

(No Model.)

C. A. EVARTS.
CENTRAL DRAFT LAMP.

No. 389,371.

Patented Sept. 11, 1888.

Fig. 1.

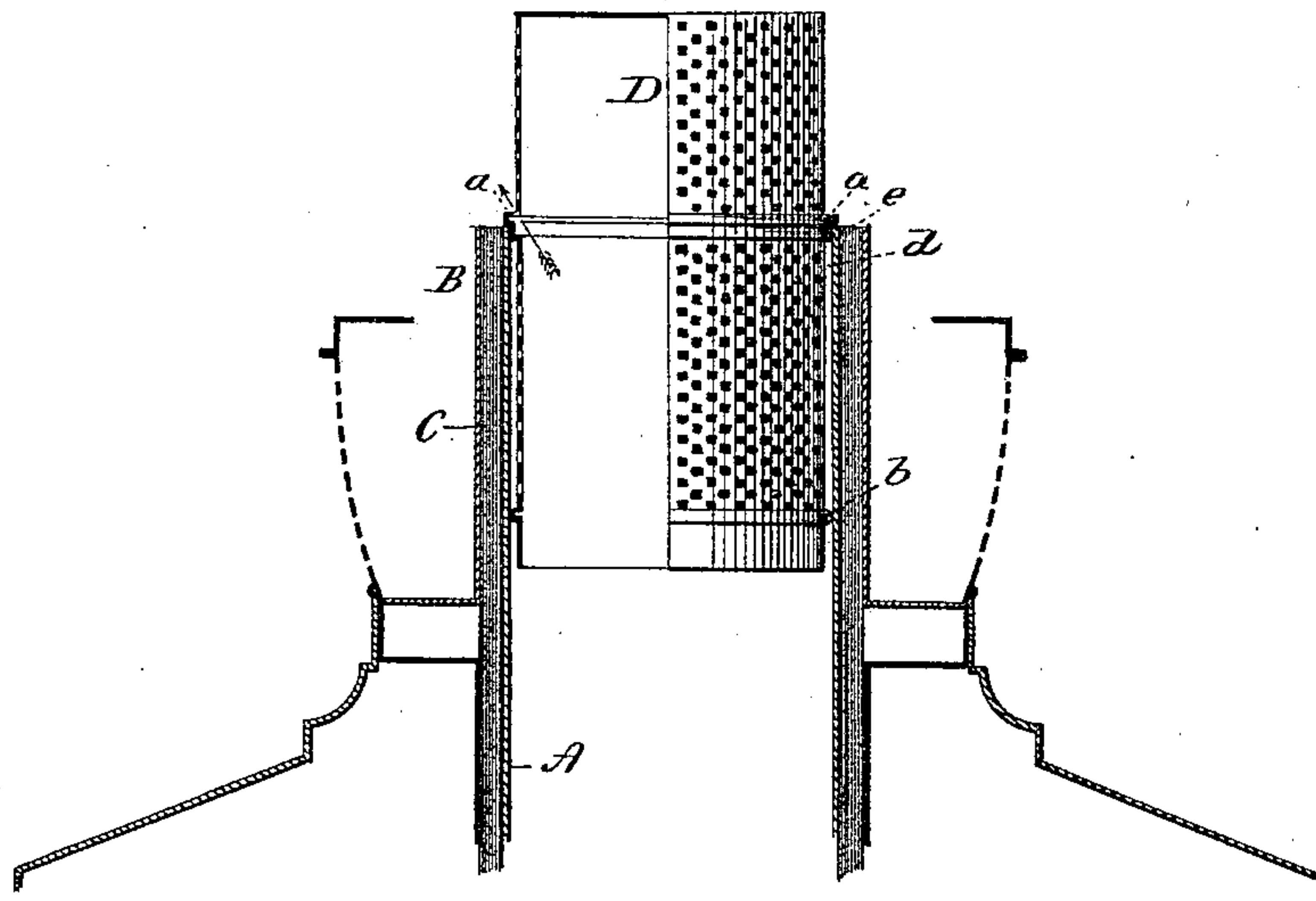


Fig. 2.

