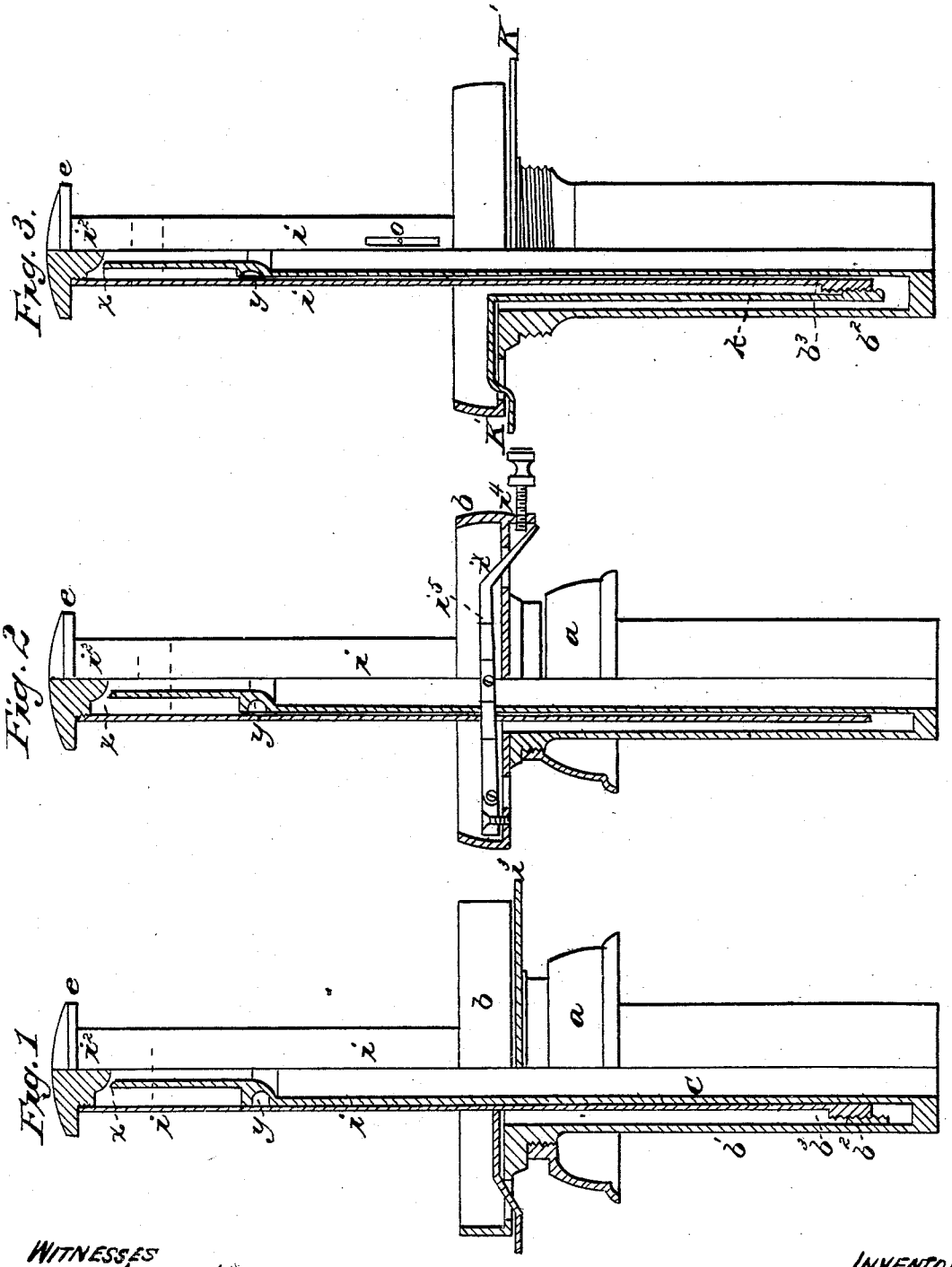
S. HOLMES.

Vapor Burner.

No. 83,854. Patented Nov. 10, 1868.



WITNESSES

John F. Chew

Joe Stepton

INVENTOR

Samuel Holmes

by his Atty

Wm D. Baldwin

United States Patent Office.

