

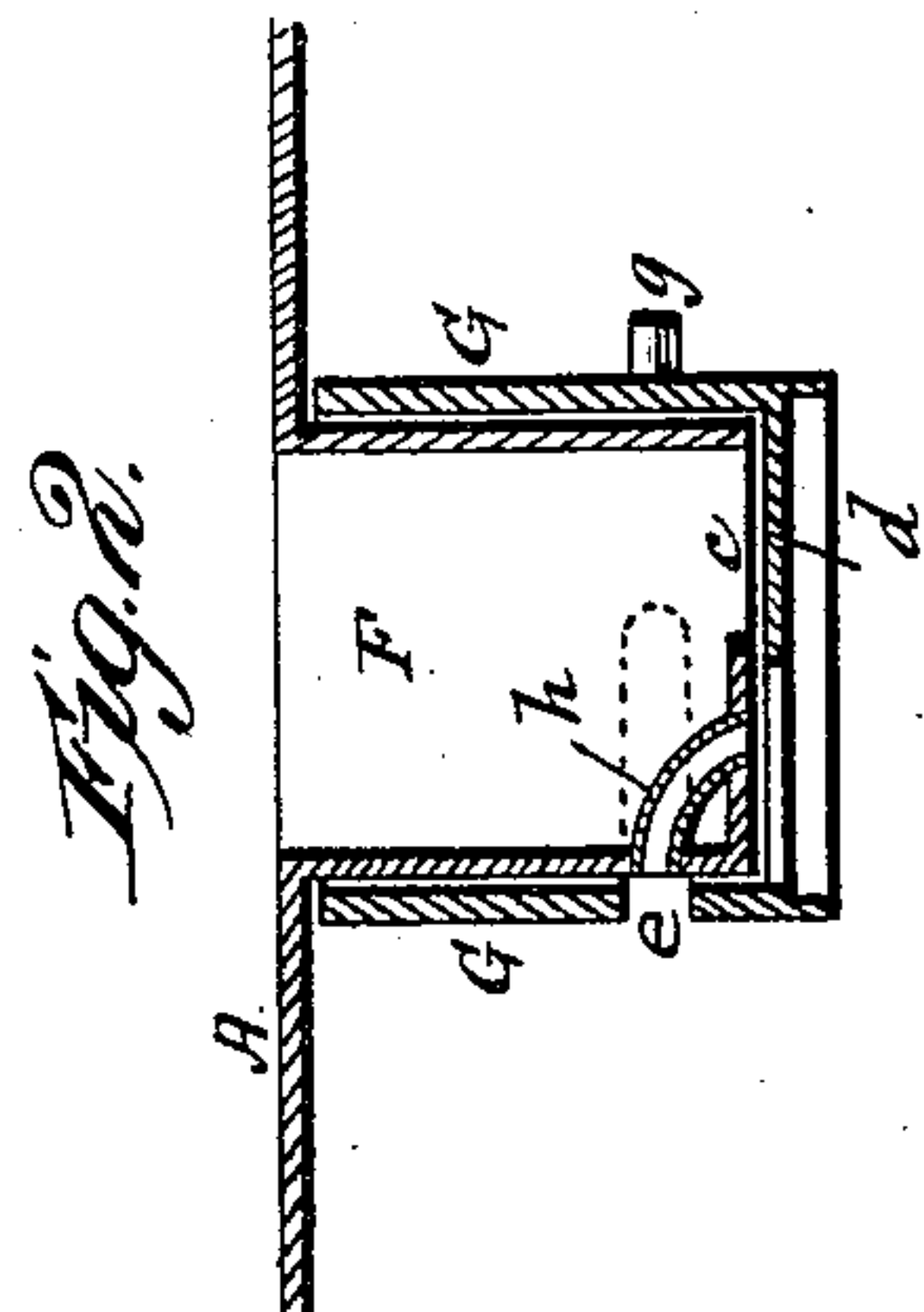
