R. H. CHASE.

Lamp.

No. 211,223. Patented Jan. 7, 1879.

Fig. 1.

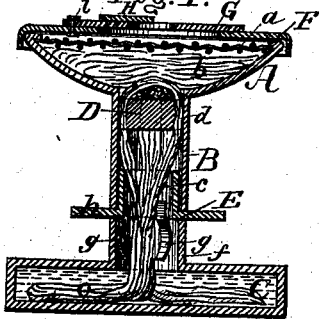


Fig. 2.

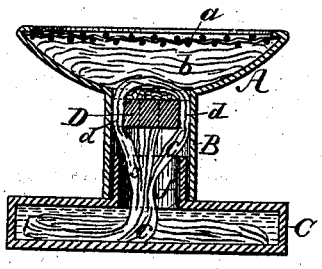


Fig. 3.

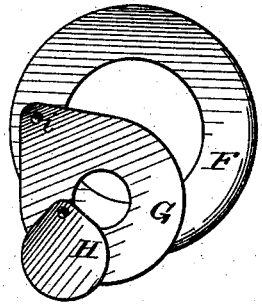
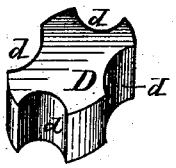


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

ROBERT H. CHASE, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. **211,223**, dated January 7, 1879; application filed December 13, 1878.

To all whom it may concern:

Be it known that I, ROBERT H. CHASE, of Washington, District of Columbia, have invented certain new and useful Improvements in Lamps used for heating purposes, of which the following is a specification:

My invention relates to "lamp-heaters," so called—that is to say, a lamp whose flame is used for heating purposes. A well-known type of this lamp is the one in common use composed of a metallic shell provided with a fine wire top, and filled with some fibrous or porous material. To use the lamp, alcohol is poured on the wire top until a sufficient quantity of it has been absorbed by the porous material within, and a light is then applied to the gauze.

It is to a lamp of this general character that my invention relates. I have had it in view to remove objections to such lamps, and to produce a device which shall be as cheap, or even cheaper, than ordinary lamp-heaters, and more convenient and efficient than they.

I make a burner which is distinct from the lamp-reservoir, and which can, at pleasure, be applied to or removed from the reservoir or vessel that holds the alcohol or other liquid. The burner consists of a cup-shaped or dished and flaring upper part or cap, provided with a wire-gauze top, and a lower part, forming a neck or tube, to fit the opening or collar in the lamp-reservoir. The cup-shaped upper part is to contain a fibrous or porous material, such as cotton, asbestus, sponge, or other known material used for the purpose; and the neck or tube is to contain wicking, which is brought into contact with the porous filling above, and conveys to it, from the lamp-reservoir, the inflammable fluid.

My invention can, however, best be explained and understood by reference to the accompanying drawing, in which—

Figure 1 is a vertical central section of a burner made and combined with a fluid-reservoir in accordance with my invention. Fig. 2 is a like section of a similar burner applied directly to the lamp-reservoir without the intermediary of the thimble shown in Fig. 1. Fig. 3 is a plan of a cover by means of which I am enabled at will to vary the size of the flame. Fig. 4 is a perspective view of a plug which I use to hold the wicking in place in the neck or tube of the burner.

A is the cup or dish-shaped upper part or cap of the burner, having a wire-gauze top, *a*, and a filling or packing, *b*, of some suitable porous or fibrous material. At its lower end the cap A is continued into, or is attached to and communicates with, a neck or short tube, B, which receives the wicking *c*, and serves as the means by which the burner is secured to the reservoir C. I prefer to hold the wicking in place by means of a plug, D, which fits the interior of the tube B, and has vertical grooves *d* in its sides to receive the strands of wicking, which pass up through one groove, over the top of the plug, and thence down through the opposite groove.

The wicking is first put on the plug, and then the plug is fitted into and pushed up into the tube B until the wicking comes in contact with the packing *b*. The quantity of liquid transmitted from the wicking to the packing may be regulated by increasing or lessening the quantity of wicking used, or by so adjusting the plug as to bring the wicking more or less in contact with the packing.

The tube or neck of the burner may be arranged to be detachably connected with the reservoir in any proper way. In the present instance the means of connection consists of a simple slip-joint, the tube fitting around a collar, *f*, on the reservoir.

In Fig. 2 the tube is shown as fitted directly to the collar. In Fig. 1 there is shown an intermediate device consisting of a thimble, E, open at both ends, adapted to fit into the tube B, and provided at its lower end with expanding spring-arms *g*, which can be compressed so as to enter the collar *f*, and to there hold the burner in place by their outward pressure. A flange, *h*, on the lower end of the thimble limits the extent to which the thimble enters the tube and the spring-arms enter the collar.

The cover which I prefer to use is shown in Fig. 3. It is composed of the main cover F, which is of a size to fit over the whole top of the burner. This main part F is of annular form, its central opening being provided with a second and smaller cover, G, preferably pivoted to F, as shown at *i;* and the second cover,

G, is annular, also, and has its central opening provided with a still smaller pivoted cover, H.

By means of this series of covers any size of flame that is desired can be had from the same burner, the size of the central opening in the particular cover used determining the size of the flame.

The thimble E is useful, in that it will permit the burner to be applied to openings of various sizes, the spring-arms adapting themselves to such variations, and thus the burner can be used on any kind of reservoir—such, for instance, as any ordinary bottle. When not required for use it can be removed, and the burner can then be used without it.

The arrangement of the burner is very simple, and permits of its being easily and thoroughly cleansed whenever desired. All that is needed is to pull out the cork or plug. This gives access to the packing *b*, which may be picked out and removed through the tube B. The burner is now empty and can readily be washed out. This is a feature of importance, and enables the burner to be kept in good condition at all times, in which respect it possesses decided advantages over the ordinary alcohol heater.

I remark in this connection that I also contemplate making the wire-gauze top removable, for the purpose of affording access to the interior of the cap A.

Another advantage that my device possesses over the ordinary heater hereinbefore referred to is, that with the latter only a limited quantity of liquid—such only as will be absorbed by the packing—can be used. When that is exhausted the lamp must be refilled.

With my device the reservoir is distinct from the burner, and I can use any quantity of liquid that I please, and so maintain a continuous heating-flame for any given length of time. I prefer a flat, broad reservoir, such as shown in the drawing. This, however, is a matter that is discretionary with the manufacturer.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The heater-burner consisting of a cup or dish-like cap, covered with a wire-gauze top and provided with a porous packing or filling, and a neck or tube, adapted to be detachably connected or fitted to a reservoir, and to contain wicking, which shall conduct the fluid from the reservoir to the packing, as set forth.

2. The heater-burner, made as described, in combination with the movable wick-carrying plug, fitting or received in the neck of the burner, substantially as set forth.

3. The removable thimble, adapted to be attached to the heater-burner, and provided with spring or elastic arms, to engage the reservoir and hold thereon the burner, as set forth.

4. A lamp-heater consisting of a fluid-reservoir and a detachable and removable burner formed of a cup or dish like wire-gauze-covered cap, provided with a porous filling, and a tube or neck which can be fitted to the reservoir and contains the wicking, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ROBERT H. CHASE.

Witnesses:
M. GEORGU,
HENRY R. ELLIOTT.