

(No Model.)

C. S. UPTON.
LAMP STOVE.

No. 518,127.

Patented Apr. 10, 1894.

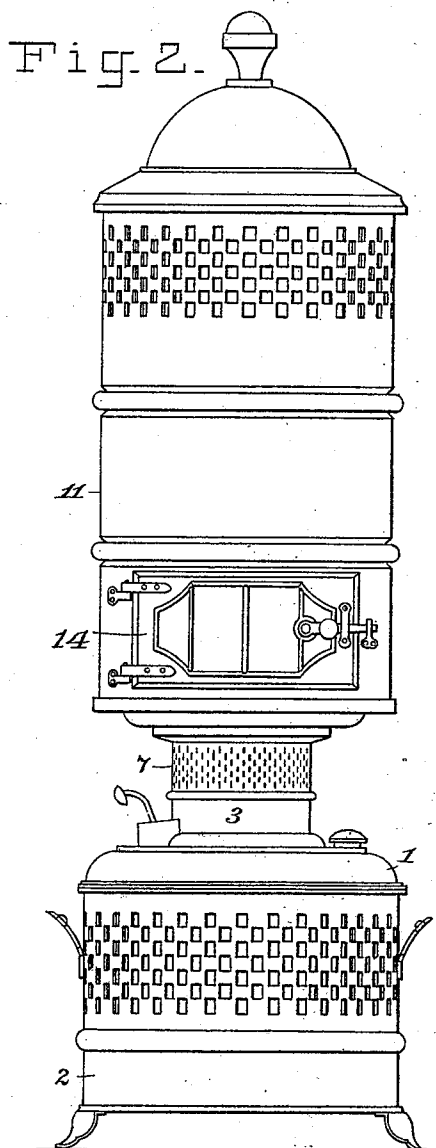
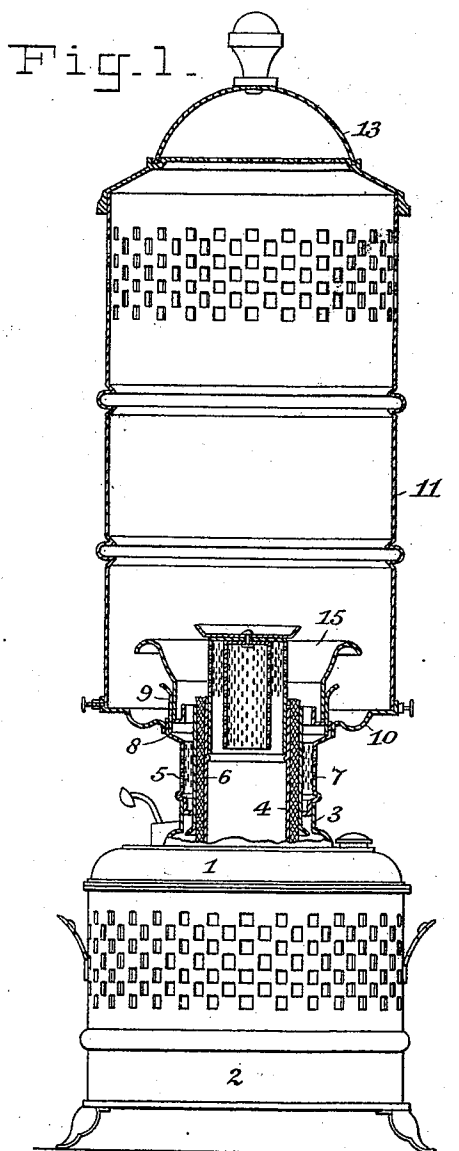
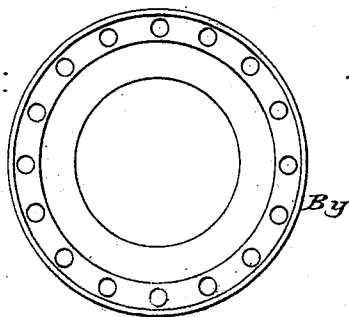


Fig. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES S. UPTON, OF NEW YORK, N. Y.

LAMP-STOVE.

SPECIFICATION forming part of Letters Patent No. 518,127, dated April 10, 1894.

Application filed November 24, 1893. Serial No. 491,870. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. UPTON, a citizen of the United States, residing in the city and county of New York, State of New York, have invented certain new and useful Improvements in Lamp-Stoves, of which the following is a specification.

My invention relates to lamp stoves, and particularly to that class of lamp stoves which is employed in the warming of rooms and buildings; and my invention consists in the novel device herein described for obtaining complete combustion without the use of a draft chimney, and in the novel construction and arrangement of the parts, as is more fully hereinafter described.

My invention, while in general applicable to all lamp stoves, is particularly intended to be applied to that class of lamp stoves which are employed in the warming of rooms or buildings. In this class of stoves the burner is inclosed within a heating drum of considerable size. Because of the size of the drum it has been necessary, in most lamp stoves heretofore constructed, in order to obtain complete combustion, to provide the burner with a draft chimney of considerable height, as is usual in lamps. This draft chimney has usually been of glass. To the use of such a chimney there are many objections. The hot gases from the burner are discharged from the top of the chimney at a point near the top of the drum, so that only the upper portion of the drum is heated sufficiently to be efficient as a radiating surface. It is further necessary to remove the chimney, and also the drum, in order to light the wick. Furthermore, the intense heat in the interior of the stove is quite likely to cause the chimney to break, thus throwing the stove out of use temporarily.

