

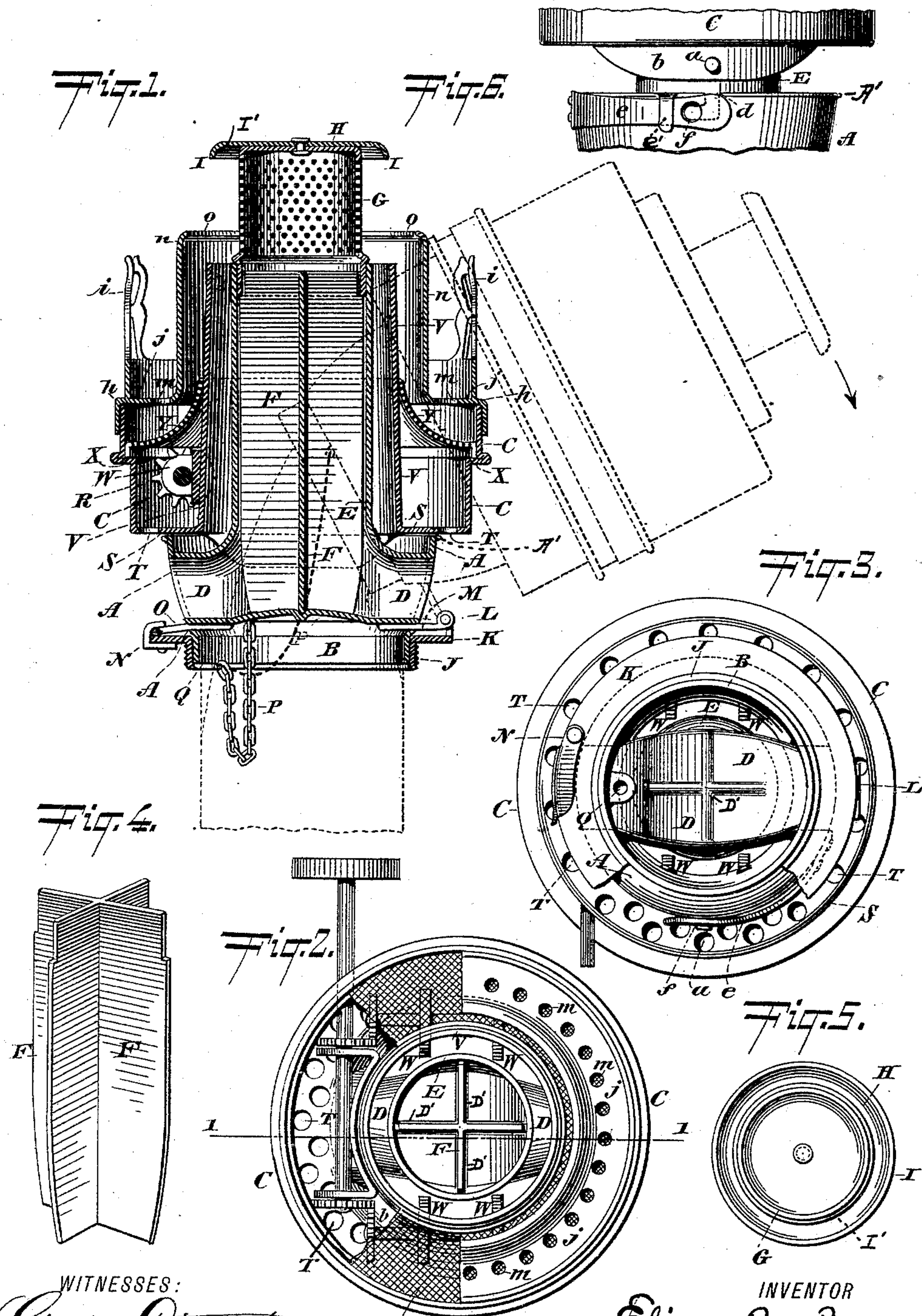
(No Model.)

2 Sheets—Sheet 1.

E. B. REQUA.
LAMP BURNER.

No. 488,973.

Patented Dec. 27, 1892.



WITNESSES:
Gustav Dietrich
R. A. Porteous

INVENTOR
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 7.

