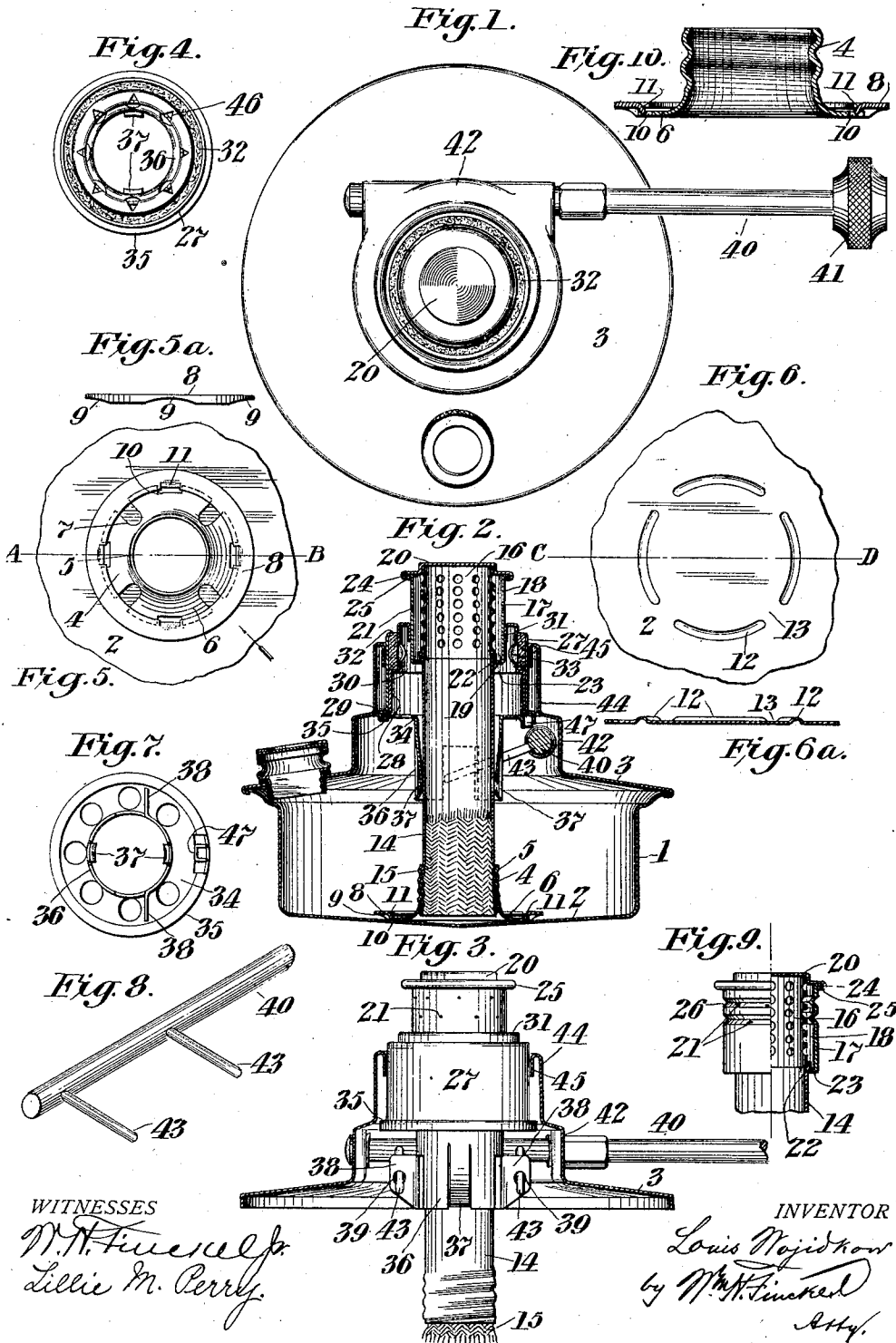


L. WOJIDKOW.
ALCOHOL LAMP.
APPLICATION FILED JUNE 10, 1912.

1,050,587.

Patented Jan. 14, 1913.



WITNESSES

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UNITED STATES PATENT OFFICE.

