

(No Model.)

J. E. NICHOLS.
LAMP STOVE.

No. 603,341.

Patented May 3, 1898.

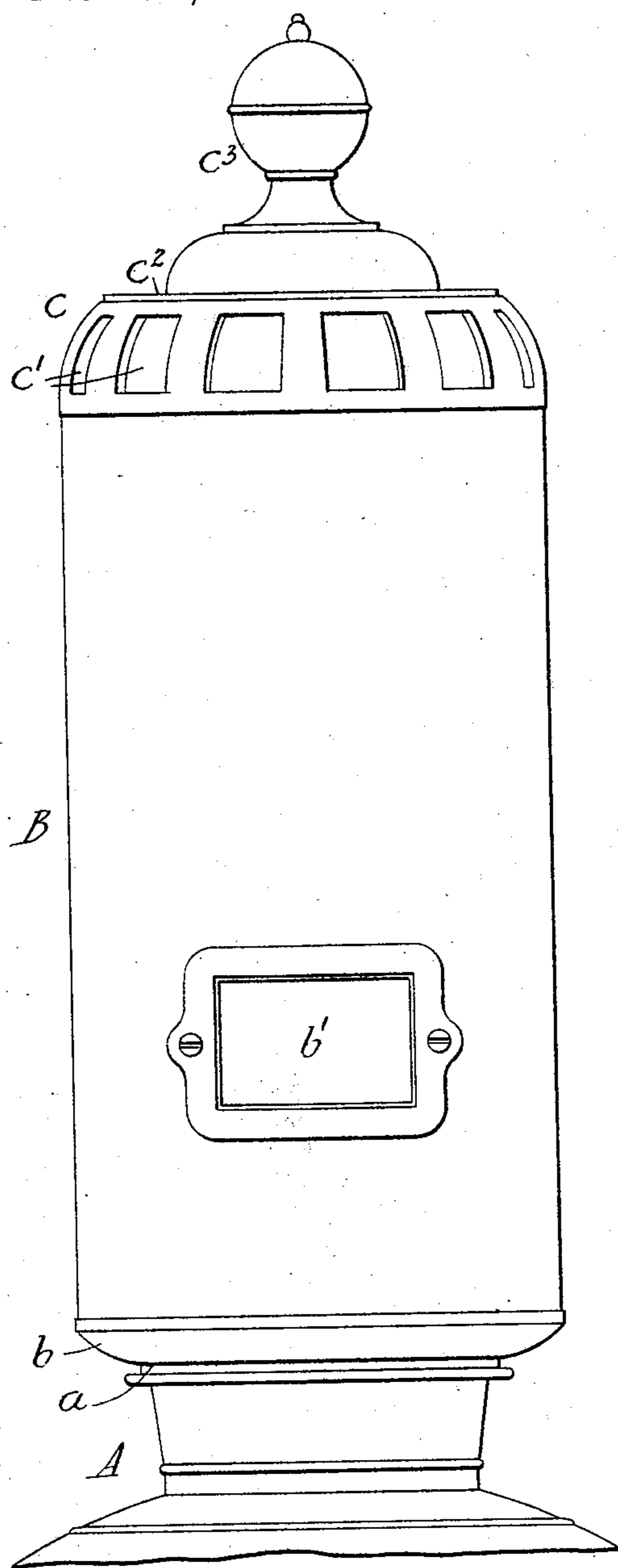


Fig. 1.