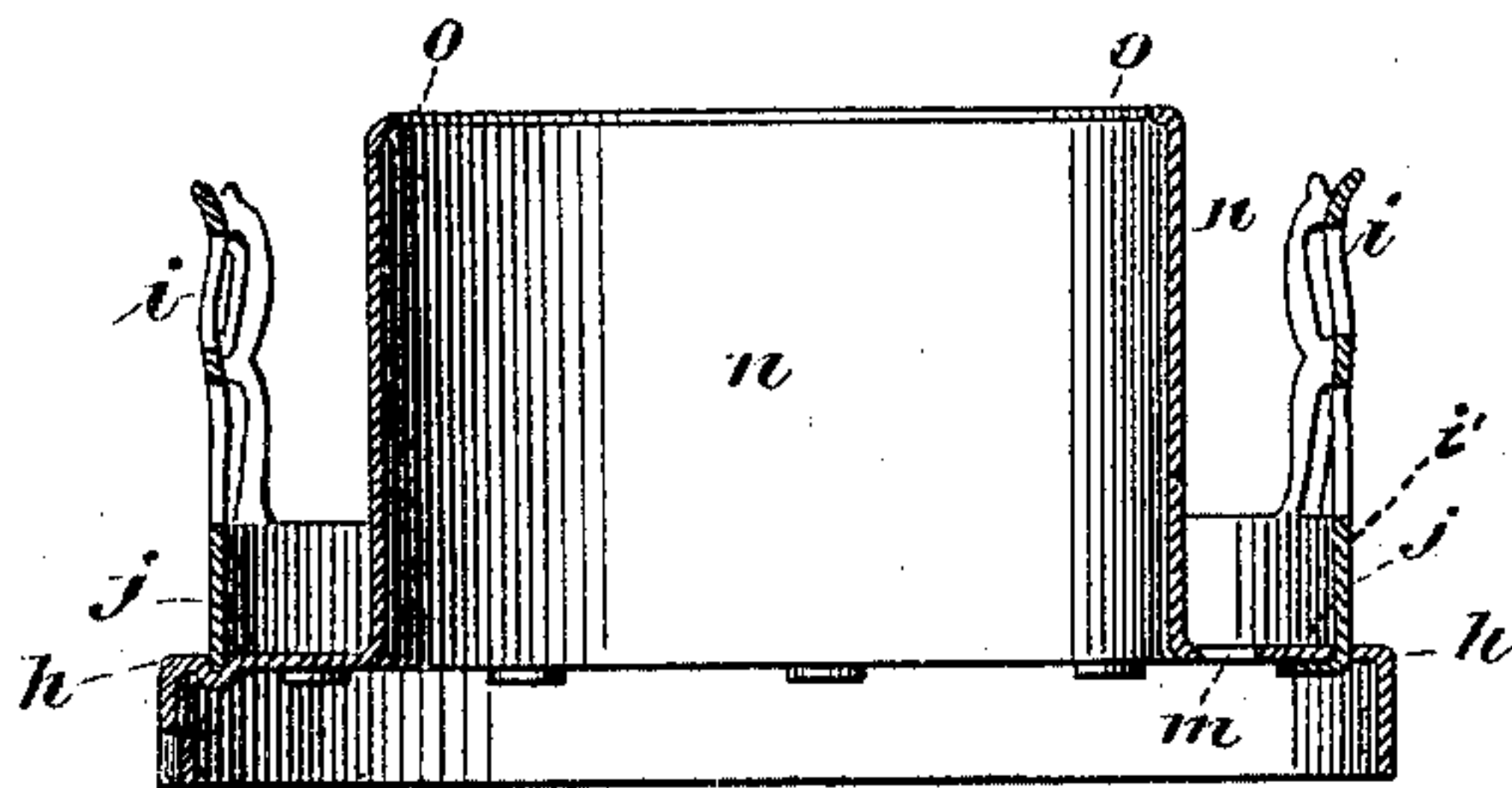


Fig. 8.