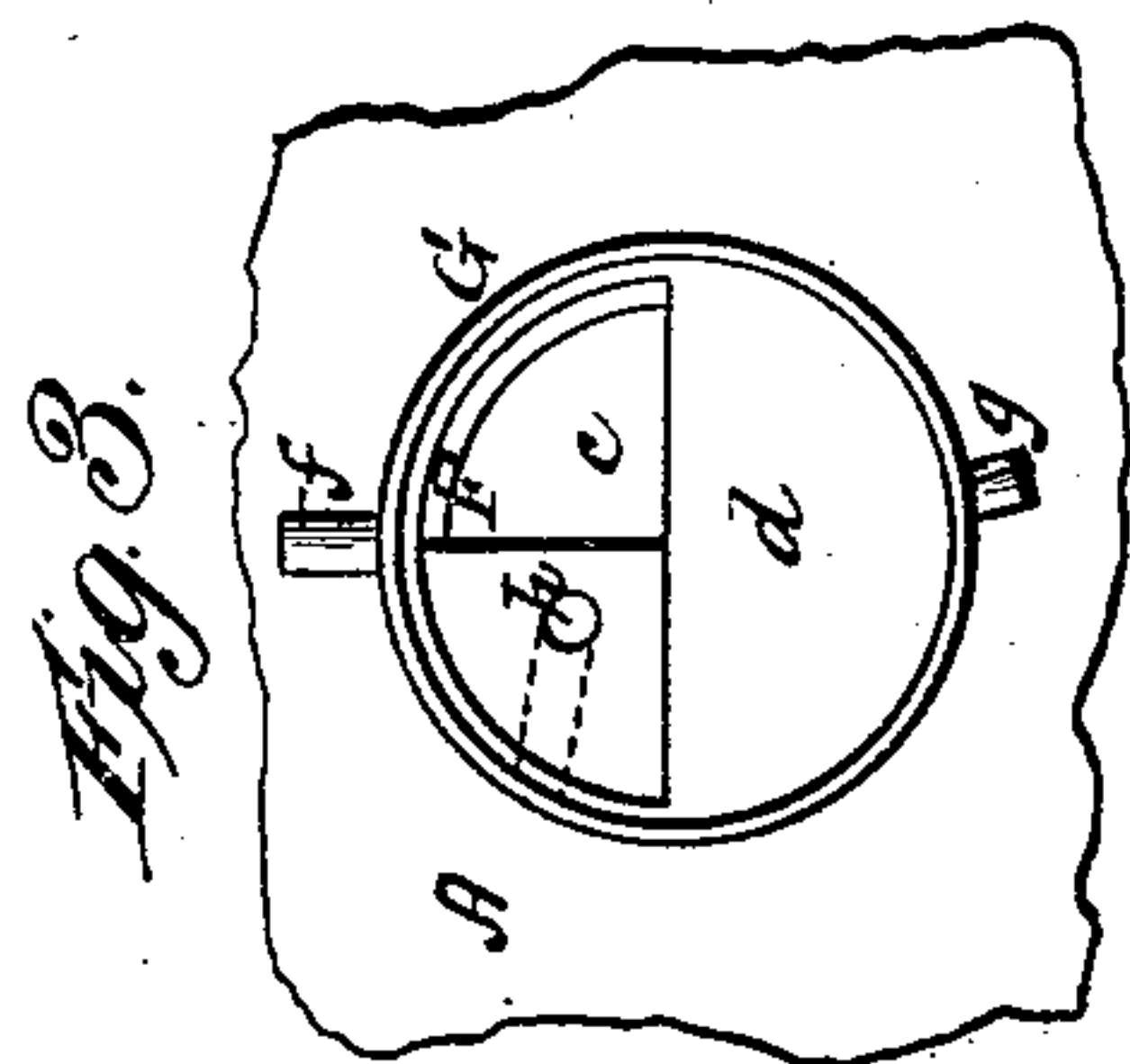