LOUIS WOJIDKOW, OF BROOKLYN, NEW YORK, ASSIGNOR TO NEW YORK STAMPING COMPANY, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

ALCOHOL-LAMP.

1,050,587.

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To all whom it may concern:

Be it known that I, LOUIS WOJIDKOW, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Alcohol-Lamps, of which the following is a full, clear, and exact description.

The object of this invention is to provide a lamp or heater for use especially in chafing dishes, for coffee percolators, and the like, in which an initial flame is used to start the heating flame, and having means to control or regulate the flame while in use, the construction being such as to avoid the overheating of the alcohol or burning fluid container, so that the lamp may be handled without danger or discomfort to the user.

The invention comprises a stationary wick-tube mounted in a burner tube and separated from it by a vapor chamber, and surrounded in part by a movable initial burner which may be used as a shutter to control or regulate the flame after it is started and to extinguish it, all as I will proceed now more particularly to explain and finally claim.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a top plan view. Fig. 2 is a vertical section with the wick broken out, the plane of section being in line A B, Fig. 5. Fig. 3 is an elevation of the burner members and a cross-section of the breast of the font, looking at right angles to Fig. 2. Fig. 4 is a top plan view of the initial burner and shutter detached. Fig. 5 is a top plan view of the wick-tube socket and its holding ring. Fig. 5^a shows an edge view of a socket holding ring, drawn as one looks in the direction of the arrow Fig. 5. Fig. 6 shows in bottom plan view and Fig. 6^a shows in cross-section the embossing in the bottom of the font to insure the centering of the wick-tube socket, the section being taken on line C D. Fig. 7 is a bottom plan view of the initial burner. Fig. 8 is a perspective view of part of the initial burner actuator. Fig. 9 is a half section and elevation of a modified form of the burner. Fig. 10 is a cross-section of the socket and ring detached and same as in Fig. 2 but on a larger scale.

The receptacle or font 1 for the burning fluid, may be of metal suitably shaped, and having the bottom 2 and breast 3. The bottom is provided with a wick-tube receiving socket 4, having the screwthreaded portion 5 and the domed base flange 6 which is notched at 7 to admit the burning fluid to the wick. This socket is movably secured to the bottom 2 by a ring 8 which is soldered or otherwise fixed to the bottom of the font. This ring is notched at intervals 9, to admit the burning fluid to the socket, and overlying the flange 6 sufficiently to hold the socket to the font's bottom. The flange 6 is connected with the ring 8 in any suitable loose way that will prevent the socket from turning around, and for this purpose the flange 6 may have edge notches 10 engaged by tongues 11 on the inner edge of the ring. Thus the socket while permanently and securely fixed to the font's bottom has enough freedom of movement to enable the wick-tube to center itself in the font.

Beneath the ring 8 are the segmental beads 12, rising inwardly from the bottom of the font and serving as guides for the central location of the socket. These beads are separated by the flat surfaces 13, and the ring 8 is fixed to the bottom over these beads, with its notches 9 registering with the flat surfaces 13, so that the burning fluid may flow to the wick-tube.

The wick-tube 14 has its lower end screw-threaded to engage the screwthreaded socket and so be held upright in the font. The tube is open at its lower end and is provided with a suitable wick 15. The burner end of the wick-tube is of peculiar construction, and comprises a foraminous tip 16 immediately surrounding the wick, so as to permit the vapor to escape; an outer burner-tube 17 of larger diameter than the tip 16, so as to leave a vapor chamber 18 between them, and connected at its inner end 19 with the wick-tube in a substantially closed manner, and an outer cap 20 which closes the wick-tube and the burner-tube. The burner-tube is provided with any number of series of lateral openings 21 through which the vapor escapes and at which it is ignited. If two or more series of openings 21 are employed, they will be arranged in staggered relation to insure a better flame. In order to avoid soldering and as a manufacturing economy,

the burner end parts are constructed preferably as follows: The upper end of the wick-tube is made with an offset flange 22, in which is seated the foraminous tip 16, whose outer end rises above the burner-tube 17, and the inner end of the burner-tube has a reëntrant flange 23 which abuts against the offset flange 22 of the wick-tube and closes that end of the vapor chamber 18. The upper end of the burner tube has an outwardly projecting flange 24, and the cap 20 resting upon the outer end of the foraminous tip 16 has its edge closed down at 25 over the flange 24, and in so doing the burner-tube has its lower end brought up tight against the offset flange of the wick-tube, and thus the wick-tube, the foraminous tip, the burner-tube, and the cap are firmly united, in a substantially gas-tight manner, without the use of solder or other fusible medium.

