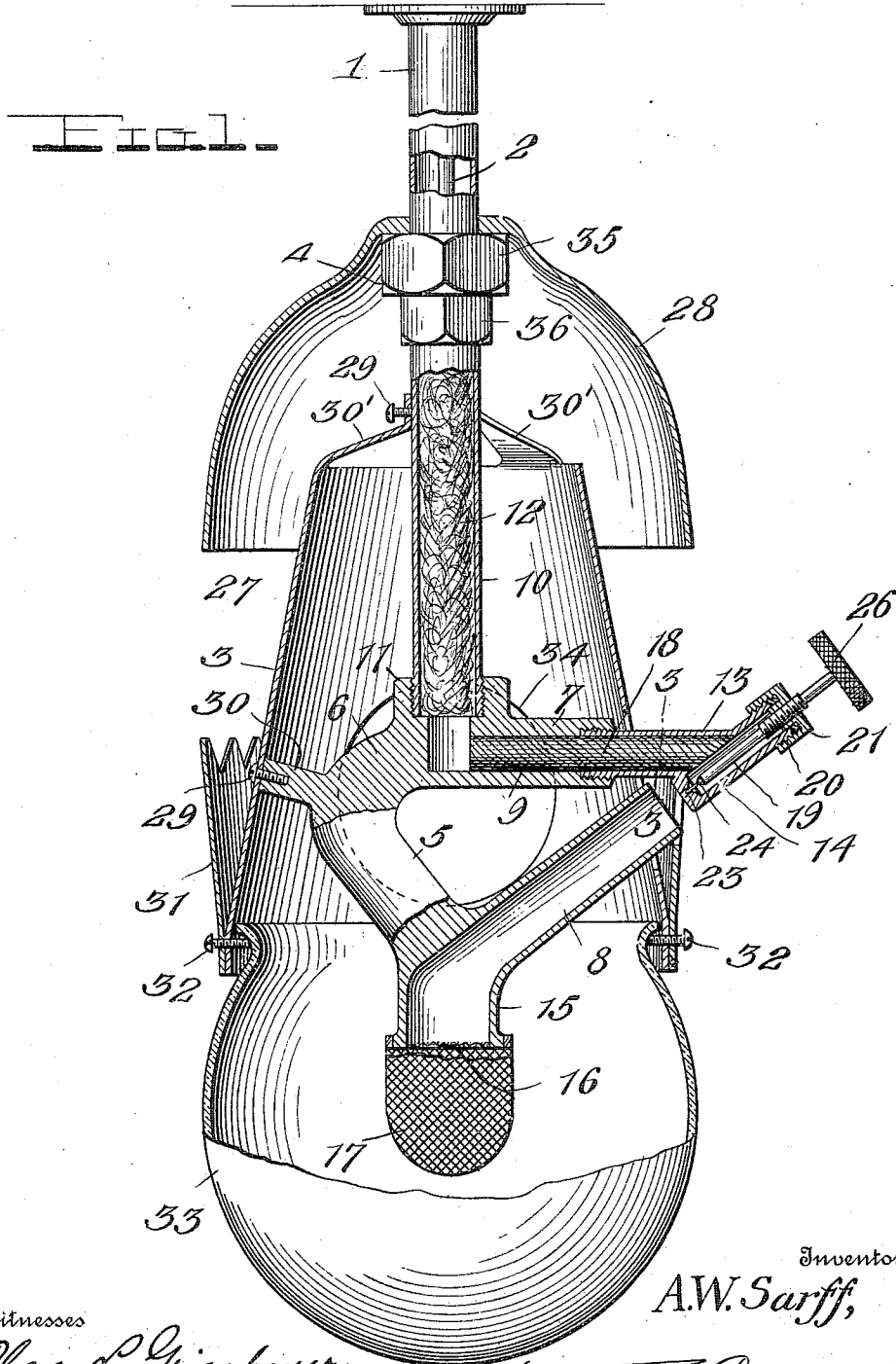


A. W. SARFF.
LAMP.
APPLICATION FILED JAN. 17, 1910.

979,571.

Patented Dec. 27, 1910.

