G. H. FERRIS.

LAMP STOVE.

No. 189,616. Patented April 17, 1877.

Fig.1.

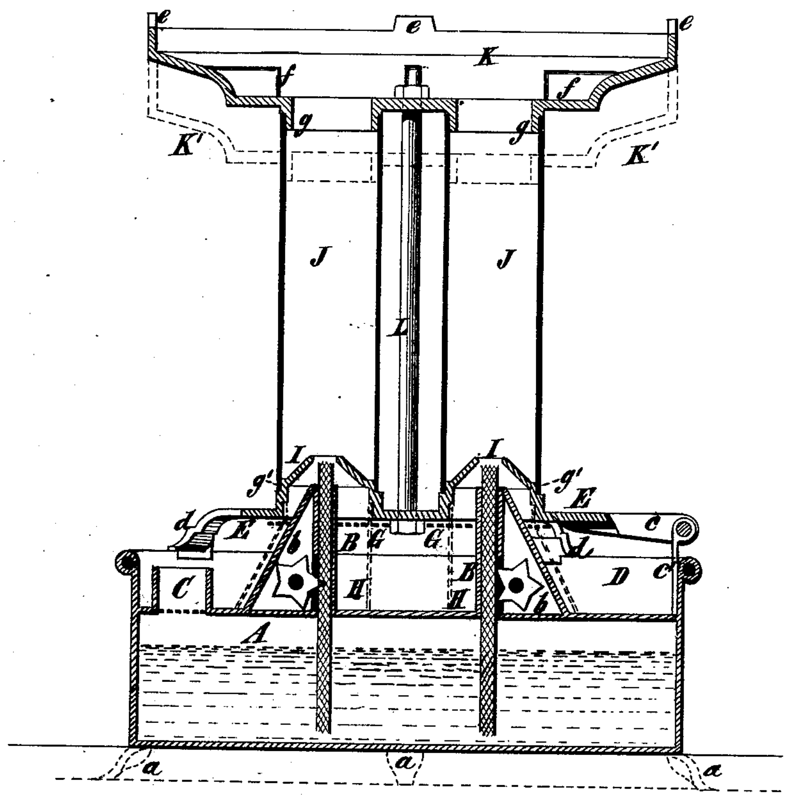
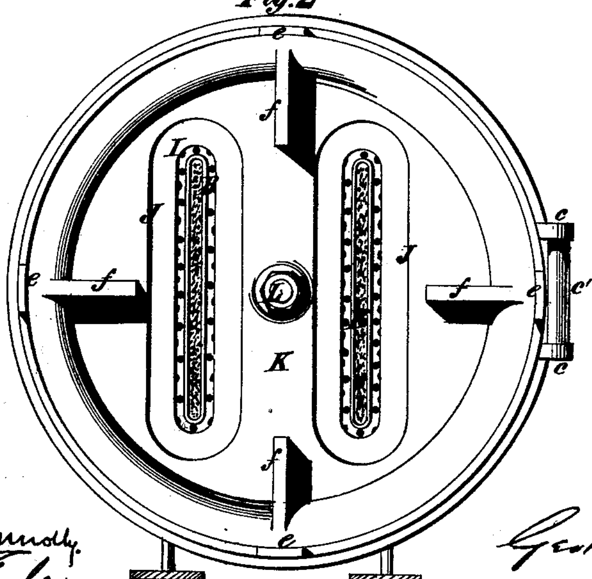


Fig.2



Witnesses.

Thomas le Connolly.

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UNITED STATES PATENT OFFICE.

GEORGE H. FERRIS, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN LAMP-STOVES.

Specification forming part of Letters Patent No. **189,616**, dated April 17, 1877; application filed April 6, 1877.

To all whom it may concern:

Be it known that I, GEORGE H. FERRIS, of Brooklyn, Kings county, and State of New York, have invented certain new and useful Improvements in Lamp-Stoves, of which the following is a specification:

These improvements are embodied in a lamp-stove, wherein is a cast-metal base-piece connected by a hinge or articulation with the lamp-reservoir, and provided with legs for resting thereon, flues erected on the base-piece and supporting a combustion-chamber, which is closed save where it affords ingress and egress for the products of combustion, and a bolt securing the base-piece, flues, and combustion-chamber together, whereby a very strong, economical, and otherwise superior article is produced.