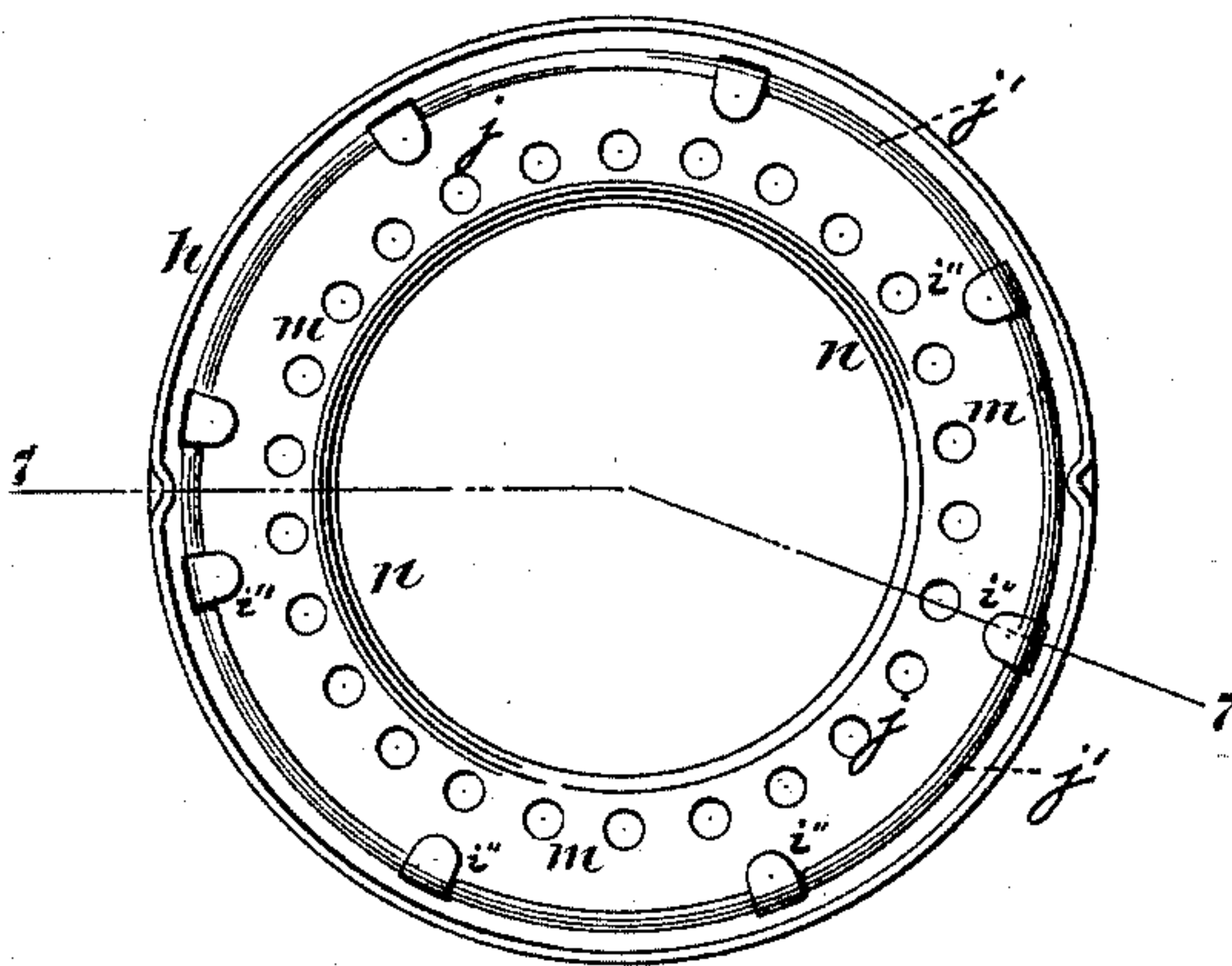
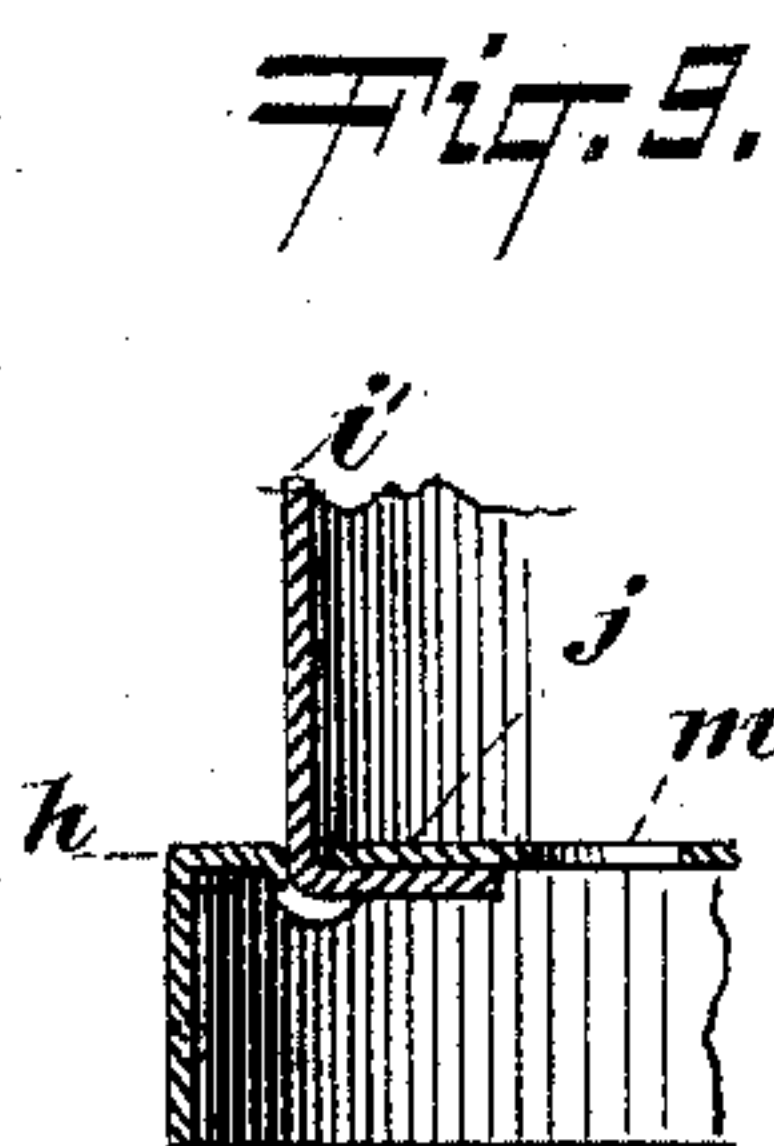