The objects of my invention are, to provide means for securing complete combustion in lamp stoves without the use of draft chimneys, and to provide suitable and simple means for supporting the heating drum from the burner. These objects are attained in the lamp stove herein described and illustrated in the drawings which accompany and form a part of this application, in which the same reference numerals indicate the same or corresponding parts, and in which—

Figure 1 is an elevation of the lamp stove, in which the burner and heating drum are shown in section. Fig. 2 is a similar elevation, showing however the outside of the drum and burner; and Fig. 3 is a plan view of a modified form of bottom plate.

In the drawings, 1 is the oil fount of the stove, and 2 is a casing surrounding and supporting the oil fount, and forming the base of the stove.

3 is the burner, which is of the central draft class represented by the familiar "Rochester" burner. This burner is shown in section in Fig. 1.

4 is the central draft tube of the burner, which extends downward through the bottom of the oil fount, as is usual with central draft lamps.

5 is the outer wick tube, and between the tubes 4 and 5 is the wick 6.

7 is the perforated air distributor, through which air passes to the outer portion of the flame. It likewise forms the outer casing of the burner.

8 is the usual chimney gallery of the burner, and is provided with springs 9 such as are ordinarily used for holding in place a draft chimney.

Supported from, and preferably attached to the chimney gallery 8, is a circular plate 10, which forms the bottom plate of the drum and is likewise the means of support for the heating drum, 11. The drum 11 is a cylinder formed of thin sheet metal. In order to prevent any possible interference with the perfect combustion of the oil by currents of air entering the drum at the sides and near the bottom, I prefer to have no perforations or openings near the bottom of the drum, except one opening, closed by a door 14, through which the wick may be lighted and the flame examined. Near the top of the drum there are formed perforations, through which the hot air and gases from the burner escape. The top plate of the drum is likewise perforated, to permit of the escape of the hot gases through the top of the drum; but since it is ordinarily desirable to have the heat radiated from the side of the drum rather than to have the hot air pass directly upward from said drum, I have provided a cover 13 for the top of the drum, the edge of which cover rests in

a groove formed in the top plate of the drum, and effectually prevents the escape of the hot gases through the top of the drum. If desired, this cover 13 may be removed, and the hot gases will then pass directly upward through the perforations in the top plate.

15 is a tubular collar held in place by springs 9, which takes the place of the draft chimney heretofore used in most stoves of this class. The upper portion of this collar flares outwardly, both for the purpose of avoiding overheating of the collar, and of the better adapting the said collar to deflect backward currents of air which would be likely to interfere with the complete combustion of the oil. To this end the upper edge of the collar is turned downward or rolled over. The currents of air which are likely, without this collar 15, to interfere with the combustion of the oil are those currents which flow nearly horizontally toward the center of the drum; such currents of air are formed by the natural circulation within the drum, when the wick is lighted, and usually descend close to the walls of the drum, flow nearly horizontally across the bottom thereof, and then ascend in the center of the drum. It will be seen that with the form of collar 15 herein shown and described, all such currents of air are deflected backward by the collar, and are forced to rise considerably before they can reach the center of the drum, so that the flame is completely protected from being disturbed by these currents.

It will be observed that the top of the collar 15 is considerably above the bottom plate 10. In some lamp stoves heretofore constructed it has been attempted to dispense with a draft chimney by constructing the bottom plate of the drum with a depressed central portion forming a collar which partially incloses the flame. But since this plate is the bottom plate of the drum, the currents of air flowing across the bottom plate toward the center of the drum are not deflected backward, but meet in the center at a point but slightly above the flame; so that the draft through the burner, and consequently the combustion of the oil, are seriously interfered with. But by providing a separate collar, as 15, which rises considerably above the bottom

plate of the drum, I am able to completely intercept and turn backward and upward these currents of air, so that the draft through the burner is quite unaffected by these horizontal currents.

If desired, the plate 10 may be perforated, as shown in Fig. 3. By this means the amount of air heated by the stove may be greatly increased, though of course this air will not be heated to so high a temperature as where the bottom plate is not perforated. Since the currents of air entering through these perforations are vertical, they do not interfere with the combustion of the oil.

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

1. In a lamp stove, the combination, with a burner, of a heating drum inclosing the burner and suitably supported, and a collar inclosing the flame and rising above the bottom of the drum, for protecting the flame from currents of air, and adapted to deflect such currents upward and away from the flame, substantially as described.

2. In a lamp stove, the combination, with a burner, of a heating drum inclosing the burner and suitably supported, and an outwardly flaring collar inclosing the flame and rising above the bottom of the drum, for protecting the flame from currents of air, and adapted to deflect such currents upward and outward, substantially as described.

3. In a lamp stove, the combination, with a burner 3 having a chimney gallery 8, a heating drum 11 inclosing said burner, and a bottom plate 10 supported by said chimney gallery and adapted to support said drum, of a collar 15 supported by said chimney gallery, inclosing the flame and rising above the bottom plate 10, and having an outwardly flaring upper portion, and adapted to deflect air currents upward and outward, substantially as described.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

CHARLES S. UPTON.

Witnesses:

THOMAS SPROULL,
H. M. MARBLE.