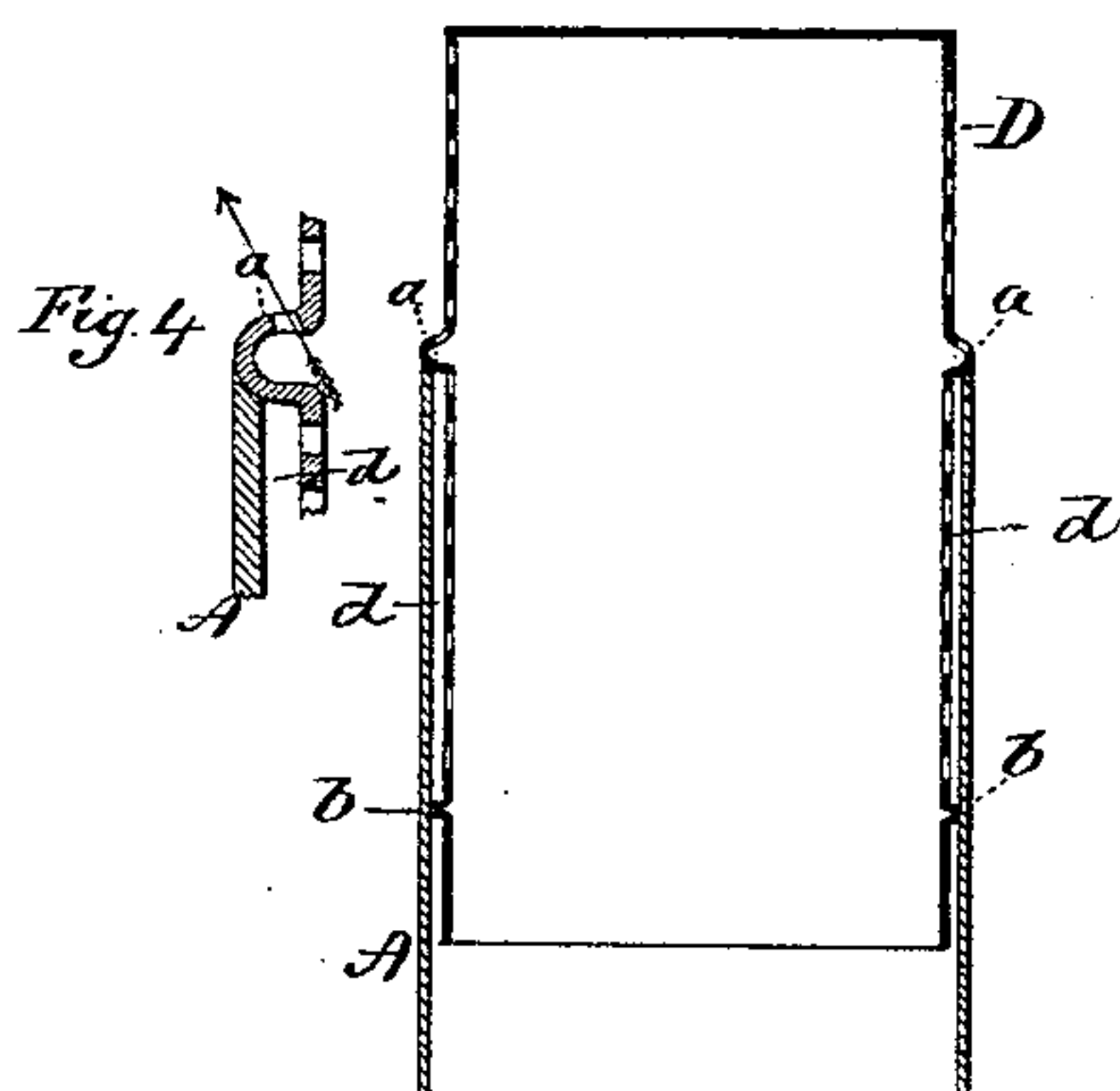
