

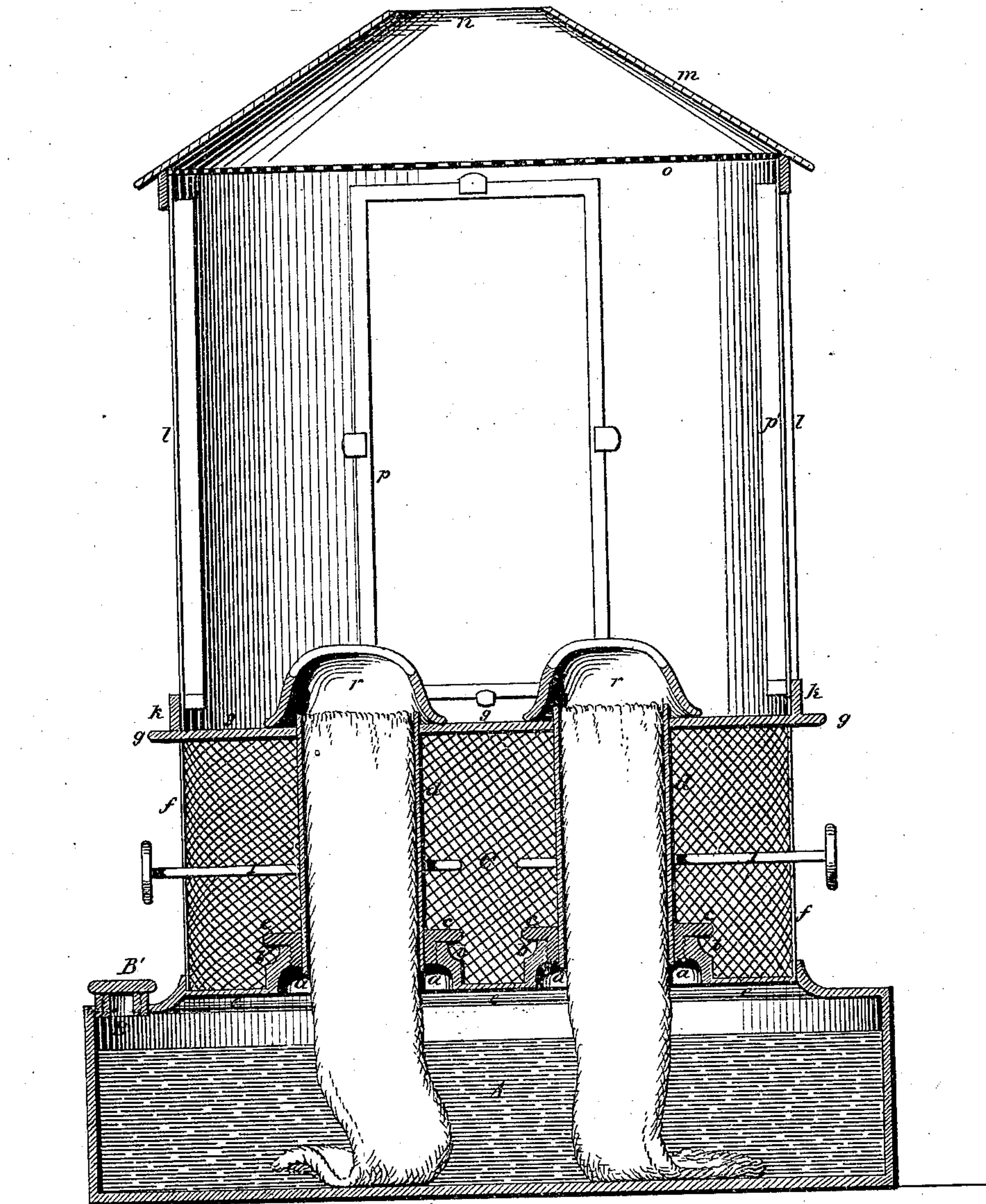
L. E. TRUESDELL.

Lamp-Heater.

No. 131,578.

Patented Sep. 24, 1872.

Fig. 1.



WITNESSES:

*Mary G. Brower*  
*J. Knight*

INVENTOR:

*Lucius E. Truesdell*  
*by his Atty D. Hannay*

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Fig. 2.