Fig. 10.

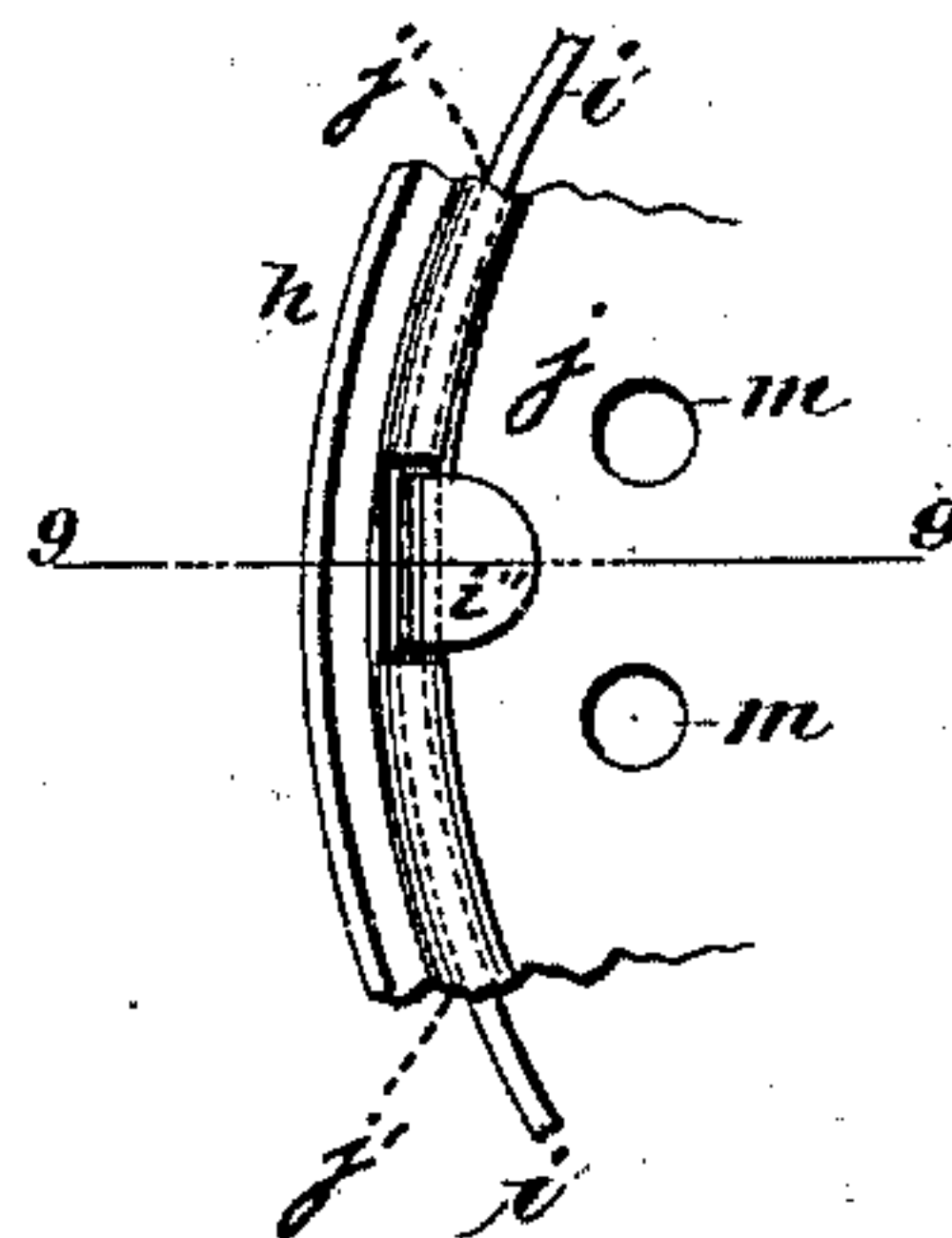
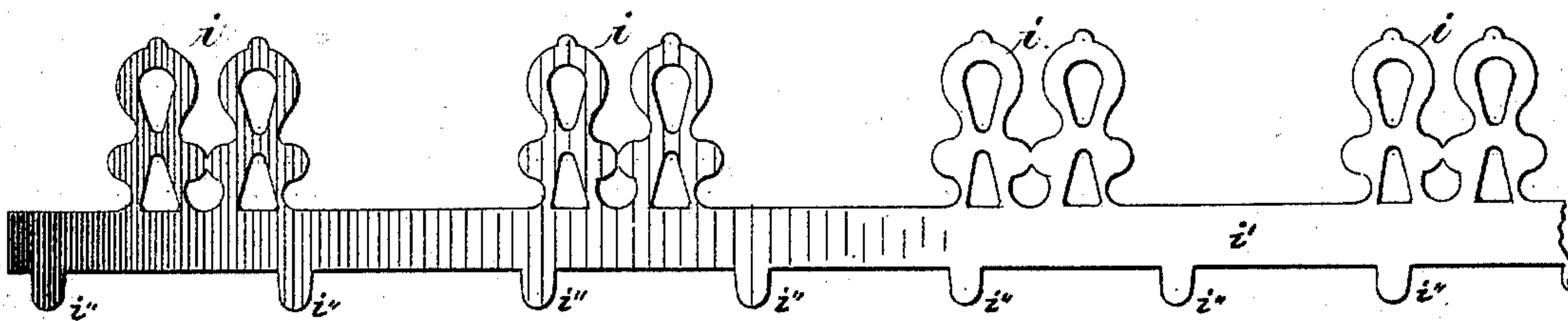