As is well known, the ignited vapor tends to rise, and it would be an advantage in securing the desired blue heating flame to have the vapor escape in an upright direction, instead of laterally, and for this purpose the burner tube, as shown in Fig. 9, may be provided with circumferential inwardly extending ledges 26, in the upwardly inclined surfaces of which the vapor openings or jet orifices 21 may be made, so that the escaping vapor will issue upwardly.

The initial burner comprises an open-ended outer shell 27, an inner shell 28 having an outwardly extending bottom flange 29, and an inset top flange 30 which terminates in a reëntrant flange 31, which has an internal diameter of substantially the external diameter of the burner-tube, and is adapted to fit the burner-tube in a close sliding relation. Between the outer shell 27 and the inset flange 30 of the inner shell, is a space in which asbestos or other preferably incombustible wicking 32 may be placed; and in order to admit the burning fluid to this wicking 32, holes 33 may be made in the inner shell. The bottom of the initial burner is provided with a perforated flange 34, which is secured by closing in the flange 35 of the outer shell over it; and this flange 34 is provided with a depending tube 36 of rather larger diameter than the wick-tube and having spring fingers 37 which yieldingly impinge upon the wick-tube and thereby utilize the tube as a guide for the longitudinal up and down movements of the initial burner. This tube 36 has two laterally extending wings 38 provided with perforations 39.

40 is a shaft with any suitable operating knob 41, and this shaft is mounted in a stepped extension 42 of the breast 3 of the font in any suitable way, and this shaft is provided with fingers 43 which enter the holes 39 in the wings 38, so that by rocking

the shaft the initial burner may be raised and lowered within the font. The breast of the font is provided with a second stepped extension 44, the upper end of which has a reëntrant flange 45 whose internal diameter is such as to cause it to make a snug fit with the outer shell of the initial burner so as to guide the initial burner in its longitudinal movements, but the fit is loose enough to make any play that may be necessary in the movement of the initial burner.

The stepped extension 42 affords a closed housing for the shaft and its fingers, and the stepped extension 44 affords a closed housing for the initial burner.

The reëntrant flange 31 may be solid as indicated in Fig. 2, or it may have openings 46 as shown in Fig. 4, for purposes of ventilation, and to supply burning fluid or vapor, as the case may be, to the burners when the lamp is inverted or shaken up.

If the lamp be shaken or inverted, so as to supply the burning fluid to the initial burner, the reëntrant flanges 31 and 45 will prevent the undue escape of such fluid.

The outward movement of the initial burner may be arrested by the provision of a lug 47 on the flange 34 which will come in contact with the shaft 40 for this purpose when the initial burner is at its lowest desired limit.

To start the lamp, the initial burner may occupy the position shown in Fig. 2, and the burning fluid having been supplied to it and a light applied, sufficient heat is obtained to vaporize the burning fluid drawn up by the wick, whence such vapor enters the vapor chamber 18 and the vapor escaping through the jet orifices 21 is ignited from the initial burner and thus the flame at the burner proper is established, and the flame at the initial burner dies out by exhaustion of the supply of burning fluid in the initial burner. Thereafter the initial burner may be moved upwardly by rocking the shaft 40 so as to close one or more of the rows of burner openings to regulate the flame, and further moved up against the cap 20 so as to entirely extinguish the flame, and when this is done, the additional effect is obtained of closing the lamp against the escape of the burning fluid from the font.

The various spaces between parts, and especially between the burner parts and the stepped extensions of the breast, afford air spaces which substantially retard the transmission of heat from the burner to the font and thus the font is kept in condition to be handled by the user without discomfort or danger from contact with an overheated surface.