SAMUEL HOLMES, OF 180 HIGH HOLBORN, ENGLAND.

Letters Patent No. 83,854, *dated November* 10, 1868; *patented in England, March* 23, 1868.

IMPROVEMENT IN VAPOR-BURNERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, SAMUEL HOLMES, of 180 High Holborn, in the county of Middlesex, England, a subject of the Queen of Great Britain, have invented or discovered a new and useful "Improvement in Lamps for Burning Volatile Oils and Spirits;" and I, the said SAMUEL HOLMES, do hereby declare the nature of the said invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement thereof; that is to say—

This invention has for its object the improvement of lamps, for burning volatile oils and spirits, by constructing them in such manner as to insure perfect safety from explosion, and also the complete control of the light.

These objects are obtained by combining in the same lamp the following peculiarities, viz:

First, the insulation of the parts heated by the flame, from the vase or reservoir, by surrounding such parts by a casing containing a non-conductor of heat, and reaching to the bottom of the vase or thereabouts.

Second, a valve arranged in the upper part of the burner, and operated by a screw or other means.

Third, a packed joint, which permits the movement of the valve without permitting the escape of the volatile vapor, except at the perforations of the burner.

The lamp-burners, represented in the accompanying drawings, show several modes in which I have contemplated the application of the principle of my invention, the reservoirs of oil being omitted in the several figures.

In the construction represented at Figure 1, *a* is the cap or collar, which is secured by cement to the top of the reservoir, and *b* is the gallery to receive the globe. This gallery is screwed fast to the cap, *a*, and is provided with a tube, b^1, which descends through the cap to the bottom of the reservoir, where it is connected with the lower end of the wick-tube *c*, which receives the wick, in the ordinary way. The tube b^1, thus arranged, forms a casing, which insulates the wick-tube from the fluid in the reservoir.

The wick-tube is surrounded by a tube, *i*, which is constructed to slide upon it, and has the button *e* secured to its upper end. This sliding tube *i* is perforated, as at i^1, below the button, to permit the vapor to escape from it.

There is a packed, gas-tight joint, *y*, between the wick-tube *c* and the sliding tube *i*, which joint prevents the escape of the vapor, while permitting the outer tube to slide up and down. The vapor generated in the wick-tube escapes into the outer tube, and is burnt as it issues from perforations, i^1, therein.

i^2 is a valve-plug, formed on the under side of the top of the tube *i*, and which, when this tube is in its lowest position, fits closely against the upper end of the wick-tube, and so stops the escape of vapor therefrom, thus extinguishing the light, and, as is obvious, the same valve will serve to regulate the size of the flame.

The tube *i* has a fast-threaded screw, b^2, at its lower end, which works into a corresponding screw, b^3, fixed within the tube b^1.

i^3 is a ring, connected by arms with the tube *i*, and by it the tube can be turned partly round, to obtain the desired regulation or extinction of the flame by raising or lowering the tube *i* by the screws, thus opening or closing the valve *x*. The arms which carry the ring i^3 are intermediate of those which carry the gallery for the glass.

Figure 2 shows a similar lamp, except that the vertical movement of the tube *i*, by which the valve i^2 is opened or closed, is here obtained by a lever, $i^\times$, jointed to the gallery and to the tube, and which is pressed upwards by a spring, i^5, and depressed by a screw, i^4, acting upon an inclined plane at its end.

Figure 3 again shows a similar lamp, but here the tube *i* is prevented turning upon the wick-tube by a stud and slot, *o*, as is shown, and the screw at its lower end works with a screw at the lower end of a tube, *k*, to which the disk *k'* is connected by arms.

What I claim, is—

1. The combination of the insulating-casing, the packed, gas-tight joint, and the valve, constructed to operate substantially as before described.

2. Also, the combination, with the insulating-casing, the packed, gas-tight joint, and the valve, of the lever $i^\times$ and screw i^4, substantially as shown in fig. 2.

SAMUEL HOLMES.

Witnesses:

G. F. WARREN, } *Both of No.* 17 *Gracechurch*
T. L. WARNER, } *Street, London.*