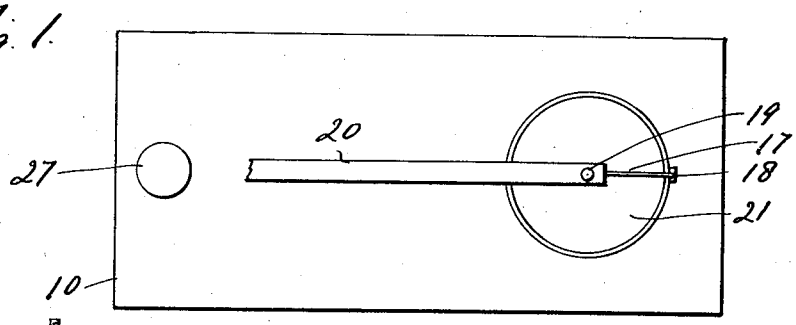
March 27, 1928. 1,664,077

G. KNIERIEMEN

ALCOHOL LAMP

Filed March 15, 1926

Fig. 1.



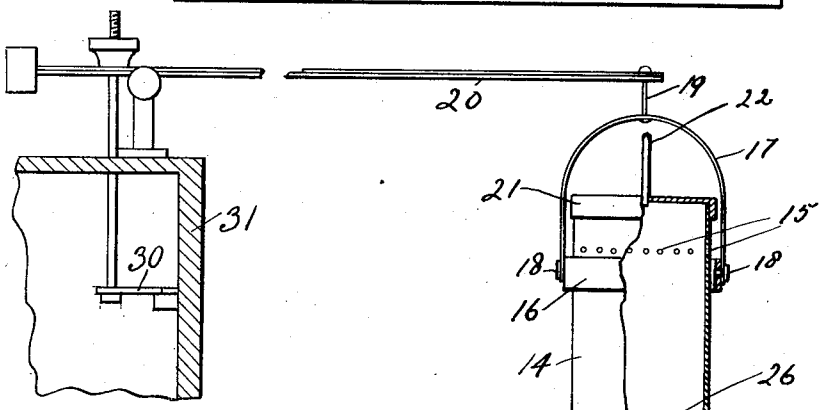


Fig. 2.

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UNITED STATES PATENT OFFICE.

GEORGE KNIERIEMEN, OF ATCO, NEW JERSEY.

ALCOHOL LAMP.

Application filed March 15, 1926. Serial No. 94,691.

My invention relates to new and useful improvements in alcohol lamps and regulators therefor, and has for its object to provide exceedingly simple and effective devices of this description which may be utilized for various purposes, especially for incubators, brooders and the like.

With these ends in view, this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claim.

In order that those skilled in the art to which this invention appertains, may understand how to make and use the same, I will describe its construction in detail, referring by numerals to the accompanying drawings forming a part of this application, in which:

Fig. 1, is a plan view of my improved alcohol lamp.

Fig. 2, is a side elevation of Fig. 1, partially broken away and sectioned to show the interior construction of the lamp and also illustrating a portion of an incubator as an example of an application of the device.

In carrying out my invention as here embodied, 10 represents a tank or alcohol supply reservoir having a collar 11 projecting upwardly therefrom, over which the tubular base 12 of the lamp is adapted to snugly fit to prevent the escape of liquid or fumes at this point. 13 represents a tubular shank formed with the body of the lamp 14, this shank extending into the base and being secured thereto, either by friction or in any other suitable manner. The body 14 is of considerably larger diameter than the shank 13, and has one or more series of holes 15 formed around the upper portion thereof, and around this body is fitted the sleeve 16 adapted to loosely slide up and down upon the body so as to regulate or direct the flow of vapor from the holes 15, as hereinafter explained.

17 represents a bail, the ends of which are pivoted to the sleeve 16 by means of the studs 18, and this bail carries a stem 19, adapted to be attached to a lever 20 connected with the usual thermostat 30 of an incubator 31 or the like.

21 represents a cap adapted to fit snugly over the upper end of the body 14, and this cap has projecting upward therefrom a prong 22; the cap and prong preferably being of copper or other high heat conducting material.

23 represents a pilot cup which is provided with a shank 24 adapted to fit upon the shank 13 of the body and be held in place by friction or otherwise, and this cup as illustrated in the drawing is intended to be positioned just below the lower portion of the body and spaced therefrom sufficiently to permit the insertion within the cup of a suitable absorbent material 25.

26 represents a fibrous wick which extends thru the shank 13 and below the same sufficiently to reach into and preferably to the bottom of the reservoir 10, the upper end of the wick being more or less expanded so as to approximately fill the lower portion of the body 14 in order that alcohol may be drawn by capillary attraction from the reservoir thru the shank 13 and expanded to vaporization at the upper end of the wick.

From the foregoing description the operation of my improved alcohol lamp will be obviously as follows: The reservoir 10 is supplied with a sufficient quantity of alcohol by filling it thru a suitable inlet 27 and the wick will absorb and raise a supply of alcohol within the lower portion of the lamp, where it will be vaporized by the heat generated from the pilot cup 23 which has been previously saturated with alcohol or other easily ignited material and lit.

The vapor thus generated within the body of the lamp will be forced thru the openings 15 and ignited by the flame issuing from the pilot cup so that thereafter these jets of flame will continue to burn after the pilot light has been exhausted.

The jets of flame issuing from the openings 15 will continue to heat the body, its cap and prong 22 and thus continue to generate the vapor for supporting said jets of flame; the prong being extended to absorb the heat of the jets of flame, and thus insure the proper temperature of the body to continue the generation of the proper amount of vapor.

When the device is applied to an incubator or the like, and the stem 19 connected with with the lever 20 of the usual thermostat mounted in such apparatus, the lowering of the temperature within the apparatus below a predetermined point will cause the thermostat to lift the bail through the medium of the lever 20 and with it the sleeve 16, thus deflecting the flame towards the body 14 so as to increase the evaporation of the alcohol and produce a greater amount of heat. As

the heating capacity of the lamp increases the response of the thermostat to this heat increase will cause the sleeve 16 to be lowered and thus permit the flame jets to project away from the body 14 and thereby again lower the temperature.

While I have shown and described the sleeve 16 as being operated by a thermostat, it is to be understood that an equivalent manually operable mechanism may be substituted for said thermostat.

It has been found in practice that a lamp made in accordance with my improvement may be so finely adjusted that the temperature within the incubator or like apparatus will be so controlled as to maintain a temperature almost free from fluctuation, the variance being only a fraction of a degree of Fahrenheit.

One of the advantages of my improved lamp is that it is lighter of construction, easily assembled, and is readily dismembered for cleaning or repairing.

Of course I do not wish to be limited to the exact details of construction as herein shown as these may be varied within the limits of the appended claim without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is:

A lamp of the character described comprising a body; a shank; a base into which said shank is adapted to pass; said base being adapted to fit over a collar carried by a suitable supply tank; a sleeve surrounding the body and movable lengthwise thereof for deflecting the flow of vapor thru a series of holes formed in the body, a bail pivoted to said sleeve, said bail having means for attachment to the lever of a thermostat; a cap adapted to snugly fit over the upper end of the body for closing the same; a prong of high heat conductivity projecting upward from the cap and a pilot cup fitted upon the shank adjustable relative to the bottom of said body.

In testimony whereof, I have hereunto affixed my signature.

GEORGE KNIERIEMEN.