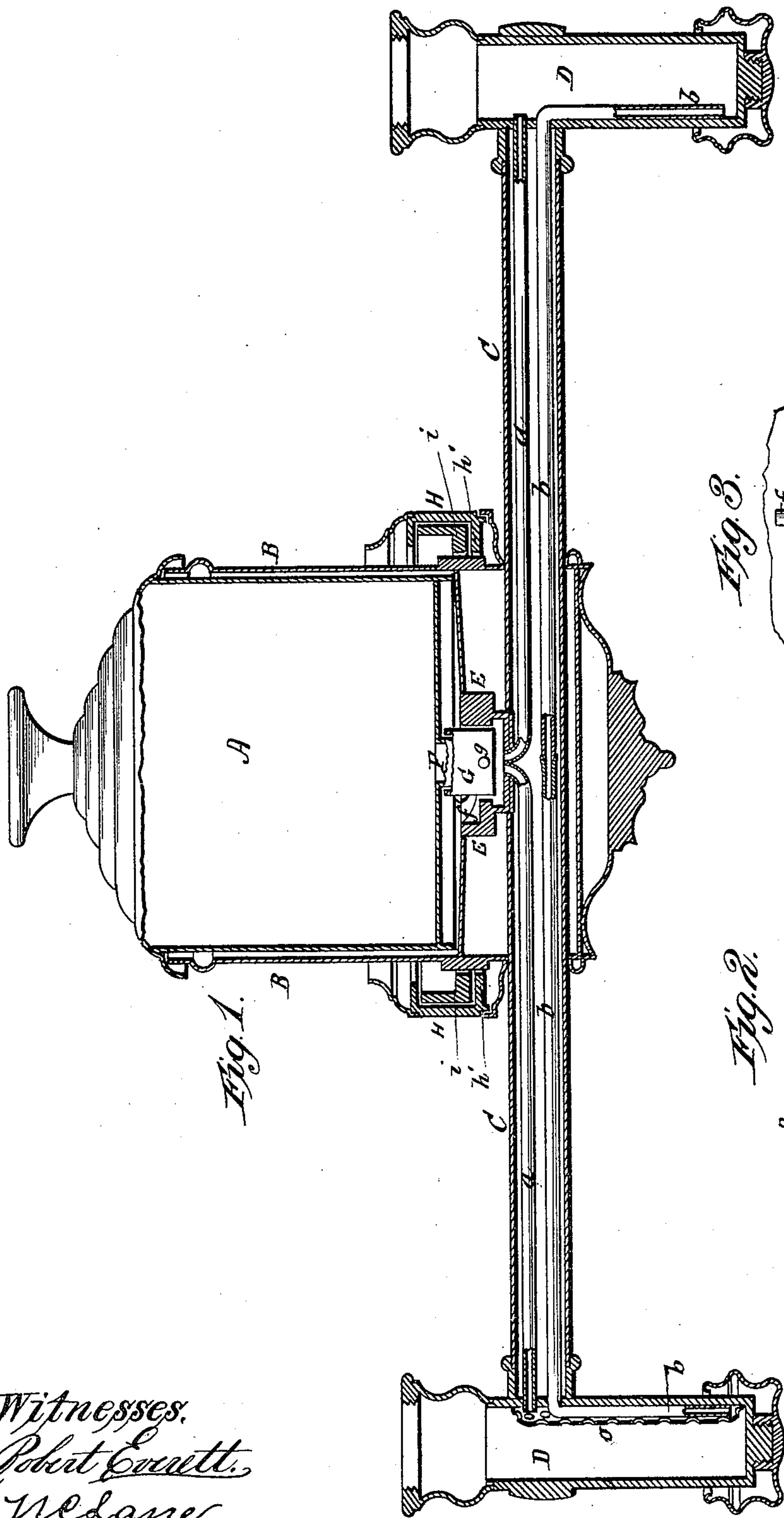
(No Model.)

