134,430

PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION.

Improvements in Oil or Spirit Vapour Stoves and Lamps.

I, RICHARD HENRY STEPHENS, of 40, Church Road, Moseley, Birmingham, Engineer, do hereby declare the nature of this invention to be as follows:—

This invention relates to oil or spirit vapour stoves and lamps of the well-known "Primus" type, in which oil is raised from a container through a central supply conduit and branched feed tubes to a vaporiser having a pair of downwardly extending vapour tubes situated between the feed tubes and terminating in an upwardly directed vapour jet or plug situated beneath an open mixing tube leading to the burner; a grid being supported around the burner by means of rod supports carried by the oil container.

The object of the present invention is to provide self-contained means for clearing the passage of the vapour jet or nozzle after use.

According to the invention, the vapour tubes terminate at their lower ends in an inclined or obliquely disposed tubular body carrying, at its upper end, the vapour jet or plug which, together with the lower-end of the mixing tube, is correspondingly inclined or set obliquely, the said tubular body containing a stem or rod carrying a needle which can be propelled or repelled by the stem so as to enter the bore of the vapour plug or jet after use, and thereby always ensure the said bore being clear and unobstructed, besides serving to regulate the flame. Preferably the stem or rod is provided with a valve face which closes on to a seating when the needle is within the bore of the vapour plug, thus obviating the necessity of relieving the pressure in the container, whilst, when the needle is withdrawn, a shoulder on the stem is arranged to tightly compress a packing or gland at the outer end of the tubular body.

In carrying out the said invention, the vaporiser is supplied with oil through two feed tubes or branches carried by the upper end of a main central tube passing downwards through the oil container, said feed tubes entering the bottom of the vaporiser, which is of known or suitable construction. The oil vapour leaves the vaporiser by two depending curved tubes of dissimilar length, arranged in a plane at right angles to the plane of the feed tubes, and terminating at their lower ends in an inclined tubular body within whose upper end is screwed the vapour plug or jet, which is similarly inclined. Contained within the tubular body is a stem or rod carrying a screw-threaded collar engaging an internally screw-threaded portion of the body. At its inner end this stem carries a needle adapted to be traversed longitudinally by the rotation of the stem so as to enter the bore of the vapour plug after the stove has

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been used, in order to keep said bore clear and unobstructed. At the said forward end of the stem, adjacent the needle, a coned valve face is provided, which, when the needle is within the bore of the vapour plug, engages a seating inside the body. The outer end of the stem passes through a gland-nut screwed into the body, and is fitted with a suitable head or knob. When the needle is withdrawn the screw-threaded collar on the stem is adapted, through the medium of washers, to compress a suitable packing held in place by the gland-nut, so as to render the tubular body gas-tight.

The lower end of the mixing tube passing through the vaporiser is inclined or curved to correspond to the inclination of the vapour plug, and it may be fitted with a conical disc to prevent back-lighting.

Dated the 9th day of January, 1919.

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COMPLETE SPECIFICATION.

Improvements in Oil or Spirit Vapour Stoves and Lamps.

I, Richard Henry Stephens, of 40, Church Road, Moseley, Birmingham, Engineer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to oil or spirit vapour stoves and lamps of the type in which oil is raised from a container through a central supply conduit and branched feed tubes to a vaporiser having a pair of downwardly extending vapour tubes situated between and in a plane at right angles to the feed tubes and terminating in an upwardly directed vapour jet or plug situated beneath an open mixing tube leading to the burner.

It is known in vapour burners to employ, in combination with a single oil-feed tube, a single depending vapour tube terminating in a chamber or housing carrying an upwardly inclined vapour jet and containing an upwardly inclined needle valve for clearing the passage of the jet and for regulating the flame, the needle valve being in alignment with the inclined lower end of an open mixing tube of the burner.

The object of the present invention is to provide a simple means for applying a needle clearing and regulating valve to a vaporiser and burner of the type referred to above, in which two depending vapour tubes are arranged between and at right-angles to a pair of oil-feed branches.

According to the said invention, the lower ends of the two vapour tubes are situated outside the plane of the feed tubes and terminate at opposite sides of an upwardly inclined tubular body situated in the same plane as the said vapour tubes and carrying, at its upper end, the vapour jet or plug, the said tubular body containing the needle valve for clearing the jet and regulating the flame.