Fig. 11.



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UNITED STATES PATENT OFFICE.

ELIAS B. REQUA, OF JERSEY CITY, NEW JERSEY.

LAMP-BURNER.

SPECIFICATION forming part of Letters Patent No. 488,973, dated December 27, 1892.

Application filed April 30, 1891. Serial No. 391,078. (No model.)

To all whom it may concern:

Be it known that I, ELIAS B. REQUA, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Lamp-Burners, of which the following is a specification.

The invention relates to improvements in lamp burners, and consists in the central draft burner hereinafter described and claimed.

The object of the invention is to produce a burner which is simple and durable, and in which the drafts are so controlled that a pure steady flame of special illuminating quality is secured. The construction of the burner is such, also, that its parts may be readily detached from each other when desired, and that the burner fount may be filled with oil without entirely removing the burner therefrom.

Referring to the accompanying drawings forming a part of this specification Figure 1 is a central vertical section of the burner constructed in accordance with the invention, the dotted lines illustrating the position of the burner when it is tilted over to permit the filling of the burner fount; Fig. 2 is a top view of same, the flame deflector at the top of the central draft tube and some of the other upper parts of the burner being broken away to disclose the interior construction; Fig. 3 is a bottom view of the burner; Fig. 4 a detached perspective view of a draft controlling device which occupies the central draft tube of the burner; Fig. 5 a bottom view of the draft diffuser and flame deflector which rest upon the upper end of the central draft tube; Fig. 6 is a detached side view of a part of the burner, showing the joint by which the upper and lower parts of the burner may be secured together; this view shows the upper and lower parts of the burner in position ready to be pushed together, the pin on the upper part being over and in condition to enter the angular slot formed in the lower part; Fig. 7 is a detached vertical section of the chimney or globe holder and flame dome, said section being on the dotted line 7—7 of Fig. 8, which is a bottom view of said holder; Fig. 9 is an enlarged detached section of an edge portion of said holder, said section being on the dotted line 9—9 of Fig. 10, which is an enlarged

bottom view of said portion of said holder, and Fig. 11 is a detached side elevation of the strip of metal constituting the chimney or globe spring holding fingers.