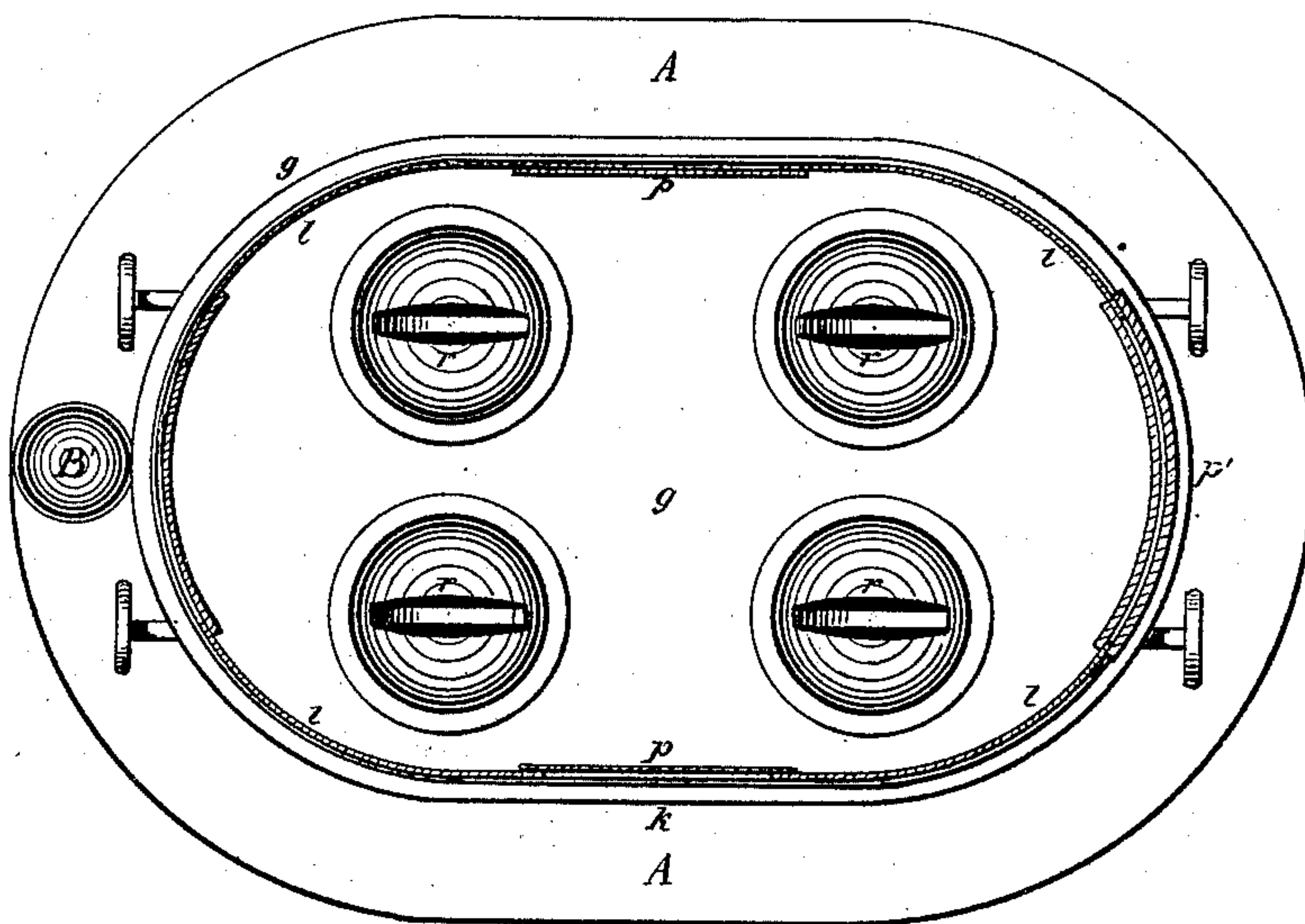
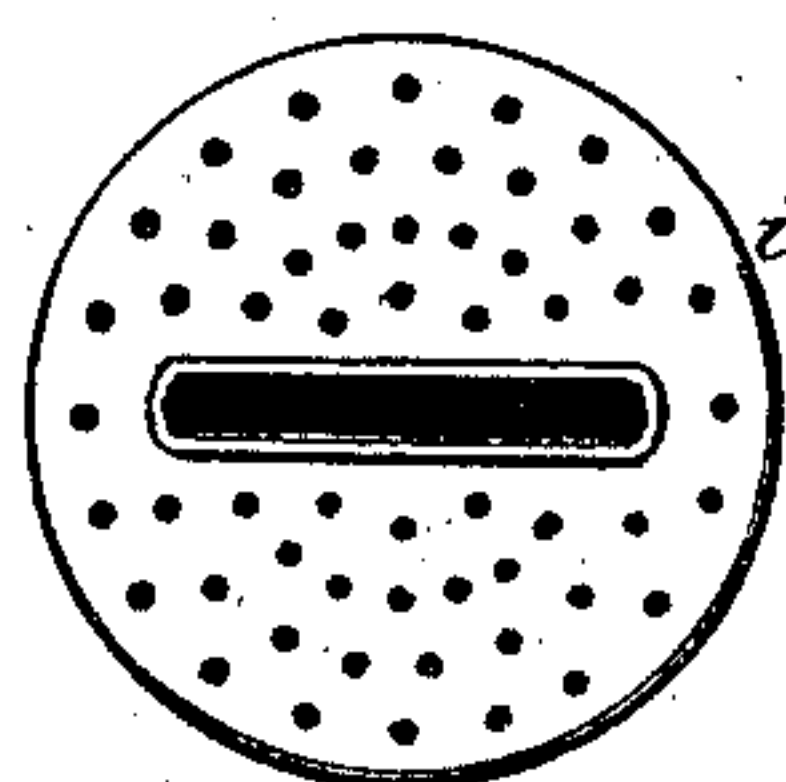