The accompanying drawing illustrates an oil-lamp stove embodying my improvements. Figure 1 is a central vertical section of such stove, and Fig. 2 is a plan thereof.

Similar letters of reference designate corresponding parts in both figures.

A designates an oil-reservoir, shown as of cylindrical form, and may be erected on legs or feet *a*. It is provided with lamps consisting of wick-tubes B, wick-adjusting mechanism, and inclosing-shell *b*. It is also provided with a mouth or orifice, C, and is shown as being so constructed that its upper part may serve as a water-chamber, D. E designates a base-piece, which may, with advantage, be made of cast metal, and is provided with the part *c* of a hinge, *c c'*, connecting it to the oil-reservoir A, and with legs *d*, adapted to rest upon the top edge of the said oil-reservoir, or of that part which forms the water-chamber D. Between the oil-reservoir and its appurtenances and the base-piece E ample provision for the passage of air to the lamps is afforded. Air-distributers G, consisting of a plate of foraminated or reticulated material supported upon the lamp wick-tubes immediately under the base-piece E, and bracing and strengthening them laterally, or in lieu thereof, or in addition thereto, air-distributers H, consisting of cylinders or shells of foraminated or reticulated material surrounding the lamp wick-tubes, may be employed. I designates the deflectors, which, as represented, are embodied in the base-piece E, and may, with advantage, be so constructed, because then provision will be afforded, when the base-piece is swung back, for trimming and lighting the wick as well as extinguishing the flame. J designates flues, (here shown as two in number,) supported on the base-piece E over the deflectors, and extending upward therefrom, so as to induce proper drafts of air to insure a perfect combustion of oil in the lamps. K designates a combustion-chamber, which is represented as made of cast metal, and is entirely closed save where it affords ingress and egress for the products of combustion ascending from the lamps; in other words, it is destitute of any openings whatsoever except those through which it communicates with the lamps, and that at which it receives the articles to be heated. As here represented, it is supported solely by the flues J, and communicates directly therewith, wherefore it is isolated from the lamps. I have indicated by dotted lines K′ that it may be of any desirable depth. It is preferably provided at the top edge with a series of projections, *e*, for supporting articles which are larger than it in diameter, so that provision will be afforded for the escape of the products of combustion below them, and it is also preferably provided with other projections, *f*, for supporting smaller articles, so that they will not interfere with the escape of the products of combustion.

I have shown the flues J as fitting tightly outside portions or flanges *g g′* of the base-piece E and combustion-chamber K, so that lap-joints are formed, and all these parts are braced laterally together, so as to be rendered very strong and stable. A bolt, L, passing through the base-piece and the combustion-chamber, fastens them together with the flues between them, and form one rigid structure, which may be swung back at pleasure to afford facility for lighting, trimming, extinguishing, and replenishing the lamps.

The isolated closed combustion-chamber supported by the closed flues possesses great advantages. The flues, by confining the products of combustion, induce strong drafts of air to the lamps and invigorate the combustion, while the combustion-chamber allows them to expand in volume and circulate slowly

therein about the bottom of the article to be heated, so as to be most available, and then to pass upward around the sides of the article to be heated, wherefore they are most thoroughly utilized.

As I dispense with a drum in this stove I produce a very cheap and extremely strong and durable article, wherein great economy of oil is attained, and with so perfect a combustion that the emission of noxious vapors is obviated.

To render the stove more convenient it may be constructed so that it can be lighted without altering its position, and may be provided with devices capable of being moved wholly over the lamps to extinguish them, or partly over them, so as to reduce the size of the flames and the heat arising therefrom, without turning down the wick, impairing combustion, and entailing the emission of vapors.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a lamp-stove, of a base-piece, E, with legs *d* and hinge *c*, supported on a lamp, and a combustion-chamber adapted to support articles to be heated, with flues interposed between the base-piece and the combustion-chamber, substantially as described.

2. In a lamp-stove, a cast-metal bottom piece, E, provided with part of a hinge or articulation, and legs *d*, adapted to be supported on the lamp-reservoir, and to support the flues of the stove, substantially as set forth.

3. The combination of the base-piece E, provided with legs *d* and hinge *c*, flange *g'* thereof, flues J, combustion-chamber K, flanges *g* thereof, and bolt L, substantially as and for the purpose set forth.

GEO. H. FERRIS.

Witnesses:
A. MOORE,
R. E. GRANT.