C. F. A. HINRICHS & C. REISTLE.

LAMP.

No. 186,732. Patented Jan. 30, 1877.

Fig. 1.

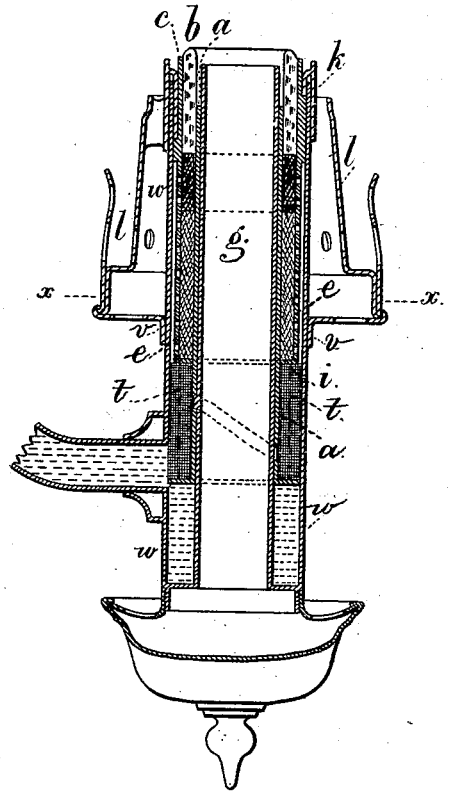



Fig. 2.

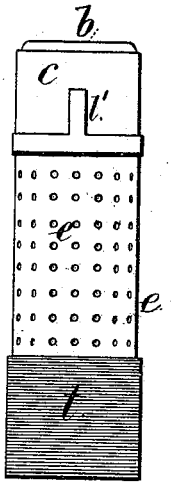
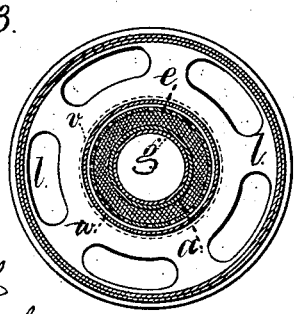



Fig. 3.




Witnesses.

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# UNITED STATES PATENT OFFICE.

CHARLES F. A. HINRICHS AND CHARLES REISTLE, OF BROOKLYN, NEW YORK, ASSIGNORS TO SAID HINRICHS.

## IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. **186,732**, dated January 30, 1877; application filed November 16, 1876.

*To all whom it may concern:*

Be it known that we, CHARLES F. A. HINRICHS and CHARLES REISTLE, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Lamps, of which the following is a specification:

This invention relates especially to the Argand wick, and the same is an improvement upon the device patented to C. F. A. Hinrichs, No. 178,774. In the said patent the mineral composition forming the wick is placed in a metallic ring or annular holder that is removable from the wick-tube, and the interior auxiliary air-tube can be raised or lowered to regulate the flame. In our present invention the mineral composition forming the wick is within a metallic holder that can be raised or lowered in the same manner as the ordinary wick in an Argand or student lamp, and a packing is employed within the wick-tube to prevent the overflow or the accidental spilling of the oil from the space around the wick.

In the drawing, Figure 1 is a vertical section of the lamp-burner complete. Fig. 2 is an elevation of the wick and wick-holder, and Fig. 3 is a sectional plan at the line *x x*.

There is a metal tube, *a*, within the composition porous wick *b*, and a case or tube, *c*, outside the same, leaving the mineral composition exposed at the upper end. This is somewhat similar to that in the aforesaid patent of C. F. A. Hinrichs. We find that a composition made of asbestus, plaster-of-paris, and sugar, as in Patent No. 179,049, with an admixture of the material known as "mineral wool," referred to in Patent No. 183,036, answers for this porous composition wick, and that it is preferable to either of the wicks made under either of said patents, especially when the sugar is dissolved in water, or the composition mixed with molasses, so as to be adhesive when mixed, and uniformly porous when the sirup has been burned out by the heat to which the composition wick is subjected.

The capillary portion of the wick below the stationary mineral ring may be of fibrous material, as in said Patent No. 178,774; but we prefer and use the perforated cylindrical extension *e*, which is below the tube *c*, and preferably a portion thereof, and there is a packing within the tube *e*, and between that and the tube *a*, and this packing is either asbestus or mineral wool next to the porous mineral ring *b*, and the remainder of the space between *a* and *e* may be filled with such mineral fiber; or it may receive a packing of cotton or other fiber, and a ring, *i*, inserted at the bottom between *a* and *c*, serves to close the wick-space and retain the fibrous material.

The tube *a* fits outside the air-tube *g* of the lamp, and there is to be a screw-thread upon said tube *g*, taking a thread upon the tube *a*, whereby the wick can be raised or lowered, as usual, and the sleeve *k* and chimney-holder *l* connect with the wick-tube by the notches of the sleeve *k* setting upon lugs or ribs *l'* upon the outer tube *c* of the wick, or in any other convenient manner, so that the wick and its tubes can be revolved to raise or lower the same and expose more or less of the inner portion of the mineral wick above the air-tube, and thereby increase or diminish the flame. Around the tube *c* there is a packing of porous material, *t*, preferably of worsted or cotton thread wound upon the same. This packing is of a size to fit the inside of the tube *w*, and thereby check the upward flow of the oil, so as to prevent the oil running rapidly out of the lamp if the lamp is upset, and also to prevent the overflow of oil if the lamp is tipped in moving it from one place to another. The sleeve *k*, instead of being made tubular and extending down around the outside of the wick-tube *w*, as usual, is only the length sufficient for the slots that receive the lugs or ribs *l'* upon the wick case or tube *c*, and there is a ring-guide, *v*, at the lower part of the chimney-holder, to surround the tube *w* and steady the chimney and holder. The object of this feature is to lessen the heat conducted down the tube *w*, so as to keep the lamp cooler. The exterior of the tube *w*, not being covered, is cooled by the ascending currents of air.

We claim as our invention—

1. In an Argand burner, the metallic holder for the mineral wick, composed of two tubes, the outer one of which is perforated, in com-

bination with the mineral wick at the upper end, and the filling of fibrous material between the tubes, substantially as set forth.

2. In an Argand burner, a permanent mineral wick, in combination with the metallic wick-holder, and the screw for raising and lowering the wick, substantially as set forth.

3. The non-combustible lamp-wick made of mineral wool, with plaster, asbestus, and sugar, or their equivalents, substantially as set forth.

4. An Argand lamp-wick formed of the non-combustible porous ring *b* between the metallic tubes *a* and *c*, in combination with the fibrous packing, also between said tubes *a* and *c*, substantially as set forth.

5. The combination, with the Argand lamp-wick, wick-tube *w*, and air-tube *g*, of the packing *t*, surrounding the wick-tube *a*, for the purposes and substantially as set forth.

6. The combination, with an Argand burner having a cylindrical wick-tube, *w*, of the chimney-holder provided with a short sleeve, *k*, at the upper end, connecting with the tube *c* of the Argand wick, and the perforated ring-guide *v* at the lower end of the chimney-holder, around the wick-tube *w*, to steady the chimney-holder, substantially as set forth.

Signed by us this 14th day of November, A. D. 1876.

C. F. A. HINRICHS.
CHS. REISTLE.

Witnesses:
GEO. T. PINCKNEY,
HAROLD SERRELL.