Fig. 3.



WITNESSES:

*Mary G. Brower*  
*J. P. Knight*

INVENTOR:

*Lucius E. Truesdell*  
*by his atty. J. P. Conway*



# UNITED STATES PATENT OFFICE.

LUCIUS E. TRUESDELL, OF WARREN, MASSACHUSETTS.

## IMPROVEMENT IN LAMP-HEATERS.

Specification forming part of Letters Patent No. 131,578, dated September 24, 1872.

*To all whom it may concern:*

Be it known that I, LUCIUS E. TRUESDELL, of Warren, in the county of Worcester and State of Massachusetts, have invented certain Improvements in Stoves for Burning Hydrocarbon Oils, of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a vertical longitudinal section of a stove having my improvements applied thereto, and Fig. 2 a horizontal section of the same. Fig. 3 represents a detached view of the diaphragm which surrounds the upper end of the wick-tube.

My invention relates to that class of stoves in which petroleum or hydrocarbon oils are employed as fuel instead of wood or coal; and has for its object such a construction of the stove as will insure a more perfect combustion of the oils than has heretofore been attained, whereby the greatest amount of heat commensurate with the amount of oil consumed is obtained, while sufficient light will at the same time be furnished for all ordinary or practical purposes, and that without smoke or disagreeable odor incident to imperfect combustion; and it consists in the use of a plate or diaphragm, in connection with the cones or burners, in such manner that all the air admitted to the interior of the stove is first made to pass directly through the cones or burners in contact with the flame before finding entrance to the upper or radiating portion of the stove. It also consists in combining with the radiating portion, and at a suitable distance above the flame of the lamp, another, but perforated, diaphragm, whereby combustion is greatly promoted and danger from fire prevented. It further consists in combining with these devices a perforated or wire-gauze tubular cylinder, for the double purpose of supporting the upper or radiating part of the stove, and of admitting the necessary amount of air to the burners. It also consists in combining, with the oil-reservoir that supplies the lamps with the oil, a perforated or wire-gauze tubular cylinder for the support of the plate on which the burner rests, whereby the air in its passage to the lamps is made to cool the cylinder, and thereby prevent, in a great degree, the heating of the reservoir and consequent generation of gases.

To enable others skilled in the art to make,

construct, and use my invention, I will now proceed to describe it in detail.