Preferably the stem or rod is provided with a valve face which closes on to a seating when the needle is within the bore of the vapour plug, thus obviating the necessity of relieving the pressure in the container when extinguishing, whilst when the needle is withdrawn, a shoulder on the stem is arranged to tightly compress a packing or gland within the tubular body.

Figure 1 of the accompanying drawings is a side elevation of a vaporiser and burner in accordance with the present invention.

Figure 2 is a vertical section through the same.

Figure 3 is a longitudinal section through the tubular body containing the needle valve

Figure 4 represents a section on line *x*, Figure 3, upon a larger scale.

Figure 5 represents a modification.

The vaporiser is supplied with oil through two feed tubes or branches 1, 1, carried by the upper end of a main central tube 2 passing downward through the usual oil container, said feed tubes entering the bottom of the vaporiser chamber 3, which is of known or suitable construction. The oil vapour leaves the vaporiser by two depending curved tubes 4, 4, of dissimilar length, arranged in a plane at right angles to the plane of the feed tubes 1, 1, and terminating at their lower ends in an inclined tubular body 5 within whose upper end is screwed the vapour plug or jet 6, which is similarly inclined. Contained within the tubular body is a stem or rod 7 carrying a screw-threaded collar 8 engaging an internally screw-threaded portion 9 of the body. At its inner end this stem carries a needle 10 adapted to be traversed longitudinally by the rotation of the stem so as to enter the bore of the vapour plug after the stove has been used or while in use, in order to keep said bore clear and unobstructed. At the said forward end of the stem, adjacent the needle, a coned valve face 11 is provided, which, when the needle is within the bore of the vapour plug, engages a seating inside the body. The outer end of the stem passes through an adjustable gland-nut or cap 12 screwed on to the body, and is fitted with a suitable head or knob 13. When the needle is withdrawn the screw-threaded collar on the stem is adapted, through the medium of a washer 14, to compress a suitable packing 15 held in place by a spring 16 contained within the cap 12 and acting on a sliding collar 17. By this means the tubular body is rendered gas-tight. The lower end of the mixing tube 18 passing through the vaporiser is inclined or curved to correspond to the inclination of the vapour plug. When the needle valve is within the bore of the jet and the coned valve face 11 on its seating, the passage of the gas to the burner is cut off. and by adjusting the said needle valve the supply of gas can be regulated as required. By removing the spindle 7 and packing from the tubular body 5 access can be had to the vapour tubes 4, 4, for cleaning the same.

As represented in Figure 5, the inclined lower end of the mixing tube 18 may be fitted with a coned sleeve 19 to prevent back-lighting. The arrangement of the tubes 4, 4, and needle valve 10 with its operating stem 7, is the same as in the construction described above.

For lighting purposes, the vaporiser can be used inverted for use with an inverted burner.

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

1. In oil or spirit vapour stoves and lamps of the type referred to, the combination with the vaporiser, of two downwardly extending vapour tubes (4, 4,) arranged between and at right-angles to the two feed branches and terminating at their lower ends (which are situated outside the plane of the feed tubes) at opposite sides of an inclined or obliquely disposed tubular body (5) situated in the same plane as the vapour tubes and carrying, at its upper end, the vapour jet or plug which, together with the lower end of the mixing tube (18), is correspondingly inclined or set obliquely, the said tubular body containing a stem or rod carrying a needle which can be propelled or repelled by the stem so as to enter the bore of the vapour plug or jet, substantially as described.

2. In an oil or spirit vapour stove or lamp according to Claim 1; providing the stem or rod carrying the needle with a valve face (11) which co-operates with a seating when the needle is within the bore of the vapour plug in order to shut off or regulate the passage of the gas to the burner, substantially as described.

3. A vapour stove or lamp according to Claim 1 or 2, in which the needle stem or rod is provided with a shoulder adapted, when the needle is withdrawn, to compress a packing contained within the tubular body, substantially as described.

4. A vapour stove or lamp according to Claim 1, 2 or 3, in which the needle stem or rod, together with its packing, is bodily removable from the tubular body, in order to give access to the vapour tubes for cleaning the latter, substantially as described.