2 Sheets—Sheet 1.

W. H. SMITH.
Lamp.

No. 238,450.

Patented March 1, 1881.



Witnesses:
Robert Everett.
W. Lane.

Inventor:
William H. Smith
by M. Bailey
his Attorney.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

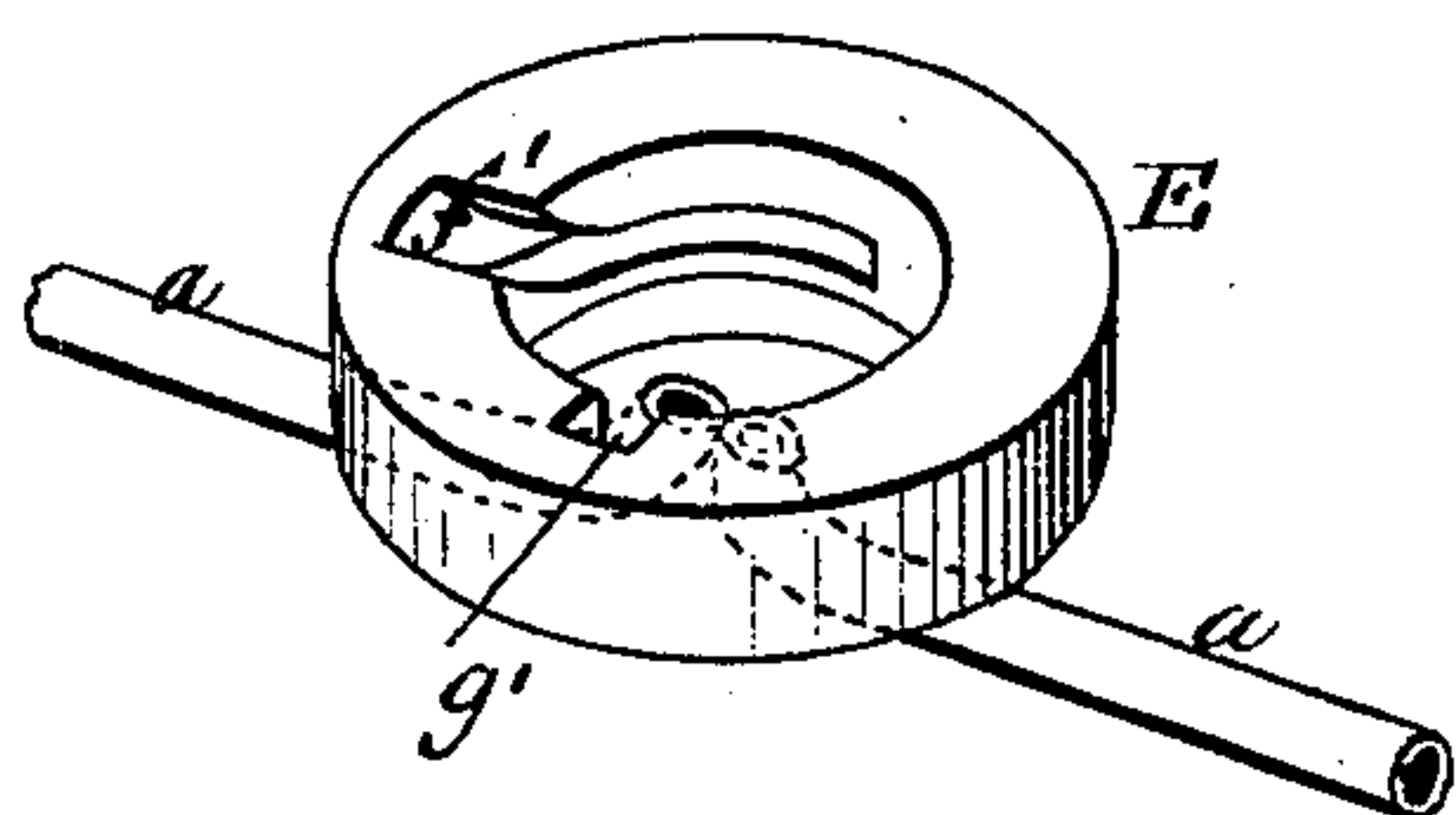


Fig. 5.