The oil-reservoir A may be made of sheet metal, properly soldered together or otherwise connected in any well-known manner, so as to be oil-tight; or it may be made of thin cast-iron; but the former is preferred. B represents the mouth through which it is charged with oil, and is provided with a screw-stopper, B'. In the upper side or cover of the reservoir openings *a* are made, as many in number as there are lamps to be used, in which are securely fitted rings *b*, having a female screw-thread cut therein, and into which takes the male screw of the wick-tube disk or holder *c*. To this disk is firmly secured the wick-tube *d* in any well-known manner. The outer periphery of this disk may be milled, to facilitate its removal when desired. The wick-tubes are provided with lugs having bearings for the support of the spindles and feed-wheels which raise and depress the wicks. The shape of the reservoir is made to conform to the configuration intended to be given to the upper part of the stove, so that the latter shall rest and be supported upon the cover of the latter, either directly or through the medium of a thin ring made of a material having a low capacity for the conduction of heat; but it may be made of any other suitable shape. As a rule, the shape will be either rectangular, circular, or oval; but the latter form I prefer. Upon the cover *e* of the reservoir, or the thin ring above referred to, and superposed thereon, is arranged a perforated sheet-metal or wire-gauze cylinder, *f*, to the upper edge of which is secured, in any well-known and suitable manner, a metal diaphragm or plate, *g*, in which openings *h* are cut, corresponding in number and position to the number of burners to be used. Into these openings thin circular plates *i*, provided with a series of small openings, are fitted, and through which the upper ends of the wick-tube *d* is made to pass, as seen in Figs. 1 and 3; or, instead of being made of a perforated thin sheet-metal disk, it may be made of wire-gauze; or it may be omitted altogether, although it is deemed better to use it, as the result is more satisfactory. Immediately over these are fitted the cones or burners *r*, and so as their lower edge shall rest on the metal diaphragm *g*, or on a cylindrical ring secured thereto, and to which they may be connected,



so as to be retained in their proper place by any well-known and suitable means, such as a hinged joint, lugs, &c. On the upper side of the diaphragm *g*, and near its periphery, is secured a flange, *k*; or, instead thereof, a number of small standards arranged at suitable distances apart, over or within which is nicely fitted the lower end of the heat-radiating portion of the stove, or what may be termed the cylinder *l* of the stove; or this cylinder may be secured or attached to the diaphragm *g* in any other well-known and suitable manner—as, for instance, the bottom of the cylinder may be made to flare outwardly, and then inserted between two or more inwardly-projecting lips secured to the upper edge of the diaphragm, and near its periphery, and secured therein by a thumb-screw passing through a standard and over the flange of the cylinder in the same manner as the chimneys of many of the well-known coal-oil lamps are secured. The upper edge of the cylinder *l* is formed or covered with a cap, *m*, the center of which is provided with an opening, *n*, for the escape of the products of combustion of the lamps. This cover *m* may be prolonged upward as far as may be necessary to induce a proper draft of air for the entire combustion of the oil, for which purpose it may be provided with a telescopic chimney of easy adjustment. To the cover or cap *m* is secured a horizontal wire-gauze diaphragm, *o*, which not only materially assists in producing a perfect combustion, but acts as a means of preventing accidents by fire from the lamps. Of course this diaphragm may be secured, if desired, to the cylinder *l* instead of to the cover *m*. In the sides of the hollow cylinder *l* are cut openings *p*, which are covered with a transparent medium, such as glass or mica; but by preference the latter, it being much less liable to accidents, while forming an excellent radiating medium, as well for heat as light. To one of these openings *p* is hinged a door, that access may be had to the lamps for trimming and cleaning purposes.

Thus constructed the apparatus is valuable, not only as a stove for heating purposes, but also

as a powerful lamp for illuminating purposes, and may be decorated in any suitable manner, so as to be ornamental as well as useful, and capable, like a lamp, of being moved from place to place, wherever its services may be required. If desired, a suitable pipe may be arranged in the chimney or walls of the room to carry off the products of combustion, as in an ordinary stove. Such need not be immediately attached or connected with the latter, its mouth being simply arranged above.

In constructing these stoves I do not intend to confine myself to the precise method of constructing or putting the individual parts together shown in the drawing, as such may be varied in a great number of well-known ways without altering in the least the principle of this invention. Of course, as many burners may be employed for the purpose as may be required to produce the desired effect.

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

1. The combination of the air-chamber *C*, perforated cylinder *f*, wick-tubes *d*, plate *g* provided with openings *h*, cones or burners *r*, and a cylinder, *l*, so constructed as to act as a chimney, for the purposes set forth.

2. In combination with the burners or cones *r*, diaphragm *g*, and cylinder *l*, I claim the perforated plate or wire-gauze diaphragm *o*, for the purpose set forth.

3. In combination with the devices set forth in the second claim, I claim the perforated cylinder *f*, for the double purpose of supporting these devices and of admitting the necessary amount of air to the burners, substantially as described.

4. The combination of the reservoir *A*, that supplies the oil to the wicks, with a perforated sheet-metal or wire-gauze cylinder *f*, plate *g*, and burners or cones *r*, for the purposes set forth.

L. E. TRUESDELL.

Witnesses:

A. McCALLUM,  
D. G. STUART.