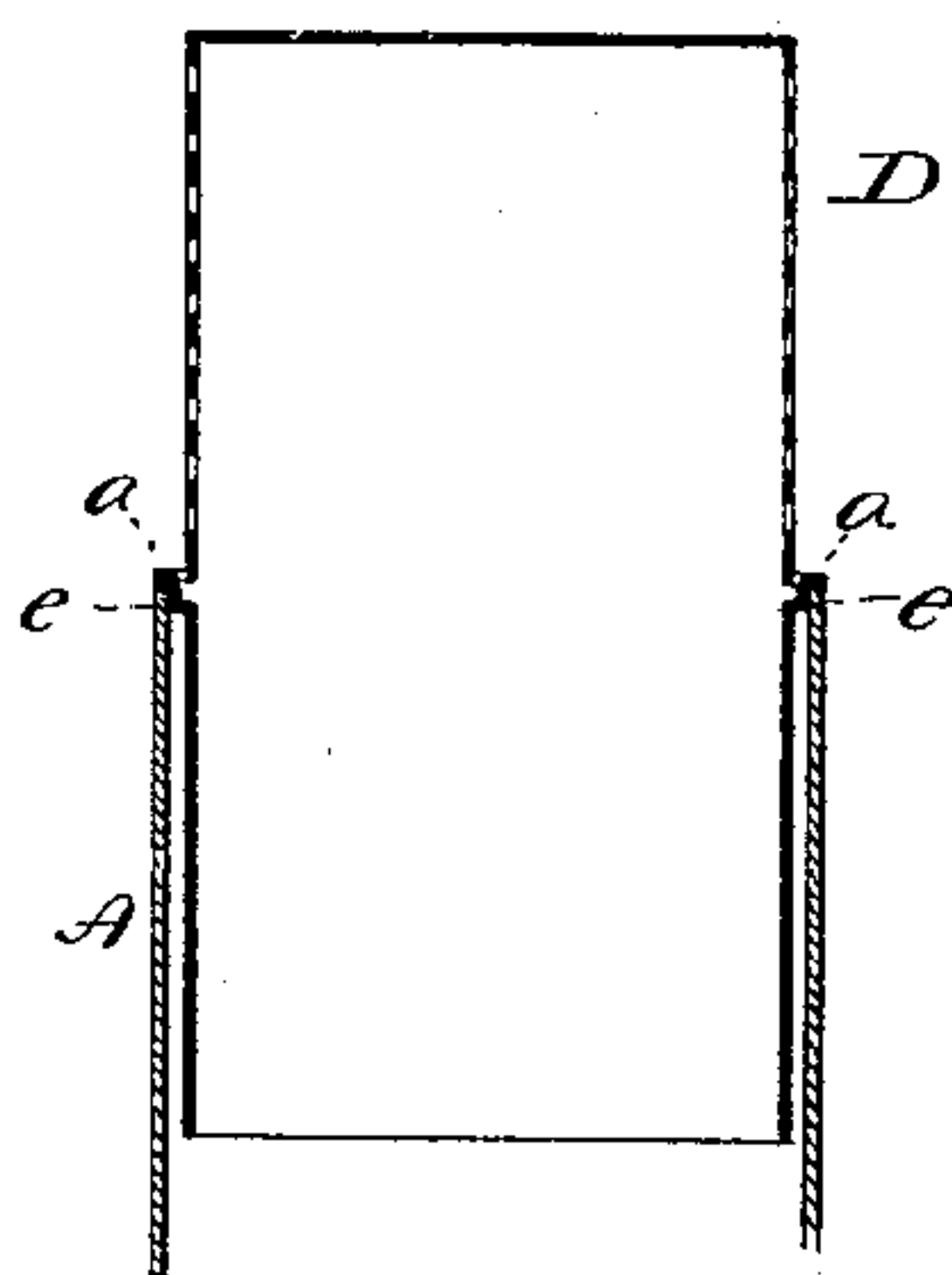