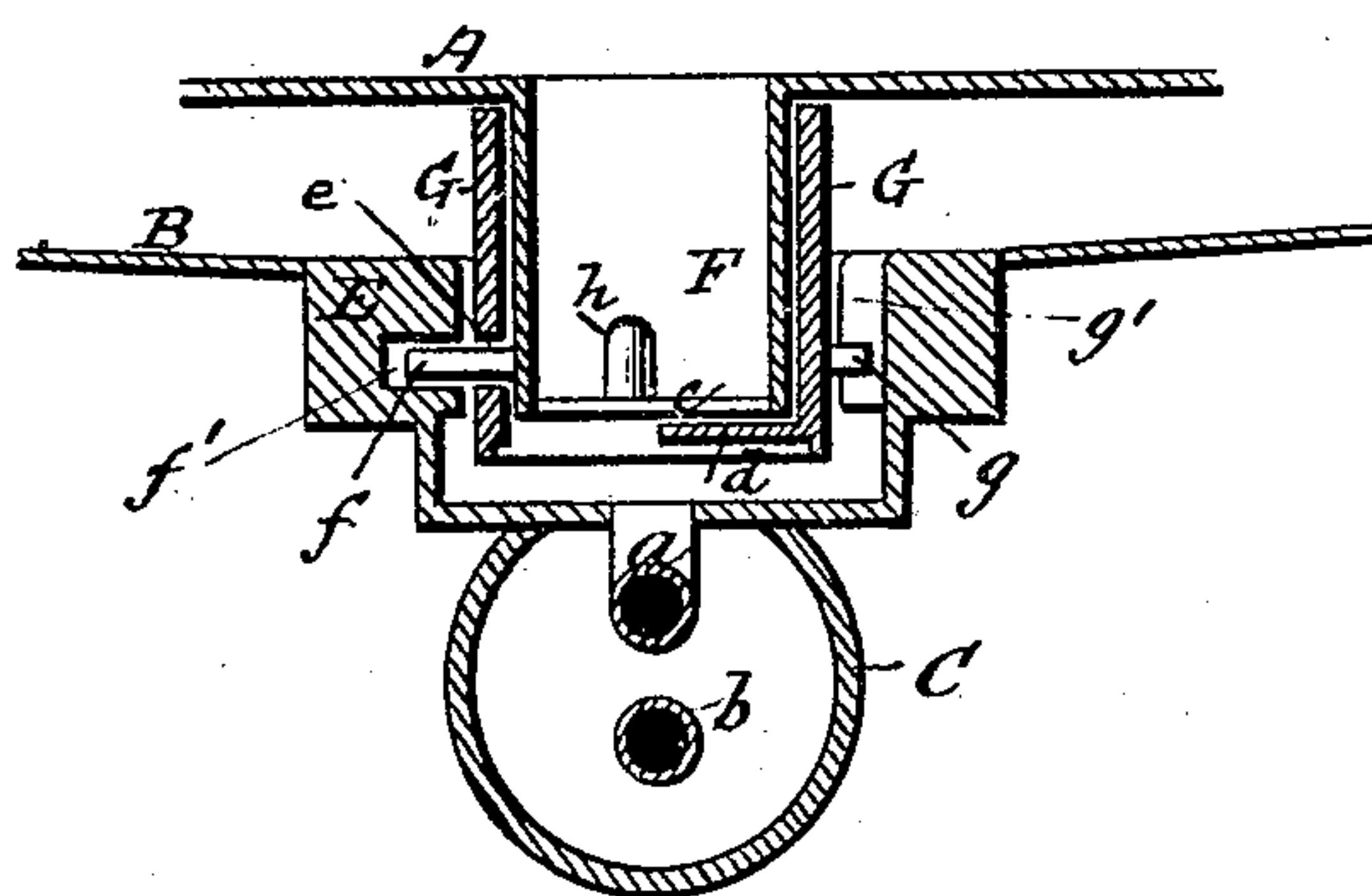


Fig. 6.

