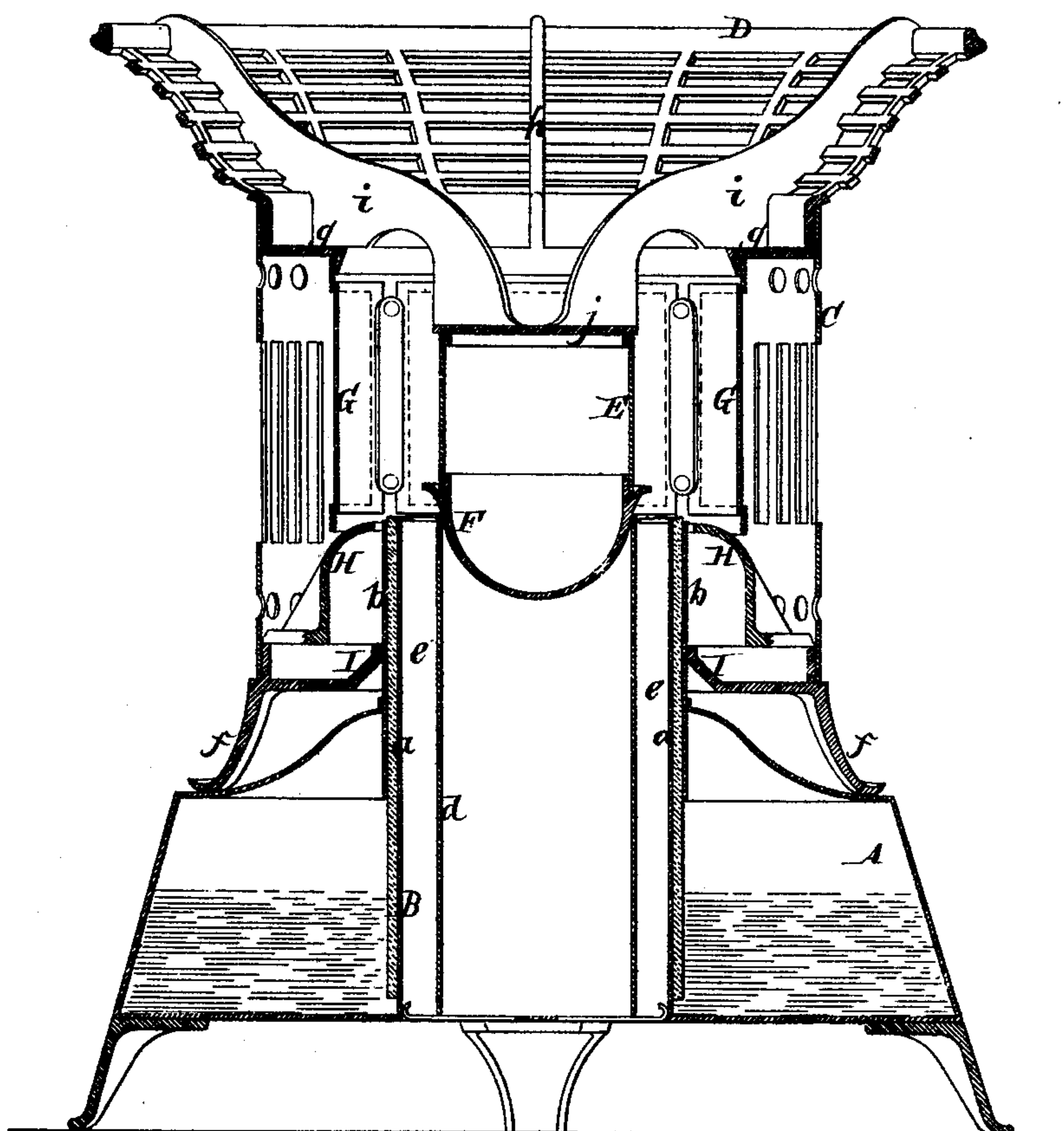


F. HILDEBRANDT.
 PETROLEUM COOKING-STOVE.

No. 185,533.

Patented Dec. 19, 1876.



Witnesses
 Otto Schufeldt
 Chas. W. Ahlers,

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 by
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UNITED STATES PATENT OFFICE

FREDRICK HILDEBRANDT, OF NEW YORK, N. Y.

IMPROVEMENT IN PETROLEUM COOKING-STOVES.

Specification forming part of Letters Patent No. 185,533, dated December 19, 1876; application filed November 25, 1876.

To all whom it may concern:

Be it known that I, FREDRICK HILDEBRANDT, of the city, county, and State of New York, have invented a new and useful Improvement in Petroleum Cooking-Stoves, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, which represents a vertical central section.