2 SHEETS—SHEET 1.



Witnesses

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A.W. Sarff,

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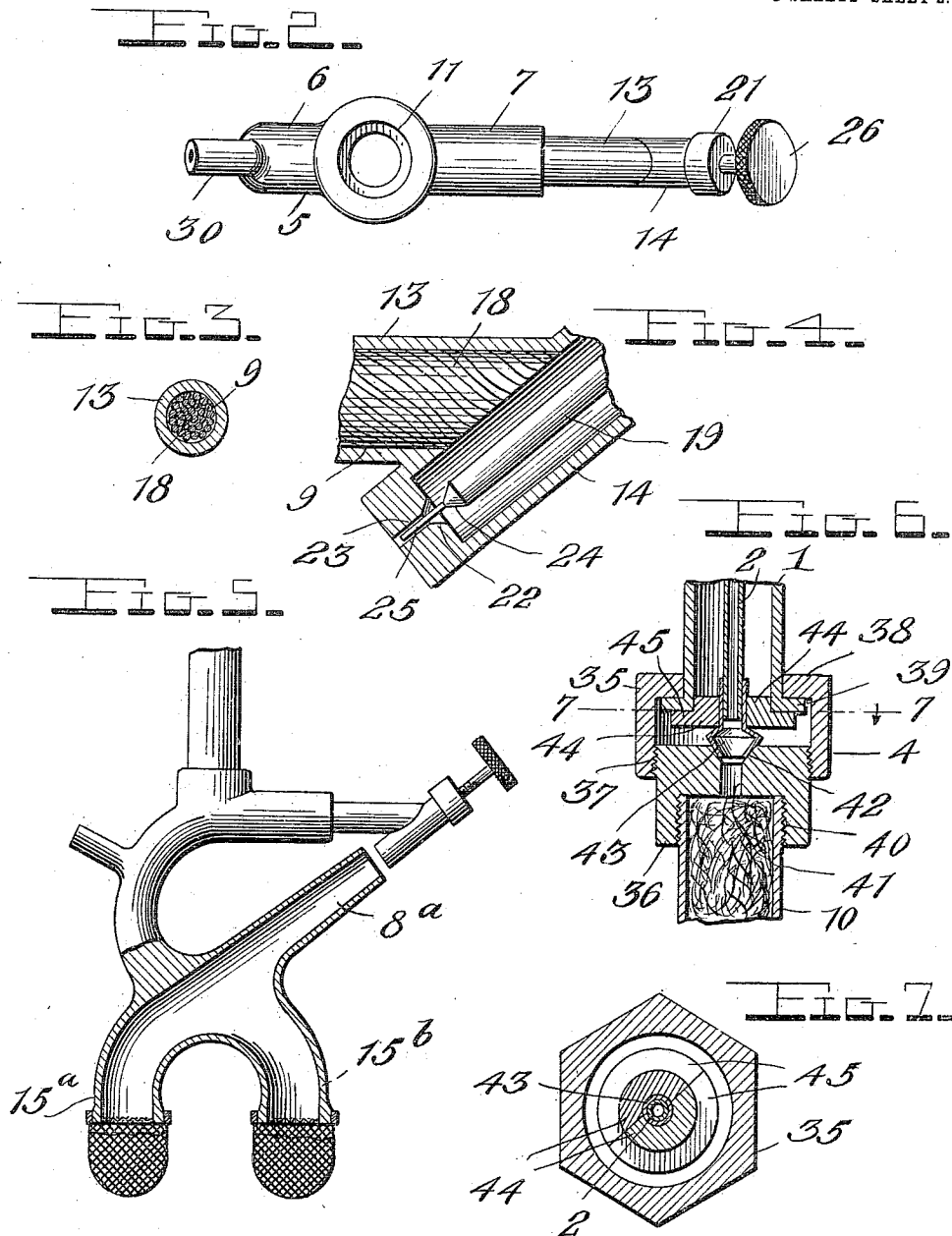
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UNITED STATES PATENT OFFICE.

ARTHUR W. SARFF, OF SUMMIT, SOUTH DAKOTA.

LAMP.

979,571.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ARTHUR W. SARFF, a citizen of the United States, residing at Summit, in the county of Roberts and State of South Dakota, have invented certain new and useful Improvements in Lamps, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in vapor burning lamps.

One object of the invention is to provide an improved burner in which gasolene or similar liquid fuel will be quickly vaporized and effectively mixed with air, and which may be quickly and easily heated by a torch when it is desired to start the lamp.

Further objects of the invention are to provide an improved retort or vaporizing tube and packing for the same, an improved self-cleaning valve, and an improved coupling for connecting the lamp and its fuel feeding pipe to a ceiling pipe or fixture.