5. The improved vapour stove or lamp substantially as herein described and set forth.

Dated this 2nd day of July, 1919.

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Fig.1.

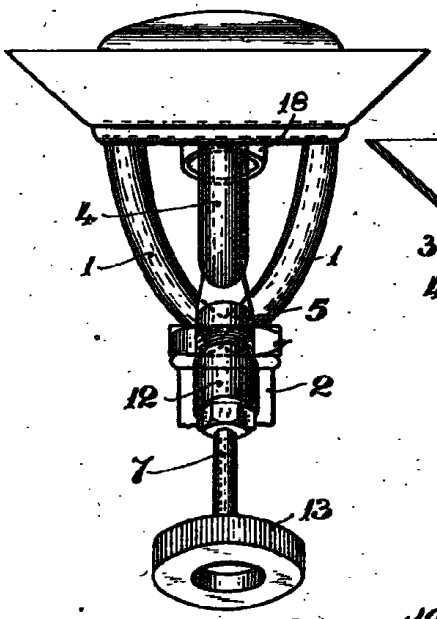


Fig.2.

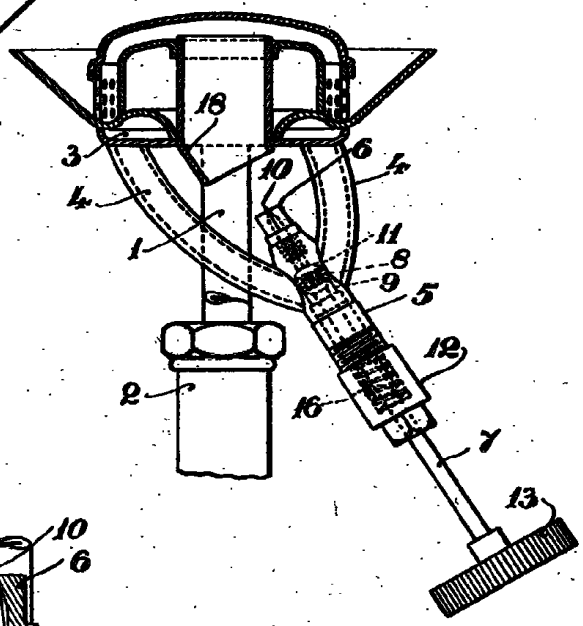


Fig.3.

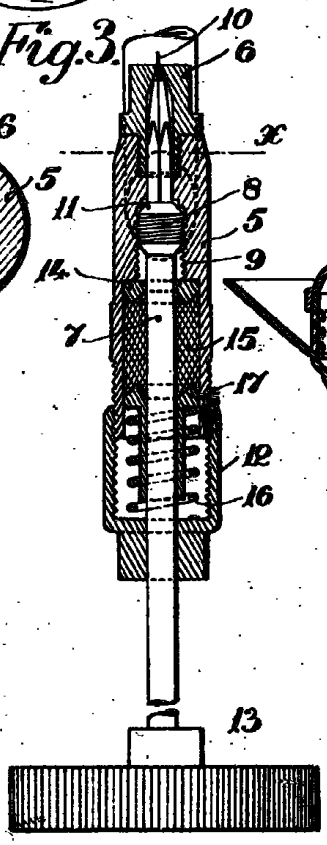


Fig.4.

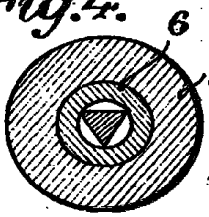
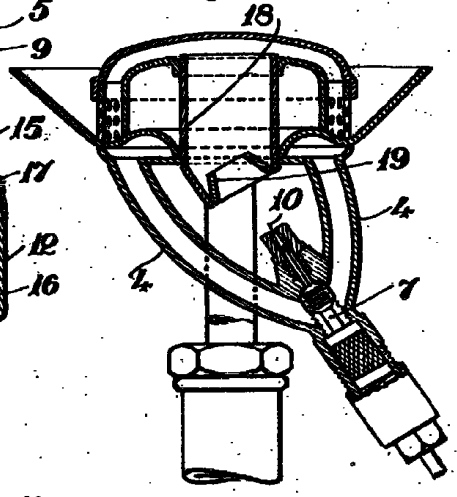


Fig.5.



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