In the accompanying drawings A designates a cylinder having a contracted flange B at its lower edge and supporting at its upper edge the burner base C. The cylinder A is connected with and supports the transverse tubes D, D, and vertical central draft tube E, and is entirely open on opposite sides of said transverse tubes D, D, as shown in Fig. 3, to form spaces for the reception of the lower bifurcated ends of the wick, which is shown by dotted lines in Fig. 1. This wick is of the usual kind made circular or tubular at its upper end and split or bifurcated at its lower end. The vertical central draft tube E contains the draft controller frame F, shown detached in Fig. 4, which frame forms cross partitions within the tube E and prevents the draft from rushing through the transverse tubes D, D, and forming a twisting or spiral or irregular current up through the tube E. The frame F controls and subdues the central draft and thereby maintains steadiness in the flame and improves its illuminating quality. Upon the upper end of the central draft tube E is placed the cylindrical perforated air diffuser G, whose lower edges fit within the upper end of the tube E, as shown in Fig. 1, being there supported by the annular bead G'. The upper end of the diffuser G has secured upon it the cap H which is made from a disk of sheet metal and has the horizontal annular flange I' provided with the downwardly deflecting edge I, which operates to gather the upward current of air and finally turn it downward and outward into the flame and to aid in maintaining the flame steady and in globular form. From the foregoing description it will be observed that the cylinder A supports the transverse draft tubes D, D, the vertical central draft tube E, frame F, diffuser G and cap H, and in addition has removably secured to its upper edge the burner base C, which will be hereinafter described.

The cross-partitioned frame F is set in the tube E so that one of its partitions will be in line with the longitudinal center of the transverse tubes D, D, while its other portion is at right angles to said line, as shown in Fig. 2;

and the lower end of said frame F rests within cross-grooves D' formed in the base of said transverse tubes D, which cross-grooves serve to center the frame and as a guide for the proper introduction of the frame into the tube E.

The upper edge of the cylinder A is provided with the outwardly extending flange A' which serves to strengthen the walls of said cylinder and affords a support for the burner base hereinafter described. The contracted flange B at the lower edge of the cylinder A has a smooth external surface and fits within the ring J which has its exterior surface threaded to engage the customary internal threads formed in the lamp collars which are applied upon the upper end of the ordinary burner founts. The threaded ring J when the burner is to be applied to the burner fount is screwed into the ordinary lamp collar and thereby held in place. The ring J has at its upper edge the outwardly extending horizontal flange K which at one edge supports the lug L, in an eye formed at the upper end of which is inclosed the outer end of the arm M, whose inner end is soldered or otherwise secured to the lower surface of the base of the transverse draft tube D as indicated in Fig. 1.

The link or arm M and lug L constitute a hinge by means of which when desired the burner may be tilted outward to the position indicated by dotted lines in Fig. 1.

On the flange K at a point opposite to the lug L is provided the pivoted catch N which is adapted to be turned upon the projecting end of the arm O secured at its inner end upon the lower side of the base of the transverse draft tube D; the purpose of the catch N and arm O is to afford a means whereby the lamp burner may be locked in its vertical position. The catch N is illustrated in Fig. 1 as turned upon and holding down the arm O, but when it is desired to tilt the burner to the position indicated by dotted lines it is simply necessary to turn the catch N outward upon its pivot, thereby freeing the arm O and permitting the burner to be turned upward on the hinge formed by the lug L and arm M. In order to prevent the burner from being tilted upward too far, I have provided the chain P which hangs loosely, as seen in Fig. 1, when the burner is in its vertical position, and which when the burner is tilted over, will pass upward with the transverse tubes D, D, and prevent the burner from moving unduly. One end of the chain P is secured to the ring J while the upper end of the chain is secured to the lower surface of the transverse tubes D, D; the ring J is provided with an eye Q to receive the lower end of the chain P. The chain P supports the burner when the latter is tilted upward, as shown by dotted lines, and thus renders convenient the filling of the fount with oil without entirely detaching the burner. The upper end of the chain P and the inner ends of the arms M, O, are secured

to the lower surface of the base of the tubes D, D, and hence these parts do not mar the appearance of the burner nor obstruct the free passage of the air into and through the said tubes D, D.