It will be seen that the wick-tube may be inserted and removed at any time after the other parts of the lamp are assembled, and as already stated, the fact that the socket 4

for the reception of the wick-tube is movably located in the font, admits of a slight movement of the wick-tube sufficient to compensate for any tendency there might otherwise be for the parts to bind in the movement of the initial burner.

For the purpose of distinguishing the two burners, I have herein referred to that burner which comprises the wick-tube and burner-tube and their parts, as the stationary main burner, and to the movable burner as the initial burner.

While I have herein referred to the lamp as an alcohol lamp, it is obvious that I do not limit the invention to the use of alcohol as the burning fluid, since other vaporizable fluids may be employed.

What I claim is:—

1. An alcohol lamp, having a receptacle for the burning fluid, a wick-tube fixed in said receptacle, a burner tube surrounding the wick-tube and secured thereto and providing a vapor chamber between the two, an initial burner surrounding the burner-tube and spaced therefrom and communicating with the receptacle, and means to raise and lower said initial burner.

2. In an alcohol lamp, a receptacle for the burning fluid, a main burner, an initial burner surrounding the main burner, the main burner being stationary, means to move the initial burner longitudinally of the main burner, and a reëntrant flange at the top of the initial burner and in movable contact with the main burner.

3. In an alcohol lamp, a receptacle for the burning fluid, a main burner, an initial burner surrounding the main burner, the main burner being stationary, means to move the initial burner longitudinally of the main burner, and a reëntrant perforated flange at the top of the initial burner and in movable contact with the main burner.

4. In an alcohol lamp, a main burner, comprising a wick-tube, a foraminous tip supported on the wick-tube, a burner-tube surrounding the foraminous tip and engaging with the wick-tube at one end and of a diameter sufficiently greater than the foraminous tip to provide a vapor chamber between the two and having jet orifices, and a cap closed down over the foraminous tip and burner-tube.

5. In an alcohol lamp, a wick-tube having an offset flange at its upper end, a foraminous tip seated in said flange, a burner-tube having jet openings, and provided with a reëntrant flange at its inner end in engagement with the offset flange of the wick-tube, said burner-tube of sufficiently greater diameter than the foraminous tip to leave a vapor space between the two, and a cap engaging the foraminous tip and closed down over the burner-tube and thereby drawing the reëntrant flange of the burner-tube into

intimate contact with the offset flange of the wick-tube and thereby uniting the wick-tube, foraminous tip and burner-tube.

6. In an alcohol lamp, a burner having a wick-tube, a foraminous tip, and a surrounding burner-tube, said burner-tube having circumferential ledges provided with upwardly opening jet orifices.

7. In an alcohol lamp, a burner having a wick-tube, a foraminous tip, and a surrounding burner-tube, said burner-tube having inwardly extended upwardly inclined ledges provided with jet orifices arranged to discharge the vapor in an upward direction.

8. In an alcohol lamp, a wick-tube having a screw threaded bottom end, combined with a receptacle for the burning fluid, and a wick-tube socket screwthreaded to receive the wick-tube and loosely mounted in the bottom of the receptacle.

9. In an alcohol lamp, a wick-tube having a screwthreaded bottom end, combined with a receptacle for the burning fluid, and a wick-tube socket screwthreaded to receive the wick-tube and loosely mounted in the bottom of the receptacle, and means to restrain said socket from turning in said receptacle.

10. In an alcohol lamp, a wick-tube, combined with a receptacle for the burning fluid, a wick-tube socket having a base flange provided with edge notches, a ring fixed to the bottom of the receptacle and overlapping the socket's flange so as to permit sufficient freedom of movement of the socket to insure the centering of the wick-tube in the receptacle and having tongues to engage the notches in the socket's flange to limit such movement, and interlocking means on the wick-tube and socket to hold these two parts in engagement with one another.