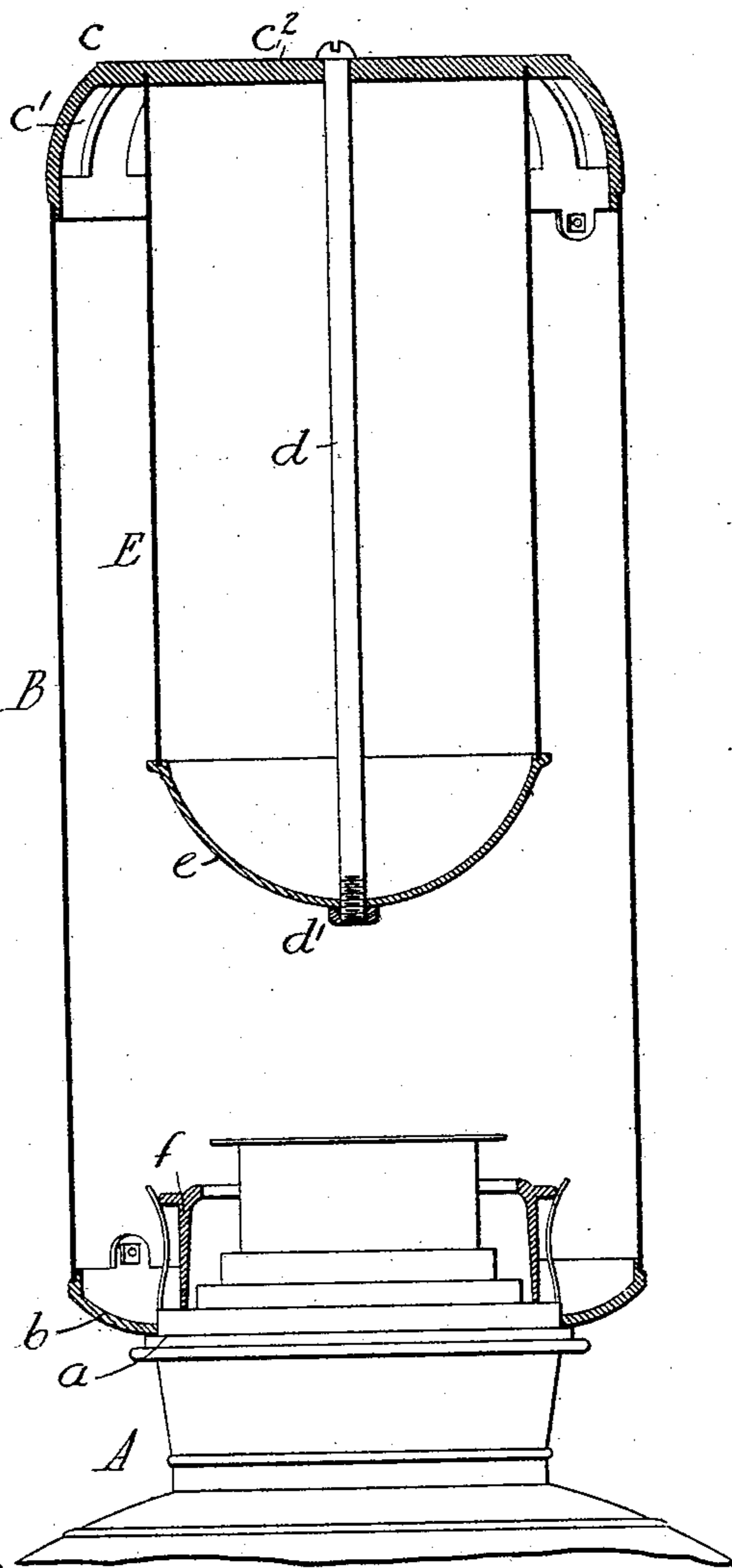


Fig. 2.

Witnesses

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JOSEPH E. NICHOLS, OF ROCHESTER, NEW HAMPSHIRE.

LAMP-STOVE.

SPECIFICATION forming part of Letters Patent No. 603,341, dated May 3, 1898.

Application filed July 23, 1897. Serial No. 645,685. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH E. NICHOLS, a citizen of the United States, residing at Rochester, in the county of Strafford and State of New Hampshire, have invented certain new and useful Improvements in Lamp-Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of heaters which are designed for application to lamps and which are known in the art as "lamp-stoves."

The object of my invention is the production of a simply-constructed heater possessing advantages in point of efficiency as regards the amount of heat obtained and economy in the use of fluid, and added to this the structure of the device is such that it may at will be converted from a heat-radiator for warming the inner atmosphere to a stove for cooking or heating purposes, or, if desired, to an illuminating-lamp for lighting purposes.

The nature of my invention will appear from a reading of the following description when taken in connection with the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is an elevation of my improved heater when utilized as a heat-radiator for warming rooms or the like, and Fig. 2 is a vertical central sectional view of the same.

Referring to the said drawings by letter, A denotes the lamp proper, which, as shown, is of the oil-burning type, but which may for the purposes of my invention be a gas or other fluid-burning lamp. Near the upper end of said lamp proper I provide a bead or shoulder *a*, on which the device presently to be described is supported. I prefer to employ an oil-lamp of the character shown, as such lamps are usually provided with means similar to the shoulder *a* for maintaining the chimney in place, and it may be here stated that in practice when the heater is to be converted into an illuminating-lamp the device is removed and replaced by a chimney of ordinary construction.