The burner base C is provided with the cylindrical walls R and horizontal lower portion S having the draft apertures T which extend in a circle around the burner base and permit the external currents of air to pass within the burner. The burner base C is also provided and is preferably made integral with the wick tube V which extends upward to a point upon a horizontal line with the upper end of the inner central draft tube E, as shown in Fig. 1 and has secured to its sides in suitable bearings the wick raising wheels W which are arranged in pairs at opposite sides of the wick tube V as indicated in Fig. 3 and have their edges projecting through slots formed in the wick tube in order that they may be in constant contact with the wick, and serve the purpose of raising and lowering the same.

The vertical walls R of the burner base C are provided with the shoulder X upon which rests the foraminous plate Y through which the currents of air from the apertures T must pass prior to coming into contact with the flame. The plate Y thoroughly diffuses the currents of air and prepares them for contact with the flame. The burner base C is secured upon the upper edge of the cylinder A by means of the pins a secured to the extensions b of said burner base and the slots d cut in the upper edge of the cylinder A. At each side of the burner base are the downward segmental extensions b, each being provided with a pin a, and at each side of the cylinder A is provided a slot d, the pin and slot forming a bayonet joint. In Fig. 6 the pin a and slot d is clearly shown, the former being upon the burner base and the latter upon the cylinder A, the burner base and cylinder being slightly separated in order to indicate the position of the parts when the two are to be forced together. It will be observed upon reference to Fig. 6 that upon the burner base C being pressed downward into the cylinder A the pin a will enter the slot d and then upon the base C being turned to the left that the pin a will enter the horizontal portion of said slot and be there secured by means of the leaf spring e, which is riveted to the cylinder A and has in its end an aperture f of suitable size to receive the end of the pin a. The outer end of the spring e curls outwardly a little in order to enable the user of the lamp to conveniently elevate the end of the spring from contact with the pin a when it is desired to remove the burner base C from the cylinder A. When the burner base C and cylinder A are pressed together and turned to the left, the point of the pin a will pass beneath the spring e and pressing it outward will, upon arriving at the aperture f, pass into it, thereby permitting the spring e to snap back against the surface

of the cylinder A and retain the point of the pin *a* until such time as the user may press the spring outward from and release the pin. The entire purpose of the pin *a*, slot *d* and spring *e* is to permit the burner base C and cylinder A to be connected together and detached from each other at will. When the burner base C is detached from the cylinder A it is evident that the interior parts of the burner may be very readily cleaned.

The upper edges of the cylinder A adjacent to the slot *d*, are by the cutting of said slot rendered delicate and liable to bend easily, and to prevent this result and to strengthen the structure, I have provided the flange A' above described. This flange is of material benefit and so strengthens the upper edge of the cylinder A, that there is no danger of the same adjacent to the slots *d* being impaired by ordinary use. The spring *e* might also with careless handling, unless otherwise restrained, be pressed so far from the cylinder A as to break it therefrom, and to prevent any such occurrence the downwardly extending lip *e'* is provided; this lip is integral with the cylinder A and extending downward adjacent to the outer face of the spring *e* prevents the latter from being pressed unduly outward when being released from the pin *a* preparatory to detaching the burner base. The downward segmental extensions *b* which carry the pins *a* pass one at each side of the transverse tubes D, D, as indicated in Figs. 1 and 6.

Upon the upper edge of the burner base C is applied the annular ring *h* (shown more particularly in Figs. 7 to 11 inclusive) which passes downward over the burner base C and is integral with the horizontal chimney or globe support *j* having apertures *m* and the upwardly extending flame dome *n* whose upper edge is deflected inward forming a flange *o*. The horizontal globe or chimney support *j* is provided with the annular recess *j'* to receive the lower edge of the ring *i'*, carrying the spring chimney-holding fingers *i*. The ring *i'* is formed from a strip of sheet metal having the fingers *i* at its upper edge and the lips *i''* at its lower edge, and when said strip is bent into circular outline its lower edge will rest in the recess *j'* and its lips *i''* will pass through slots cut in the support *j* and be folded over, thereby securing the ring and fingers firmly in position. The ring *i'* made from the strip of metal is economical in its production, and when seated in the recess *j'* no air is permitted to pass beneath it. The ring *h*, support *j* and dome *n* are in one piece, and the ring *i'*, fingers *i* and lips *i''* are in one piece, and these two pieces, as shown, may be quickly secured together and are strong and durable.