11. In an alcohol lamp, a wick-tube, combined with a receptacle for the burning fluid, a wick-tube socket having a base flange provided with edge notches, a ring fixed to the bottom of the receptacle and overlapping the socket's flange so as to permit sufficient freedom of movement of the socket to insure the centering of the wick-tube in the receptacle and having tongues to engage the notches in the socket's flange to limit such movement, said ring adapted to admit the burning fluid to the socket and its attached wick-tube, and interlocking means on the wick-tube and socket to hold these two parts in engagement with one another.

12. In an alcohol lamp, a wick-tube having a screwthreaded bottom end, combined with a receptacle for the burning fluid, a wick-tube socket screwthreaded to receive the wick-tube and having a flange, and a ring fixed to the bottom of the receptacle and overlapping the socket flange whereby the socket is loosely mounted in the receptacle, there being notches in the flange and

ring to afford passageways for the burning fluid to the wick-tube.

13. In an alcohol lamp, a wick-tube having a screwthreaded bottom end, combined with a receptacle for the burning fluid, and a wick-tube socket screwthreaded to receive the wick-tube and having a series of fluid admitting notches and also peripheral notches, and a ring fixedly applied to the bottom of the receptacle and overlapping the flange of the socket and having notches coinciding with the fluid admitting notches in the flange, and tongues to engage the flange's peripheral notches.

14. In an alcohol lamp, a wick-tube having a screwthreaded bottom end, an appropriate receptacle for the burning fluid, and a wick-tube socket screwthreaded to receive the wick-tube and loosely mounted in the bottom of the receptacle, combined with an attaching ring fixed to the bottom of the receptacle, and ring-locating beads in the bottom of the receptacle.

15. An alcohol lamp, having a receptacle for the burning fluid, a stationary main burner including a wick-tube, a longitudinally movable initial burner surrounding the stationary main burner, said initial burner having a depending tube provided with fingers in contact with the wick-tube of the stationary main burner to guide the initial burner in its longitudinal movement, and means to move said initial burner.

16. An alcohol lamp, having a receptacle for the burning fluid, a stationary main burner including a wick-tube, a longitudinally movable initial burner surrounding the stationary main burner, said initial burner having a depending tube provided with fingers in contact with the wick-tube of the stationary main burner to guide the initial burner in its longitudinal movement, said depending tube having laterally projecting perforated wings, and a rock shaft mounted in the receptacle and having fingers engaging the perforated wings.

17. An alcohol lamp, having a receptacle for the burning fluid, a stationary main burner including a wick-tube, a longitudinally movable initial burner surrounding the stationary main burner, said initial

burner having a depending tube provided with fingers in contact with the wick-tube of the stationary main burner to guide the initial burner in its longitudinal movement, said depending tube having laterally projecting perforated wings, and a rock shaft mounted in the receptacle and having fingers engaging the perforated wings, the initial burner having a stop adapted to come into contact with the rock shaft to limit the downward movement of the initial burner.

18. In an alcohol lamp, a receptacle for the burning fluid having a breast, a stationary main burner, and a longitudinally movable initial burner, the breast having stepped extensions, and an initial burner actuator mounted in one of said stepped extensions, and the initial burner mounted in another of said stepped extensions.

19. In an alcohol lamp, a receptacle for the burning fluid having a breast, a stationary main burner, and a longitudinally movable initial burner, the breast having stepped extensions, and an initial burner actuator mounted in one of said stepped extensions, and the initial burner mounted in another of said stepped extensions, the last mentioned stepped extension having a reentrant top flange in engagement with the initial burner.

20. In an alcohol lamp, a receptacle for the burning fluid, a stationary main burner including a wick-tube, and a longitudinally movable initial burner, and means to move it, said initial burner comprising an outer shell, an inner shell spaced from the outer shell to afford a cavity for the reception of a wick, and said inner shell having its upper end provided with a reentrant flange in sliding engagement with the stationary main burner, and a flange connected with said shells and having a tubular extension provided with spring fingers in contact with the wick-tube of the stationary main burner.

In testimony whereof I have hereunto set my hand this 8th day of June, A. D. 1912.

LOUIS WOJIDKOW.

Witnesses:

FRED C. WOJIDKOW,
R. W. SHELTER.