petroleum or other volatile liquid hydrocarbon from the reservoirs or containers to the vaporizers of the lamps; and my said invention consists in constructing and arranging for that purpose the parts of the said blowpipe-lamps, as hereinafter described.

I will describe my invention in connection with a blowpipe-lamp for use by plumbers and painters.

The cylindrical reservoir containing the petroleum or other like volatile liquid hydrocarbon is filled, preferably, by an opening at top, fitted with a closing screw-plug, the said reservoir being provided with a handle for holding the lamp when in use. The top of the cylindrical reservoir is cupped for the purpose hereinafter described, and at the middle of the said top is a short pipe or wick holder which supports a globular or cylindrical vaporizer closed at top by a screw-plug. In the vaporizer is a horizontal pipe or passage through which the flame is projected, a flame-obstructing cross-piece, preferably in the form of a tube, in the said horizontal pipe dividing or spreading the said flame. The petroleum or other volatile liquid hydrocarbon is fed from the reservoir to the vaporizer by an asbestos wick, the said wick rising through the axial wick-tube described and filling the space between the passage in the vaporizer and the sides of the vaporizer. At the handle side of the lamp and in line with the axis of the tubular passage in the vaporizer is a nozzle or burner, and passing from

the said burner to the top of the vaporizer is a pipe by which the vapor produced in the vaporizer is conducted to the burner or nozzle. At the back of the burner or nozzle is a screw-valve by which the passage of the vapor from the vaporizer to the burner is controlled and cut off.

For laboratory or other heating purposes a vertical instead of a horizontal flame may be used, or a spreader may be arranged at the top of the vaporizer for producing two or more vertical and horizontal flames or jets.

My improved blowpipe-lamps are applicable for heating purposes generally, the details of their construction being modified to suit the particular use to which they are to be applied.

Figure 1 of the accompanying drawings represents in side elevation, Fig. 2 in longitudinal section, and Fig. 3 in cross-section, a plumber's or painter's blowpipe-lamp constructed according to my invention. Fig. 4 represents a section of the valve in its open position, and Fig. 5 represents a modified blowpipe-lamp constructed according to my invention, as hereinafter described.

The same letters of reference indicate the same parts in the several figures of the drawings.

I will first describe the principal arrangement of my invention represented in Figs. 1, 2, 3, and 4.

a is the reservoir of the lamp containing the petroleum or other like volatile liquid hydrocarbon. The said reservoir is filled by an opening at top closed by the screw-plug *b*. (See Fig. 3.)

c is the handle by which the lamp is held when in use.

d is the cupped top of the reservoir, constituting a shallow vessel for holding a small quantity of petroleum or methylated spirit by which the vaporizer is first heated for starting the lamp. The valve by which the passage of vapor of oil from the vaporizer to the burner is controlled may also be heated on starting the lamp by petroleum or methylated spirit poured into the small cup *a*² and ignited.

Screwed into the middle of the reservoir *a* and projecting therefrom is a short pipe or wick holder *e*, supporting the globular (or

cylindrical) vaporizer *f*, having in its axis a horizontal tube or passage *g*. In the middle of the pipe or passage *g* of the vaporizer is a flame-obstructing cross-piece *h*, preferably in the form of a tube, for spreading or dividing the flame passing through the said pipe or passage.

i is the asbestos wick by which the petroleum in the reservoir *a* is fed by capillary attraction to the vaporizer *f*. It will be seen that the asbestos wick *i* rises from the reservoir through the axial wick-tube *e* and fills the space between the sides of the globular vaporizer *f* and the pipe or passage *g*, as represented in the cross-section, Fig. 3. The lifting of the asbestos wick *i* from the reservoir *a* into the vaporizer *f* may be assisted by means of a wire passed through the opening in the top of the vaporizer to draw up the wick, the said opening being closed by the screw-plug *k*.

l is the burner at the handle end of the lamp, the said burner being in communication by means of the exit-passage *m* and pipe *n* with the top of the vaporizer *f*. In line with the axis of the tubular passage *g* in the vaporizer and at the back of the burner *l* is a screw-valve *p*, by which the passage of the vapor of oil from the vaporizer to the burner is controlled and cut off.

