

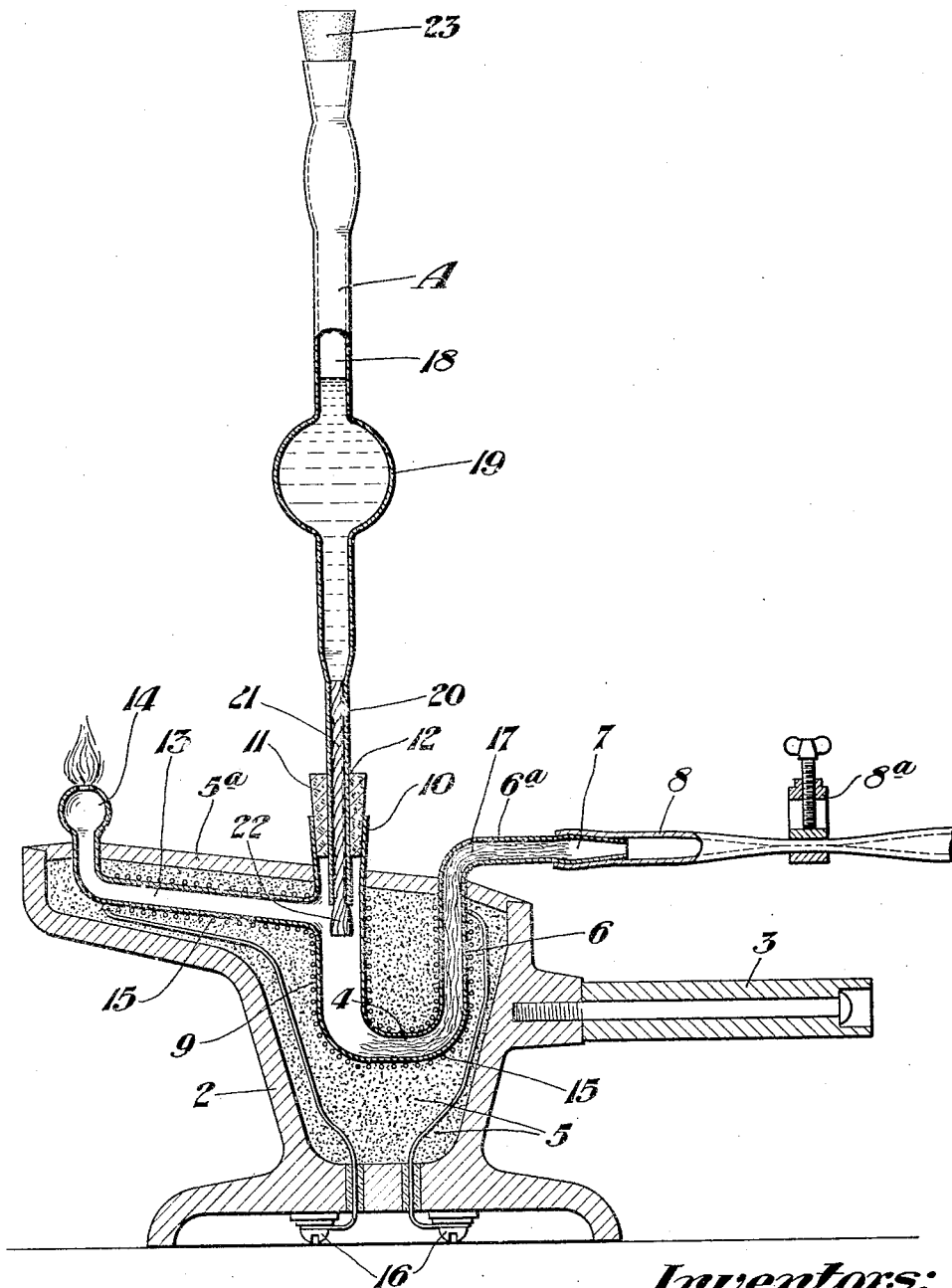
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TEST LAMP

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TEST LAMP

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This invention relates to sulfur test lamps for laboratory use in testing fuel oils such as benzol, benzine, gasoline and the like, to ascertain their sulfur content, and has for its object the provision of an improved form of lamp which will provide a more constant feed of the oil being tested and one that will be easier to operate than the lamps heretofore commonly used.