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES A. EVARTS, OF MERIDEN, CONNECTICUT, ASSIGNOR TO THE BRADLEY & HUBBARD MANUFACTURING COMPANY, OF SAME PLACE.

CENTRAL-DRAFT LAMP.

SPECIFICATION forming part of Letters Patent No. 389,371, dated September 11, 1888.

Application filed February 16, 1888. Serial No. 264,257. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. EVARTS, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Central-Draft Lamps; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a vertical central section of the tubular portion of the lamp, with half-section and side view of the thimble in place; Figs. 2 and 3, modifications in the construction of the thimble; Fig. 4, an enlarged view illustrating the bead as of semicircular shape in vertical section.

This invention relates to an improvement in that class of lamps in which a tubular wick is employed surrounding a central tube, which said tube forms a passage for the supply of air within the flame, commonly called "central-draft lamps," and particularly to lamps of this character in which the said central tube is provided with a thimble adapted to set into the upper end of the said central tube and project above the end of the wick, so as to stand within the flame, the sides of the said thimble perforated, so that air which passes up through the central tube is distributed laterally through the said perforations into the flame.

The object of this invention is to make the said thimble easily removable—as for the purpose of trimming—to avoid substantially the communication of heat through the thimble to the tube below, to insure a perfectly concentric location of the said thimble within the tube, and also to insure the injection of a full supply of air into the base of the flame; and it consists in the construction hereinafter described, and more particularly recited in the claim.

In illustrating the invention I do not deem it necessary to show the entire burner, but only so much of the burner and lamp as are necessary to the full understanding of the invention, as burners to which this invention is applicable are numerous.

A represents the central tube, and B the surrounding tube, forming a concentric chamber

between them, in which the wick C is arranged, all in the usual and well-known manner.

D represents the thimble, which is of an external diameter less than the internal diameter of the central tube, A, and of a length greater than the projection required for the upper end of the thimble. This thimble is closed at its upper end, and its sides are perforated in the usual manner for the perforated thimble of this class of lamps.

Around the outer surface and distant from the upper end of the thimble, corresponding to the projection of the thimble required, I form an annular bead, *a*, of a diameter somewhat greater than the internal diameter of the tube A, and preferably I construct this bead with a shoulder, *e*, reducing the lower part of the bead to a diameter corresponding to the internal diameter of the tube, and so that when the thimble is set into the tube the said shoulder will rest upon the upper end of the tube as a support for the thimble and the portion of the bead below the shoulder will serve to concentrically locate the thimble in the tube. The thimble extends down into the tube, and at or near its lower end I preferably form an annular bead or projection, *b*, slightly less in external diameter than the internal diameter of the tube A, and so that the said enlargement *b* will permit the thimble to fall into the tube without substantial contact therewith. Preferably the perforations extend down to near the lower end of the thimble, the perforations below the bead *a* opening into the space *d* between the thimble and inner surface of the tube. The extension of the thimble down into the tube and its enlargement *b* aids in retaining the thimble in its concentric position—that is, prevents its being thrown out of its direct axial line.

The space *d* acts as a cooling chamber around the thimble within the central tube and serves as a non-conductor of heat between the thimble and central tube, or serves to keep the upper end of the tube cool, thereby avoiding detrimental effect of heat upon the wick.

The bead *a* may be made of semicircular form in vertical section, as seen in Fig. 4, and the upper end of the tube correspondingly recessed or countersunk, which will serve to locate the

thimble in the tube; but I prefer to form the bead with a shoulder, *e*. The bead *a* is best formed by making a corresponding impression upon the inner side of the thimble, so that there
 5 will be a groove around the inside of the thimble at the base of the flame. Through the upper side of this bead perforations *f* are formed, like the perforations in the body of the thimble; but while the perforations in the body of
 10 the thimble direct the air laterally into the flame, the perforations *f* in the bead turn the air obliquely into the flame and so that an injection of air to the flame is made directly at its base and in an upwardly-inclined direction,
 15 as indicated by arrows in Fig. 4. This supply of air to the base of the flame through the perforations *f*, giving an upward inclination to the current, has the practical result of increasing to a very considerable extent the illuminating
 20 power of the flame over what the thimble would do without such perforations.

The projection *b* at the lower end of the thimble may be omitted, and the thimble does not require to be perforated below the bead *a*, and,
 25 as seen in Fig. 3, in this case there is substantially the same space, *d*, between the inner tube and the thimble to prevent the communication of heat directly from the thimble to the interior of the tube A.

30 From the foregoing it will be understood that I do not claim, broadly, the arrangement of a thimble in the inner tube of a central-draft lamp, the said thimble projecting above the end of the tube and perforated so as to form

substantially a continuation of the said cen- 35 tral tube, the said perforations serving to throw the air which passes up through the central tube laterally into the flame.

I do not claim, broadly, a perforated thimble of a central-draft lamp constructed to be sup- 40 ported on the upper end of the central tube; neither do I claim, broadly, the thimble constructed with an annular bead formed therein as a part of the thimble, as such, I am aware, is not new; but 45

What I do claim is—

In a central-draft lamp having the inner central air-tube, A, the combination therewith of a thimble, D, of less external diameter than the internal diameter of the tube, the said thimble 50 closed at its upper end and constructed with an annular bead, *a*, below its upper end, of larger external diameter than the internal diameter of the said central tube, the said bead producing a corresponding groove upon the 55 inner side of the thimble, and the said bead perforated upon its upper side outside the outer surface of the body of the thimble, the sides of the thimble above the bead perforated, the said bead adapted to seat the thimble on the 60 upper end of the inner tube, and the thimble extending down into the inner tube below the said bead, substantially as described.

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