Referring now to what I may term the "stove" proper, B denotes a metallic cylinder,

to the lower end of which is secured a flange *b*, the inner diameter of which conforms to that of the upper end of the lamp on which it is placed, said flange resting on the shoulder *a*. To the upper end of the cylinder is secured a head or cover *c*, in the sides of which are apertures *c'* *c'*, which serve as outlets for the products of combustion of the lamp and insure a proper circulation. The top *c*² of said head or cover is flat and thereby serves to hold a cooking or warming vessel, as will presently appear. The head or cover is preferably provided with a knob *c*³, which is removable and is placed thereon merely for ornamental purposes. In the cylinder near its lower end is an opening *b'*, having a mica covering. This opening allows of the inspection of the burner and also furnishes illumination when the cylinder is attached to the lamp. Secured to this head by means of a rod *d* and nut *d'* is an inner cylinder E, closed at all points to render the same approximately air-tight. The lower end *e* of said cylinder E is cone-shaped, for a purpose to be presently explained.

f denotes an annular metallic shield, which is removably placed on the upper end of the burner and operates to protect the casing from the direct action of the flame of the lamp, said shield being interposed between the lower end of the cylinder and the burner.

When the device is to be employed as a heat-radiator for heating rooms, hothouses, conservatories, or the like, the arrangement is as shown in the figures of the drawings. It will be noted that the inner cylinder is concentrically placed within the cylinder B and that a comparatively narrow annular passage is thereby provided for the heat and products of combustion. The inner cylinder extends within the outer cylinder to a point adjacent to the burner, and, as stated, the lower end thereof is cone-shaped to provide a rapid deflector for the heat to said annular passage. By this arrangement the major portion of the heat is directed against the outer cylinder, the inner cylinder, by reason of its approximately air-tight condition, possessing no conductivity. Consequently the bulk of heat is radiated into the outer air when at its highest temperature. The air enters only through the lamp proper and performs simply the func-

tion of supporting combustion, so that the heat generated by the lamp has no contact with the outer air until said heat passes through the perforations in the head or cover
5 after losing most of its heat units by radiation from said cylinder. The inner cylinder, being to all intents and purposes a solid non-conducting body, will receive and retain a comparatively small quantity of heat, so that
10 the bulk of the heat generated is rapidly radiated and diffused throughout the room.

To convert the radiator into a cooking or warming stove, the ornamental knob is removed and the vessel containing the substance to be cooked or warmed is placed on
15 the top of the head or cover, as will be understood. The apertures in said head or cover, however, are open and afford a sufficient circulation of air to support combustion, or, in
20 other words, perform the same function as in the radiator.

For the purposes of illumination the cylinders are removed from the lamp and in place of the outer cylinder a lamp-chimney is applied.
25

The necessary changes for converting the device into a radiator, a cooking or warming stove, or an illuminating-lamp can be made instantly by very simple manipulation, and
30 the operations of the device in any one of its forms are very effective.

The peculiar arrangement of the inner deflector renders it possible to employ an outer cylinder of comparatively small diameter, thereby enabling in an oil-lamp, for instance,
35 a small wick and consequent economy in fuel, and also renders the device applicable to the ordinary lamp. By reason also of the smallness of the cylinder the body of heat is contracted, the pressure resulting therefrom further raising the temperature and causing the radiation of heat of a temperature much
40 higher than is possible with a cylinder of a comparatively large diameter. The device,

moreover, is light of weight and thereby readily carried and may be easily cleaned, as access to every part is readily permitted.

The device is very compact and is susceptible of being highly ornamented.

The simple construction of the device enables the same to be cheaply produced, and there being few parts there is no liability to disorder with ordinary use.

I claim as my invention—

1. In combination with a lamp, a metallic cylinder adapted to be removably attached to the upper end of the lamp; a head or cover secured to the top of said cylinder, and provided with apertures as described; and an inner approximately air-tight cylindrical body
55 secured to said head or cover and projecting within the outer cylinder to a point near the burner, providing an annular space between the cylinders, said cylindrical body being practically non-conductive of heat, all substantially as and for the purposes set forth.

2. In combination with a lamp, a metallic cylinder adapted to be removably attached to the upper end of the lamp; a head or cover secured to the top of said cylinder and provided with apertures as described, an inner cylinder concentric with the outer cylinder and approximately air-tight to preclude conductivity of heat, secured to said head or cover and projecting within the outer cylinder
75 to a point near the burner, providing an annular space between the cylinders, said inner cylinder having a cone-shaped lower end; and an annular metallic shield removably interposed between the burner and the lower end of the outer cylinder, substantially as and for the purposes set forth.

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

JOSEPH E. NICHOLS.

Witnesses:

CHAS. S. BUCK,
JOHN L. COPP.