Heretofore, lamps of this type have had pipettes provided with stop-cock control valves for controlling the flow of the oil to be tested and, since said oil had to be delivered in such minute quantities, it was necessary to provide a stop-cock having a minutely etched tapering groove through which the oil flowed. At times all fuel oils, and particularly benzol, have quantities of entrained water therein and when testing such oils the water will clog the stop-cock groove and cause an irregular fuel feed.

The present invention provides a constant feed valveless pipette and an improved heating and vaporizing tube, whereby the fuel oil may be burned with a constant and regulated flame.

In the drawing:

The figure is a vertical sectional view through a lamp constructed in accordance with this invention.

Referring more particularly to the drawing, the numeral 2 designates a hollow metal base member having a handle 3.

A U-shaped heating and vaporizing tube 4 is mounted within the base 2, a filling of asbestos 5 is packed around the tube 4, and the top of the filled base is closed by a layer of cement 5^a.

The upper end 6^a of one arm 6 of the tube 4 is bent at right angles and is terminated in a swell 7 to receive a short length of rubber tubing or hose 8 which is adapted to be compressed by a clamp 8^a to regulate the flow of air through the tube 4. The other arm 9 of the tube 4 has its upper end flared, as at 10, to receive a tapered stopper 11 having a centrally arranged aperture 12 therein.

A burner tube 13 communicates through and is integrally connected to the side of the arm 9 and extends through the base and has

its free end bent upwardly so as to project above the base. The free end of the tube 13 terminates in a burner bulb 14.

An electrical resistance element 15 is wound around the tubes 4 and 13 and has its ends connected to binding posts 16 to which electric conductors may be connected. The arm 6 of the tube 4 is preferably filled with a quantity of glass wool 17 which serves to break up the incoming air and also to supply heating surface for the air to contact with.

A constant feed pipette A is mounted in the apertured stopper 11 and comprises a tubular body 18 having an enlarged bulb-like reservoir 19 intermediate its ends and having its lower portion reduced to form a wick chamber 20 of equal diameter throughout its length. The wick chamber is adapted to be filled by a wick 21 made of cotton, glass wool or similar material, which is adjusted so as to project down beyond the pipette an appreciable distance, as at 22. The pipette is adapted to be filled to a point slightly above the reservoir 19 with the oil to be tested which will flow through the wick by capillary attraction. The upper end of the pipette A is closed by an air-tight stopper 23.

The pipette is mounted in the aperture 12 of the stopper 11 and is adapted to be adjusted so that the projecting lower end of the wick 21 is opposite the burner tube 13.

In operation, the apparatus is first brought to a predetermined proper temperature, the pipette A is then filled nearly to the top with the fuel oil to be tested and the stopper 23 is inserted. The stopper 11, with the pipette mounted in it, is then placed in the flared end 10 and as the oil is vaporized from the lower end of the wick, the vapors are lighted at the bulb 14. The flame will be adjusted by admitting more or less air which is adjusted by means of the clamp 8^a and, if necessary, the flame may be further adjusted by raising or lowering the pipette through the stopper 11. The wick 21 tends to draw or suck the fuel oil from the pipette by capillary attraction and the heated air carries the oil vapors to the burner bulb. This causes a vacuum above the oil and bubbles of air go up through the wick, thus replacing the oil

continuously and also serving to indicate the feed. The oil is fed from the pipette constantly and, therefore, once the flame is adjusted it will remain constant.

5 While we have shown one specific embodiment of our invention, we do not wish to be limited thereto since various modifications may be made without departing from the scope thereof, as defined in the appended
10 claims.

We claim—

1. A constant feed pipette for use with sulfur test lamps and the like comprising a tubular body having an enlarged bulb-like reservoir intermediate its ends and having its
15 lower portion reduced in diameter to form a wick chamber, an air-tight closure at the upper end of said body, and a wick mounted in said wick chamber.

