C. WILHELM.

Lard Lamp.

No. 3,032. Patented April 6, 1843.

Fig. 1,

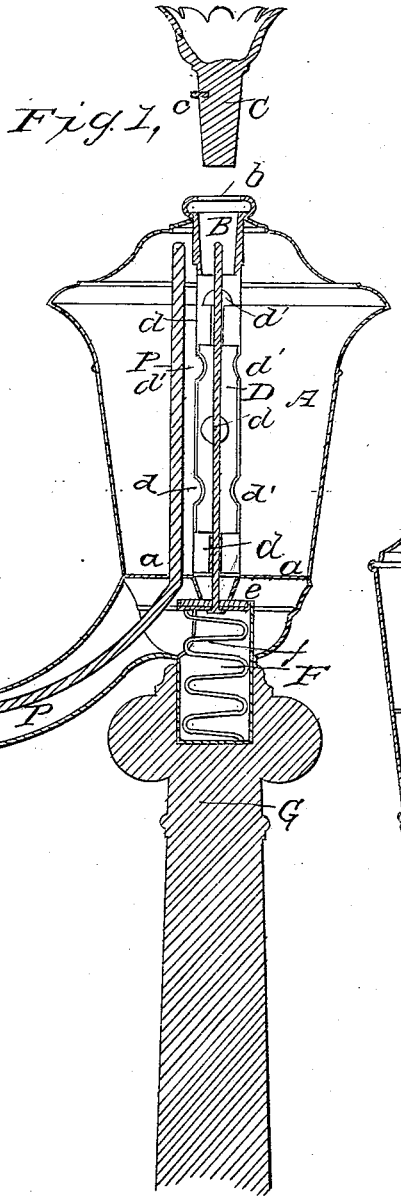


Fig. 2,

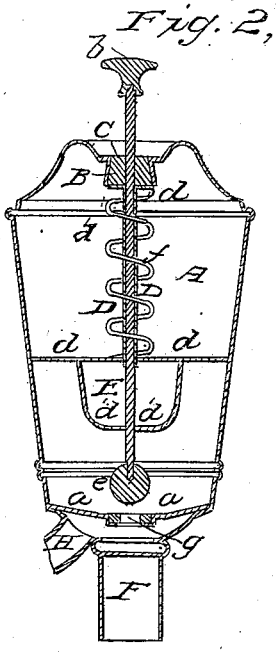
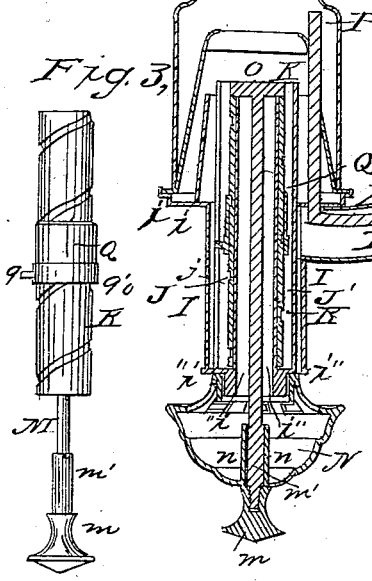


Fig. 3,



# UNITED STATES PATENT OFFICE.

CHARLES WILHELM, OF PHILADELPHIA, PENNSYLVANIA.

## LARD-LAMP.

Specification of Letters Patent No. 3,032, dated April 6, 1843.

*To all whom it may concern:*

Be it known that I, CHARLES WILHELM, of the city of Philadelphia and State of Pennsylvania, have invented a new and improved lamp for burning lard or oil, which lamp can be used either in parlors, stores, public buildings, streets, or in any other locality; and I do hereby declare that the following is a full and exact description.

The nature of my invention consists, firstly, in the peculiar manner of filling the fountain, and supplying the wick with lard or oil; secondly, in the manner of heating or melting the lard so as to reduce it to a liquid, and cause it to flow freely to the flame; and thirdly, in the arrangement for raising or lowering the wick.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of the lamp entire; Fig. 2 another vertical section of the fountain; and Fig. 3 a view of the wick-cylinder and rod with the wick holder.

*Construction.*—The fountain or reservoir A, in its general outline, is constructed in the usual manner and not confined to any particular shape. On the top and in its center a tube B, of about 1 inch in length, is inserted and fastened, the inner surface of which is conical, the lower end being the narrowest. On its upper end the tube is furnished with a concave rim *b*, which serves to receive the small pin *c* on the plug C, which plug is made to fit accurately in the tube B, and to make the fountain air-tight. From the lower end of the tube B, and fastened to it, extends another tube D of a cylindrical form, as far down as to the upper bottom of the fountain *a*. Below this bottom the remainder of the tube contracts conically. Near the upper end of the tube, and at the lower end immediately above the bottom *a*, are the guides *d* for the rod E hereafter described. These guides are each made of a strip or two of tin in such a manner as to form in the center a short tube for the rod E to pass through; they are placed across and are fastened to the tube D, which has besides a number of holes or perforations *d'* at convenient distances from each other, which admit the lard or oil to the fountain. In the center of the tube D, and moving in the guides *d*, is the rod E, which has on its lower extremity a valve *e*, which is formed by a circular tin box with a low rim and in which is fastened a piece of thick leather. This valve is kept close to the underside of the tube D by means of a spiral spring *f*, which is placed in the chamber formed in the hollow tenon F, which connects the fountain to the lamp-stand G. The spring rests on the bottom of the said chamber, the upper end pressing against the underside of the valve *e*. All the aforenamed parts are connected with the mode of filling the fountain, and their relative duties will be described hereafter under the head of "operation."