Upon reference to Fig. 1 it will be observed that currents of air passing upward through the apertures T in the burner base will first be thoroughly diffused by their passage

through the foraminous plate Y and that then the said air currents will be divided, a portion of them passing upward between the outer wick tube V and the flame dome *n*, while the remaining portion of said air currents will escape upward through the apertures *m* and ascend between the exterior surface of the flame dome *n* and the inner surface of the globe or chimney resting upon the support *j*. The draft of air feeding the center of the flame enters the air tubes D, D, and thence ascends through the tube E and diffuser G to the flame. The central draft is deflected outward to the flame by the flange I on the cap H; and the outer drafts are deflected inward to the flame by the flange *o* on the flame dome *n*. The air currents are so thoroughly regulated and controlled, as to produce in the flame brilliant illuminating qualities, with the minimum consumption of oil; the flame itself is also maintained in globular form without fluctuation or flickering. The ring J enables the burner to be screwed into the usual lamp collars already in use, and permits the filling of the lamp oil fount without removing the burner therefrom. The externally threaded hinged ring J provided with the pivoted locking catch and receiving the flange on the lower end of the burner has been made the subject of a separate application for Letters Patent filed by me September 11, 1890, and bearing Serial No. 364,624, and hence in this application the claims in respect to said features are limited to elements of construction not present in said application Serial No. 364,624.

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

1. In a lamp burner the cylinder A having the transverse tubes D and central tube E, combined with the burner base C seated on the upper edge of the cylinder A and having the wick tube V completely encircling and extending upward to the upper end of the tube E, and the cross-partitioned frame F resting upon the base of the tubes D and extending upward to the upper portion of the tube E; substantially as set forth.

2. In a lamp burner the cylinder A having the transverse tubes D and central tube E extending upward from said tubes D, combined with the burner base C detachably secured on the upper edge of the cylinder A and having the wick tube V encircling and extending upward to the upper end of the tube E, the perforated diffuser G on the upper end of the tube E, and the cap H on said diffuser and forming the horizontal flange I' and downwardly deflecting edge I; substantially as and for the purposes set forth.

3. In a lamp burner the cylinder A having tubes D, E and flange B, and the burner base C attached to said cylinder, combined with the externally threaded ring J fitting said flange and having the flange K, the catch N pivoted to the flange K, the arms M, O, secured to the lower surface of the base of the

tubes D, and the lug L to which the arm M is hinged; substantially as and for the purposes set forth.

4. In a lamp burner the cylinder A having tubes D, E and flange B, and the burner base attached to said cylinder, combined with the externally threaded ring J fitting said flange and having the flange K, the catch N pivoted to the flange K, the arms M, O, secured to said cylinder, the lug L to which the arm M is hinged and the chain P secured at one end to the ring J and at the other to the cylinder A; substantially as and for the purposes set forth.

5. In a lamp burner the cylinder A having the transverse tubes D and central tube E, extending upward from said tubes D, combined with the burner base C detachably secured on the upper edge of the cylinder A and having the wick tube V encircling and extending upward to the upper end of the tube E, the cross-grooves D' in the base of the tubes D, and the cross-partitioned frame F fitting the tube E and detachably resting in the grooves D'; substantially as and for the purposes set forth.

6. In a lamp burner, the cylinder A, the burner base C detachably secured on the upper edge of said cylinder, and the draft and wick tubes carried by said cylinder and burner base, combined with the ring *h*, perforated support *j* and dome *n*, all integral and detachably secured to the said burner-base, the annular recess *j'* and the ring *i'* secured in said recess and having the fingers *i* at its upper edge and the securing lips *i''* at its lower edge; substantially as and for the purposes set forth.

7. In a lamp burner the cylinder A having the transverse tubes D and vertical tube E, combined with the burner base C having the tube V terminating at the upper end of the tube E, the segmental extensions *b* at opposite sides of the said burner base, the pins *a* secured to said extensions, and the angular slots *d* cut in said cylinder to receive said pins; substantially as shown and described.

8. In a lamp burner the cylinder A and the tubes D, E, carried thereby, combined with the burner base C attachable to the upper end of said cylinder, the single tube V carried by said burner base and terminating at the upper end of the tube E, the perforated air diffuser G on the upper end of said tube E, the cap H upon said diffuser and extending outward beyond the vertical edges of the same, and the cross-partitioned frame F within the tube E; substantially as and for the purposes set forth.

9. In a lamp burner the cylinder A having the flange B, and the tubes D, E, carried by said cylinder, combined with the threaded ring J hinged to the lower end of said cylinder, the burner base C attachable to the upper end of said cylinder, the tube V carried by said burner base, and the globe support; substantially as and for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 28th day of April, A. D. 1891.

ELIAS B. REQUA.

Witnesses:

CHAS. C. GILL,
ED. D. MILLER.