2. A constant feed pipette for use with sulfur test lamps and the like comprising a tubular body having an enlarged bulb-like reservoir intermediate its ends and having its
20 lower portion reduced in diameter to form a wick chamber of equal diameter throughout its length, an air-tight stopper mounted in the upper end of said pipette body, and a wick mounted in said wick chamber and projecting below said pipette, said wick being
25 of such size as to prevent a flow of fluid through said pipette, said fluid being adapted to pass from said pipette by absorption of said wick and vaporization from the projecting lower end of said wick only.

3. A sulfur test lamp for burning fuel oils such as benzol, benzine, gasoline, etc., and comprising a hollow base member having a U-shaped air heating and vaporizing tube
30 mounted therein with its ends projecting upwardly beyond the top of said base, an insulating and heat-resisting filling in said base and around said tube, one arm of said tube having its upper end bent at substantially
35 right angles and terminating in a swell so as to permit a length of rubber hose to be connected thereto, the other arm of said tube being slightly flared to receive a tapered stopper, a burner tube communicating
40 through and integrally connected to the side of said last named arm of said U-tube intermediate its ends, said burner tube extending an appreciable distance within said base and then projecting upwardly above said base
45 and terminating in a burner bulb, an apertured stopper in said flared end of said U-shaped tube, a constant feed pipette mounted in the aperture of said stopper and projecting downwardly in said U-shaped tube, a bulb-like reservoir intermediate the ends of
50 said pipette to contain the fluid to be tested, an air-tight stopper in the upper end of said pipette and a wick in the lower end of said pipette and projecting slightly below said
55 pipette and into said U-shaped tube, a filling of glass wool in at least a part of said U-

shaped tube and a heating coil mounted around said U-shaped and burner tubes.

4. A sulfur test lamp for burning fuel oils such as benzol, benzine, gasoline, etc., and comprising a hollow base member having a
70 U-shaped air heating and vaporizing tube mounted therein with its ends projecting upwardly beyond the top of said base, an insulating and heat-resisting filling in said base and around said tube, one arm of said
75 tube having its upper end bent at substantially right angles and constituting an air inlet, means for regulating the flow of air through said air inlet, the other arm of said tube being slightly flared to receive a tapered
80 stopper, a burner tube communicating through and integrally connected to the side of said last named arm of said U-tube intermediate its ends, said burner tube extending an appreciable distance within said base and then projecting out of said base and terminating in a burner bulb, an apertured stopper in said flared end of said U-shaped tube,
85 means for providing a constant feed of fuel oil through said stopper and into said U-shaped tube, a filling of glass wool in at least a part of said U-shaped tube to baffle the air flowing therethrough, and a heating coil
90 mounted around said U-shaped and burner tubes to preheat the air flowing through said U-shaped tube and to vaporize and preheat the fuel fed to said tube.

5. A sulfur test lamp for burning fuel oils such as benzol, benzine, gasoline, etc., and comprising a hollow base member having a
100 U-shaped air heating and vaporizing tube mounted therein with its ends projecting upwardly beyond the top of said base, an insulating and heat resisting filling in said base and around said tube, one arm of said tube having its upper end bent at substantially
105 right angles and constituting an air inlet, means for regulating the flow of air through said air inlet, the other arm of said tube being slightly flared to receive a tapered stopper, a burner tube communicating through and integrally connected to the side of said last named arm of said U-tube intermediate its ends, said burner tube extending an appreciable distance within said base and then projecting out of said base and terminating in a burner bulb, an apertured stopper in said
110 flared end of said U-shaped tube, a constant feed pipette mounted in the aperture of said stopper and projecting downwardly in said U-shaped tube, a bulb-like reservoir intermediate the ends of said pipette to contain the fluid to be tested, an air-tight stopper in the upper end of said pipette and a wick in the lower end of said pipette and projecting
115 slightly below said pipette and into said U-shaped tube, a filling of glass wool in at least a part of said U-shaped tube to baffle the air flowing therethrough, and a heating coil mounted around said U-shaped and
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burner tubes to preheat the air flowing through said U-shaped tube and to vaporize and preheat the fuel fed to said tube.

In testimony whereof, we have hereunto
5 signed our names.

STANTON I. CHARLESWORTH.
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