With the above and other objects in view, the invention consists of the novel construction, combination and arrangement of parts, hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical sectional view through a lamp embodying my improvements; Fig. 2 is a top view of the burner head; Fig. 3 is a detail section taken on the line 3—3 in Fig. 1; Fig. 4 is an enlarged sectional view through the self-cleaning valve; Fig. 5 is a detail view showing the modified form of burner head; Fig. 6 is an enlarged longitudinal sectional view through the improved coupling; and Fig. 7 is a detail cross section taken on line 7—7 in Fig. 6.

Referring more particularly to the drawings, 1 denotes a stationary fixture or hanger which depends from the ceiling and is in the form of a pipe adapted to contain a tubular wire. My improved lamp 3 is supplied from the pipe 2 and is connected to the liquid fuel supply pipe 2 in the form of a pipe or hanger 1 by an improved coupling 4.

My improved lamp comprises a burner head 5 which is preferably a casting and of triangular shape comprising a solid arm 6, a horizontal tubular portion 7, and an inclined tubular portion 8. The cavity or bore 9 of the upper horizontal arm or branch

7 communicates with the lower end of an upright tube 10 preferably in the form of a piece of pipe screwed into an internally threaded boss 11 formed upon the top of the arm 7. The upper end of the upright tube or pipe 10 is connected by the coupling 4 to the fuel feed pipe or tube 2 and said pipe 10 is preferably loosely packed with asbestos fiber 12 provided for the purpose of retarding the passage of the gasolene or other liquid fuel through said pipe and thereby allowing the fuel to be thoroughly vaporized by the time it reaches the horizontal vaporizing and superheating chamber formed by the bore 9 of the branch 7. The outer end of the bore or chamber 9 is internally screw threaded for the reception of the inlet branch 13 of a needle valve casing 14, the outlet of which latter is disposed opposite the center of the open upper end of the tubular branch 8 of the burner head, which branch serves as a mixing tube and has its lower end united to the solid arm 5 and enlarged to provide a downturned tubular part 15 within which latter is the usual screen 16, and from which depends the usual inverted mantle 17. It will be noted that both the upright pipe or tube 10 and the tubular branch 7 will serve as vaporizing chambers for the liquid fuel, and since the horizontal branch 7 is closer to the flame of the burner it will also serve as a superheater. To facilitate this and also to filter the gas and prevent the passage of heavy oil or foreign substances to the needle valve, the chamber formed by the bore 9 and the branch 13 of the needle valve is packed with a loosely wound cable of fine copper wires, as indicated at 18. This cable packing 18 not only serves as a filter and to retard the passage of gas, but also serves to conduct heat from the hottest portion of the vaporizing tube to the needle valve and its casing.

I preferably employ the improved self-cleaning needle valve which is illustrated more clearly in Fig. 4. This valve consists of a stem 19 having a screw threaded portion 20 and adapted to pass through a packing 21 at the outer end of the casing 14, which latter is tubular in form. The other or inner end of the valve casing 4 has a valve opening consisting of a cone shaped inner part 22 and a cylindrical outer part 23. The valve stem 19 is formed at its

inner end with a cone shaped portion 24 adapted to co-act with the portion 22 of the valve seat to close the valve and regulate the escape of gas therefrom. Projecting outwardly and longitudinally from the valve proper 24 is a cleaning pin 25 of less diameter than the opening 23, through which said pin is adapted to pass. It will be seen upon reference to Fig. 4 that when the valve 24 is moved to a partially closed position the pin or needle 25 will project entirely through the opening 23 to move any obstruction that may clog said opening. The usual finger piece 26 is provided on the outer end of the valve stem.

27 denotes a heat-retaining casing which surrounds the burner head 5 and is adapted to confine the heat rising from the burner so that it thoroughly heats the vaporizing tubes 7, 10. This casing 27 is preferably of frusto conical shape with a small end disposed upwardly so as to deflect the heated air and products of combustion inwardly against the tube or pipe 10, the heat thus deflected being temporarily retained by a heat bell or dome 28 arranged above the open upper end of the casing 27. As illustrated the dome 28 is applied to the pipe or connection 1 and is suspended by means of the coupling 4, although it will be understood that it may be otherwise constructed. The casing 27 may be mounted on the tube or pipe 10 in any suitable manner but its connection is preferably effected by forming it with openings to receive the branch 8 of the burner head, the branch 13 of the valve casing, and a screw 29 which enters a threaded socket in a lug 30 projecting outwardly from the integral arm or branch 6 of the burner head. The upper small end of the casing 27 is preferably formed with a plurality of inwardly extending arms 30' which engage and may be secured to the pipe or tube 10 for the purpose of steadying the casing. The lower portion of the casing 27 has surrounding and attached to it an ornamental crown 31, which latter contains set screws 32 for supporting a globe 33. To permit of the ready application of a torch to the burner head for the purpose of vaporizing the gasolene to start the lamp, a hole or opening 34 is formed in one side of the casing 27, said hole being so positioned that it is practically hidden by the crown 31.