This invention relates to a petroleum cooking-stove in which a foraminous shell for supporting a vessel is combined with a petroleum-lamp. The lamp is provided with a center-draft wick-tube, with which is combined a double or annular chimney, secured in the foraminous shell, so that by the contracted space of the chimney sufficient draft is produced to consume the petroleum without smoke. In the lower portion of the foraminous shell is formed a circular flange, which hugs the circular wick-tube so as to retain the foraminous shell firmly in position on the lamp. The top frame of the foraminous shell is provided with ogee-shaped ribs for the adjustment of vessels of various sizes.

In the drawing, the letter A designates the oil-cistern or body of a lamp, in which is secured a circular wick-tube, B, composed of a cylinder, *a*, and a jacket, *b*, between which is placed the wick. The cylinder *a* rises from the bottom of the cistern, and it is open above and below, so that the atmospheric air can freely pass up through its interior to the flame. The jacket *b* is secured in the top of the oil-cistern, as shown in the drawing, and said top is convex, for the purpose hereafter described. In the cylinder *a* is situated an inner cylinder, *d*, which serves to contract the space *e*, through which the air passes to the interior of the flame, so as to cause such air to rush up with increased velocity. On the cistern A is placed a foraminous shell, C, which is made of sheet metal, and provided below with feet *f*, which bear upon the top of the cistern A. In the top of the foraminous shell is secured a circular frame, D, which is by preference made of cast-iron, and provided with a bottom flange, *g*, and with a series of ogee-shaped ribs, *h i*. The ribs *h* terminate on the flange *g*, but the ribs *i* extend beyond said flange, and are firmly connected to a flanged plate, *j*, to which is

fitted a cylindrical tube, E, the diameter of which is equal, or nearly so, to that of the inner cylinder *d* of the lamp. To the bottom end of the tube E is fastened a deflector, F, which fits into the mouth of the cylinder *d*, its flaring rim being made to project beyond the top edge of said cylinder, so that the air which passes up through the annular space *e* in the wick-tube is deflected outward. On the flange *g* of the top frame D of the foraminous shell is fitted a cylinder, G, which is by preference made of mica or other transparent material capable of sustaining the heat to which it may be exposed, but which may be made of any suitable opaque and incandescent material. This cylinder extends down close to a convex conductor, H, which is situated in the bottom part of the foraminous shell, above a flange, I, which lies near to and above the convex top of the oil-cistern when the foraminous shell is in position. This flange hugs the wick-tube closely, so that when the foraminous shell is placed on the lamp it will be securely retained in position. The conductor H is open at the bottom, and it does not fit closely around the wick-tube, so that the air which enters through the holes in the foraminous shell can pass on the inside and outside of said conductor to the flame.

By means of the ogee-shaped ribs *h i* of the top frame D vessels of various sizes can be conveniently and firmly adjusted on said frame for the purpose of exposing them to the heat of the flame which issues from the wick *c* of the lamp. The vessels placed on said top frame are entirely supported by the shell C, which is perforated with a large number of openings, so as to give free access of the air to the flame, and to allow the gases of combustion to escape without obstruction.

By using a lamp with a center-draft wick-tube, in combination with the foraminous shell, the contents of the vessel placed on said shell can be heated with great rapidity, the heat produced by the flame of this lamp being very intense.

By combining with the cylinder G an inner cylinder, E, I have produced an annular lamp-chimney, which, when combined with the circular wick-tube B, produces a flame without smoke. If the inner cylinder E is removed

the flame smokes very badly, and in order to produce a flame without smoke the height of the cylinder G would have to be increased to such an extent that it would be impracticable for the purpose for which my apparatus is designed.

When the foraminous shell C is lifted off from the lamp free access can be had to all parts of the latter, and the cylinders G and E, and also the conductor H, can easily be taken off for the purpose of cleaning the same whenever it may be desirable.

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

1. The combination, with the reservoir A and circular wick-tube, of the foraminous shell C, and the flange I, bearing against the wick-tube, and provided with the feet *f*, substantially as and for the purpose described.

2. The combination, with the foraminous shell C, the lamp A, its circular wick-tube B, the annular chimney G E, and the inner cylinder *d*, of a deflector, F, fitting said inner cylinder, substantially as and for the purpose described.

3. The combination, with the foraminous shell C, the lamp A, its circular wick-tube B, and the annular chimney G E, of a convex conductor, H, constructed and operating substantially as set forth.

4. The combination, with the foraminous shell C, the lamp A, its circular wick-tube B, and the annular chimney G E, of a top frame, D, provided with ribs *i* for supporting the inner cylinder E of the chimney, substantially as shown and described.

5. In a petroleum cooking-stove, the combination, with the top frame D, of ogee-shaped ribs *h i*, for facilitating the adjustment of vessels of various sizes, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 24th day of November, 1876.

FREDRICK HILDEBRANDT.

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.