

LAMP-STOVE.

Patented April 25, 1876.



**WITNESSES:**

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN LAMP-STOVES.

Specification forming part of Letters Patent No. **176,579**, dated April 25, 1876; application filed March 18, 1876.

*To all whom it may concern:*

Be it known that we, M. H. BARNES and J. IRVING, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Lamp-Stoves; and we do hereby declare the following to be a full, clear, and exact description of the same.

In the drawings accompanying and forming part of this specification, Figure 1 represents a vertical section of my apparatus through the line *y y*, Fig. 2. Fig. 2 represents a vertical section of the same through the line *x x*, Fig. 1.

The object of my invention is to construct a lamp-stove by the use of which there may be a general economy of heat, and in which the oil or burning-fluid used may not become overheated and dangerous, as will be hereinafter more fully described.

In the accompanying drawings, A represents a circular metallic oil chamber or receptacle, through which, near the top, runs the partition *a*, forming, with the top, the shallow chamber *a*<sup>1</sup>, which is filled with plaster-of-paris or other suitable non-conducting solid substance *a*<sup>2</sup>. The oil-chamber is supplied with fuel by means of the circular opening *a*<sup>3</sup>, (represented in Fig. 1,) covered by its proper screw-cap.

The wick-tube is seen at *a*<sup>4</sup>, the wick being raised and lowered by the revolutions of the toothed wheels *a*<sup>5</sup> *a*<sup>6</sup>, moved, by means of the milled head *a*<sup>7</sup>, in the usual manner. At a proper height on the wick-tube are small projections or supports *a*<sup>8</sup> *a*<sup>8</sup>, upon which rests the sleeve of the wick-tube.

The wide-leaved hinge by which the drum containing the chimney, hot-air chamber, &c., is joined to the oil-chamber is seen at *a*<sup>9</sup>, Fig. 1.

R represents the sleeve of the wick-tube, which rests, by means of a rectangular plate, *b*, across its lower and broader end, on the projections or supports *a*<sup>8</sup> *a*<sup>8</sup>, a long narrow slit being cut through the plate for the passage of the wick-tube. The sleeve is lined within with plaster-of-paris or other suitable non-conducting solid substance *b*<sup>1</sup>, the inner surface of which is in close contact with the wick-tube.

It is to be remarked that the sleeve and its non-conducting lining ascend a short distance above the top of the wick-tube, so that when the lamp-stove is being used the wick, for some distance below the flame, is in contact with a non-conductor only, and thus the wick-tube and other surrounding metallic parts of the apparatus escape a high degree of heat.

C represents a broad, shallow, disk-like metallic chamber of the diameter of the oil-chamber, filled with the same non-conducting solid substance as at *a*<sup>3</sup>, and resting on top of the oil-chamber by the legs *c c*, of sufficient height to give free play to the toothed wheels and the milled head *a*<sup>7</sup>. The disk, with all parts directly connected with it, is removable from the remainder of the apparatus by lifting it from its position on the upper surface of the oil-chamber. *c*<sup>1</sup> *c*<sup>1</sup> are the sides of a sleeve of similar shape, but somewhat larger and shorter than the sleeve of the wick-tube, over which it sits loosely when the disk C is in position, leaving a sufficient passage, *c*<sup>2</sup>, for a current of cool air to pass up between the two, and aid in cooling the wick-tube and its sleeve. The sides *c*<sup>1</sup> *c*<sup>1</sup> pass from the lower plate of the disk C, and make at their lower junction a rectangular opening in the disk, through which the sleeve of the wick-tube passes, and which opens below into a shallow, rectangular, foraminous cup, which rests upon the plate *b* of the sleeve of the wick-tube, the upper portions of which pass through a rectangular opening in its bottom. The numerous perforations in this cup admit the cool air freely, while the cup is sufficient to protect the flame from any sudden blast, and also to protect the oil-chamber from the descent of the flame through the passage *c*<sup>2</sup> *c*<sup>2</sup>. D represents a circular metallic drum, of the diameter of the disk and oil-chamber, which, with all the parts connected with it, turns on the hinge *a*<sup>9</sup>, so as to allow easy access to the lower parts of the apparatus when necessary to fill the oil-chamber or trim the wick. The drum is divided into two unequal parts by the plate *d*, which, with the top, forms the hot-air chamber *d*<sup>1</sup>, the top having in it a large circular opening, over which the cooking utensils rest when the stove is being used. The bottom and top plates of the drum and



the plate  $d$  have each, running around a short distance within the circumference, a circle of holes,  $d^2$   $d^2$   $d^2$ , &c., which allow a circulation of air through the drum and chamber above. Attached to the lower plate of the drum, and resting on the disk C, is the ring of foraminous metal  $d^3$ , sufficiently wide to allow a free draft to pass through to the flame within, while it protects the flame from any sudden blast. In a circular opening in the bottom plate of the drum, and surrounded by the ring of foraminous metal, is secured an ordinary lamp-cap,  $d^4$ , surrounding which is a metallic chimney,  $d^5$ , fastened below by the screw  $d^6$ , Fig. 2, and fitted above into a circular opening in the plate  $d$ , at which it ends.  $d^7$   $d^7$  are mica-covered openings in the sides of the drum, and  $d^8$   $d^8$  are similar openings in the

sides of the chimney. By means of these the flame may be observed and adjusted when necessary.

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

In a lamp-stove, the combination of the non-conductor  $g$ , disk C with a metallic sleeve extending up around the burner from the lower plate of the disk, and with a shallow cup of foraminous metal, as and for the purpose herein specified.

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Witnesses:

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