In Fig. 2 the screw-valve *p* is represented in its closed position, the passage of the vapor from the vaporizer to the burner being cut off, and in Fig. 4 the valve is represented open and the vapor permitted to pass from the vaporizer through the pipe *n* and exit-passage *m* to the burner *l*.

The nozzle or delivery end of the tubular passage *g* through which the flame passes is provided with a perforated pipe *q* for admitting air to the flame.

In using my improved blowpipe-lamp—say for burning off paint—a small quantity of petroleum or methylated spirit is poured into the cupped top or shallow vessel *d* of the reservoir *a* and into the small cup *a*² and the said petroleum ignited for the purpose of starting the lamp. The vaporizer *f* is heated and the petroleum raised by the capillary action of the asbestos wick *i* into the said vaporizer is thereby vaporized, and when the vapor has attained the desired pressure the screw-valve *p* of the burner is opened and the vapor under pressure escapes at the nozzle or burner *l* and is ignited and a blowpipe-flame produced, the said flame passing through and projecting from the nozzle of the tubular passage *g* in the vaporizer. By the heat of the blowpipe-flame in the tubular passage *g* of the vaporizer the heating of the vaporizer and the production of vapor under pressure is continued after the exhaustion of the petroleum or methylated spirit in the vessel *d* by which the starting of the flame was produced. In this way the automatic feeding of the nozzle or burner with the vapor of oil under pressure is continued

so long as the nozzle or burner valve *p* is open and the supply of petroleum to the vaporizer maintained.

Fig. 5 represents in elevation a blowpipe-lamp for laboratory and other like work constructed according to my invention, the said lamp having a vertical flame and being also provided with a spreader for producing two or more vertical and horizontal flames or jets. In this modified lamp the tubular passage *g* through the vaporizer *f* is vertical, the said vaporizer being supported by the side pipe *f*², through which the asbestos wick from the reservoir *a* is drawn into the said vaporizer *f* by means of a wire passed through the side opening at *r* in the said vaporizer.

The vapor is conducted by the pipe *n* from the vaporizer to the burner *l*, the said vapor being regulated and cutoff by the screw-valve *p*, as described with respect to the lamp, Figs. 1, 2, and 3.

When the vertical flame issuing from the projecting top of the passage *g* in the vaporizer is required to be spread, a spreader (marked *s*) may be fitted upon the projecting top of the passage *g*, as represented in the drawings. By the use of this spreader a series of horizontal flames or jets and one or more vertical jets are produced. Although I have found wicks of asbestos to answer well, yet wicks of other non-combustible fibrous material, such as slag-wool, may be used in lamps constructed according to my invention.

I have represented the flame-obstructing cross-piece *h* in the form of a single tube, but do not wish to be understood as limiting myself to a single cross-piece, nor to making this cross-piece tubular.

Having now particularly described and ascertained the nature of my invention and in what manner the same is to be performed, I declare that I claim as my invention—

A blowpipe-lamp, consisting of an oil-reservoir having a tubular wick-holder rising from its top, an atmospheric burner-tube mounted on the wick-tube, a flame-obstructing cross-piece in the interior of the burner-tube, a wick-case surrounding the outer side of and concentric with the burner-tube and communicating through the wick-tube with the reservoir, an incombustible wick extending through the wick-case entirely around the burner-tube and hanging within the reservoir to lead oil from the latter to the wick-case around said burner-tube, and a pipe provided with a regulating-valve and burner jet or nipple, the burner-jet arranged centrally near one end of the burner-tube and the pipe leading from the burner-jet to the said wick-case which surrounds the burner-tube, substantially as and for the purposes described.

WILLIAM PULLEN. [L. S.]

Witnesses:

RICHARD SKERRETT,
WILLIAM JAMES BOWKER.