H is the neck of the lamp, through which the lard or oil is conducted from the fountain to the burner. The burner consists of the following principal parts, to wit: the exterior cylinder I, another cylinder J, the wick-cylinder K, the interior cylinder L, the rod M, the waste vessel N, the hyperbolical cap O, and the solid heat-conductor P. The cylinder I has a wide flange *i*, which is perforated all around to admit a draft of air to the space under the cap O and around the upper and conical part of the cylinder I. Around the flange *i* is another but narrower flange *i'*, which supports the cap O and also the chimney. The lower end of the cylinder is partly closed by a rim *i''*, which has a stout projection *i'''* downward to which the lower extremity of the inner cylinder L is soldered. Inside of the cylinder I, and within about $\frac{1}{16}$ of an inch of it, is the cylinder J, which stands on and is fast to the above named lower rim *i''*. This cylinder has in front an incision *j*, nearly its whole length, for the pin *q* of the wickholder Q to travel in. The wickcylinder K fits snugly over the cylinder L. It is furnished with the usual spiral groove in which the pin *q'* (see Fig. 3,) of the wick-holder travels. On its upper extremity and across its interior is fastened a strip of tin *k*, to the center of which and on its underside is fastened the rod M, which extends down through the oil-cup N, on the underside of which a knob *m* is screwed to the rod. Where the rod passes the oil-cup N a box *n* is fastened to the bottom, which receives the enlargement or shoulder *m'*, which shoulder and the box *n*, which it is made to fit, are in their horizontal section of an oblong, oval, or any other but perfect round shape. The

cap O is, as its name indicates, of a hyperbolical form, but open on the top and has a slit on the side for the heat conductor to pass. Its use is described further on. The heat-conductor P is placed on the side of the burner nearest the fountain. It is fastened vertically in the flange *i*, extending upward partly through the conical part of the cylinder I, and through the cap O, and about ¼ of an inch above it, coming nearly in contact with the flame. Below the flange *i* it is continued first horizontally, then gradually rising, thus traversing the neck H; and arriving near the fountain-bottom *a* it takes again a vertical direction, and continues up to near the top of the fountain.

In Fig. 2 on the drawing a modification of the arrangement of the different parts of the fountain is shown. A is the fountain; B a conical tube, the upper extremity of it being the narrowest. In this tube a valve C, corresponding in shape, is fitted. This valve is fastened to a rod E, which passes through the center of it, extending upward about one inch with a knob or head *b* screwed to it. On its lower end the rod is furnished with a globular valve *e*, which, during the process of filling the fountain, closes the valve opening *g* in the center of the upper bottom *a* of the fountain. The rod E is surrounded by a close-fitting cylinder D, which is furnished at its upper end with a flange *d* of about the same diameter as the lower surface of the valve C. This cylinder D moves simultaneously with the rod E. A guide *d*, about midway of the fountain, assisted by an auxiliary guide *d'* somewhat lower down, keeps the rod and cylinder in their proper vertical and central position. Resting on the guide *d*, and winding around the cylinder D, is a spiral spring *f*, which presses against the underside of the flange *d*, thus keeping the valve C closed, when the fountain is filled.

*Operation.*—After the wick has been fastened in the usual manner to the wickholder Q, the wickholder is held on to the cylinder K; the oilcup N being turned at the same time will cause the upper end of the spiral groove to catch the pin *q'* on the inside of the wickholder, and thus draw it down, the pin *q* of the wickholder moving in the incision *j* of the cylinder J. The cylinder K, resting by means of the cross-strip *k* on the top of the cylinder L, revolves, and the wickholder moves perpendicularly up or down as the case may be, whereas in ordinary lamps the spiral tube is stationary, and the wickholder revolves on it spirally. In Fig. 1 the plug C is removed from the conical tube B, leaving the fountain open and ready for the process of filling. The spiral spring is now holding the valve *e* up and against the underside of the tube D, thus effectually closing it and preventing the lard or oil from entering the lower part of the reservoir, the neck and the burner, and from overflowing the latter. After the lard or oil has been admitted to the fountain by means of the tube D and through its perforations, the plug C is inserted in the conical tube B, pressing down the rod E and consequently the valve *e;* then the plug is turned, and the pin *c* catching under the concave rim *b* keeps it in its place, thus the top is closed airtight, and the lard or oil is allowed to flow freely out on the lower valve opening toward the burner to feed the wick. Another means to effect the same object is shown in Fig. 2. The process of filling the fountain, requires only a slight pressure on the knob *b*, which moves the valve *c* downward and thus affording room for the lard or oil to enter the fountain; at the same time the valve *c* closes, preventing the fluid to escape. When filled, the spiral spring *f* pressing against the underside of the flange *d* will cause the valve C to close, and consequently the valve *e* to open, letting the lard flow toward the burner. The lamp being lighted, the heat from the flame is confined within the hyperbolical cap O, thus communicating it to the heat conductor P, which conducts it through the neck and then through the fountain, keeping the lard in a fluid state. The heat-conductor does not come in contact with the flame. The cap O is made to lift off so as to allow the wick to be trimmed.

What I claim as my invention, and desire to secure by Letters Patent, is—

The arrangement by which the fountain or reservoir is filled and the supply continued; next, the arrangement of the heat conductor, passing through the hyperbolical cap, the neck and the whole height of the fountain as above described, and consequently the heat passing through the whole body of lard, transforming it into a fluid, when solid, or keeping it in a fluid, when such; and finally I claim the mode in which the wick is raised or depressed; all of which is constructed and operates substantially in the manner herein above set forth.

CHARLES WILHELM.

Witnesses:

RICHARD KEY WATTS,

FRANCIS BENNE.