My improved coupling 4 permits my lamp to be applied to the ordinary ceiling extensions or fixtures without altering the construction of the same, and it consists of two coupling sleeves 35, 36, which have a threaded engagement with each other at 37, and the outer surfaces of which are of hexagonal or polygonal shape so that they may be engaged and turned by a wrench. The upper extremity of the upper sleeve 35 has an in-

wardly extending annular flange 38 engaged with an outwardly projecting annular flange 39 on the pipe 1, while the lower end of the lower sleeve 36 is internally screw threaded as at 40 for the reception of the upper end of the pipe 10. Said lower sleeve 36 has in its top a vertical opening 41 formed with a cone shaped upper extremity 42 adapted to receive a soft metal enlargement or head 43 soldered or otherwise secured to the lower extremity of the fuel tube or wire 2. The enlargement or head 43 is clamped between the seat 42 and a two part sectional plug 44 which is arranged within the lower end of the pipe 1 and has a surrounding flange 45 to limit its movement into said pipe, as clearly shown in Figs. 6 and 7. It will be seen that when the sleeve 35 is screwed downwardly on the sleeve 36 the soft metal head 43 will be tightly clamped between said sleeve and the sectional plug 44 so as to provide a fluid-tight connection between the pipes 10 and 2.

In Fig. 5 of the drawings I have illustrated a modified form of burner head which the lower end of the mixer tube 8^a is bifurcated to provide two branches 15^a, 15^b, each of which is adapted to support an inverted mantle. In other respects the construction and operation of this form of the invention is the same as that of the one first described.

From the foregoing description taken in connection with the accompanying drawings, it is thought that the construction, operation and advantages of the invention will be readily understood without a more extended explanation.

While the preferred embodiment of the invention has been shown and described in detail, it will be understood that I do not wish to be limited to the precise construction set forth, since various changes in the form, proportion and arrangement of parts, and in the details of construction, may be resorted to within the spirit and scope of the invention.

Having thus described the invention what is claimed is:

1. In a lamp, the combination of a triangular shaped burner head having a solid arm, an upper horizontal tubular arm united to the upper end of the solid arm and forming a vaporizing tube, and a downwardly inclined tubular arm united to and supported by the lower end of the solid arm and forming a mixer tube, the latter having a downturned lower end to support a mantle, a valve having its inlet connected to the horizontal arm of the burner head, and its outlet disposed opposite the inclined tubular arm of said head, an upright vaporizing tube connected to and communicating with the horizontal tubular arm of the burner head, a ceiling pipe, a liquid fuel pipe with-

in the latter, and a coupling uniting the upper end of the upright vaporizing tube to the ceiling and fuel pipes.

2. In a lamp, the combination of a triangular shaped burner head having a solid arm, an upper horizontal tubular arm united to the upper end of the solid arm and forming a vaporizing tube, and a downwardly inclined tubular arm united to and supported by the lower end of the solid arm and forming a mixer tube, the latter having a downturned lower end to support a mantle, a valve having its inlet connected to the horizontal arm of the burner head, and its outlet disposed opposite the inclined tubular arm of said head, an upright vaporizing tube connected to and communicating with the horizontal tubular arm of the burner head, a globe-supporting casing surrounding the burner head and the upright vaporizing tube, said casing being formed with a torch-receiving opening, a ceiling pipe, a liquid fuel pipe arranged within the latter, a coupling uniting the upper end of the upright

vaporizing tube to the ceiling pipe and fuel pipe, and a heat bell supported above the casing by said coupling.

3. In a lamp, the combination of a ceiling pipe having a flanged lower end, a fuel feeding tube in said pipe and having an enlargement at its lower end, a flanged sectional plug in the lower end of the ceiling pipe and adapted to receive the fuel pipe, an upright vaporizing tube, and upper and lower coupling sleeves having threaded engagement, the upper sleeve having an inwardly projecting flange to engage the flange on the lower end of the ceiling pipe, and the lower sleeve having a vaporizing tube connected to it and being formed with an opening having a cone shaped portion to engage the enlargement on the fuel tube.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

ARTHUR W. SARFF.

Witnesses:

E. A. CHRISTENSEN,
OSCAR OLUFSON.