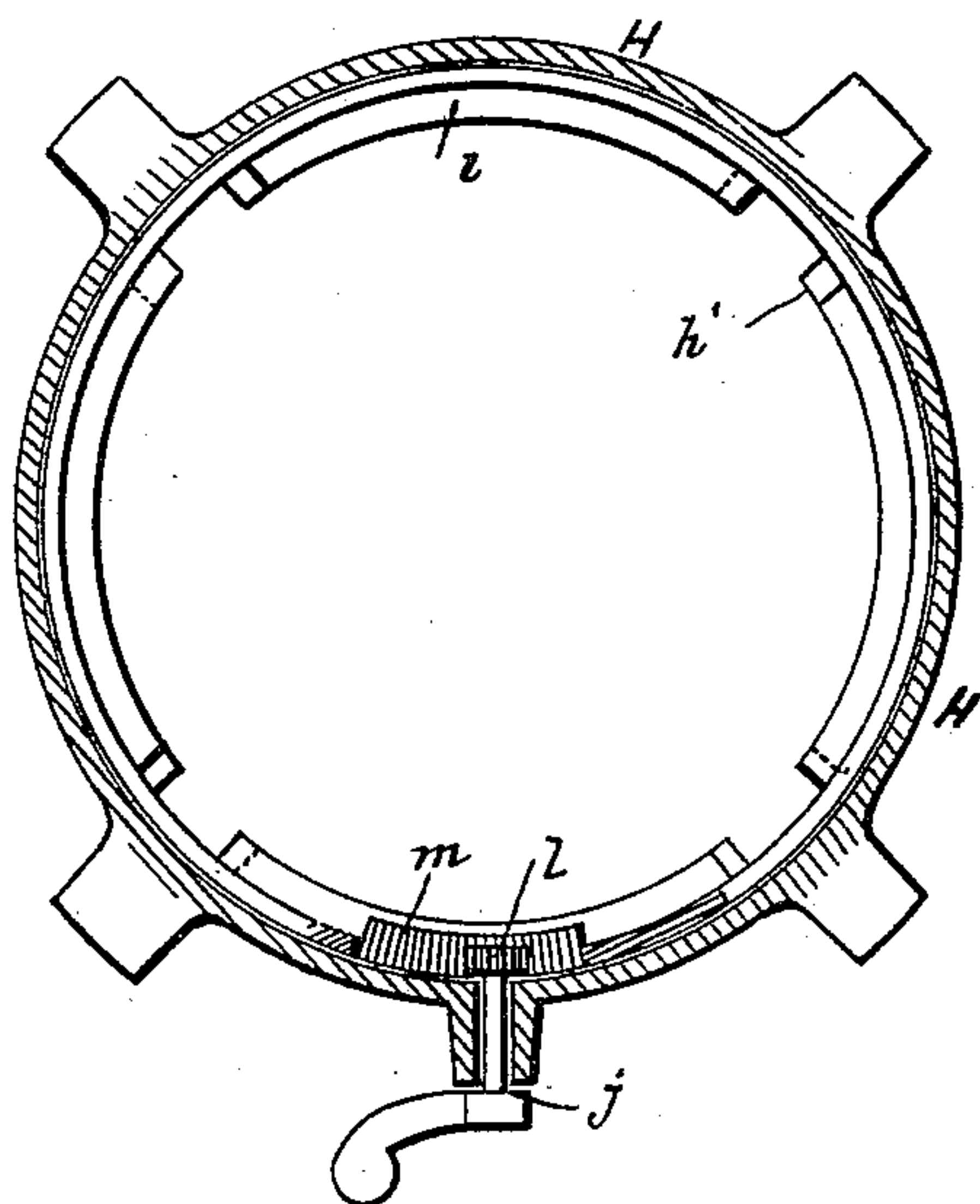


Fig. 7.

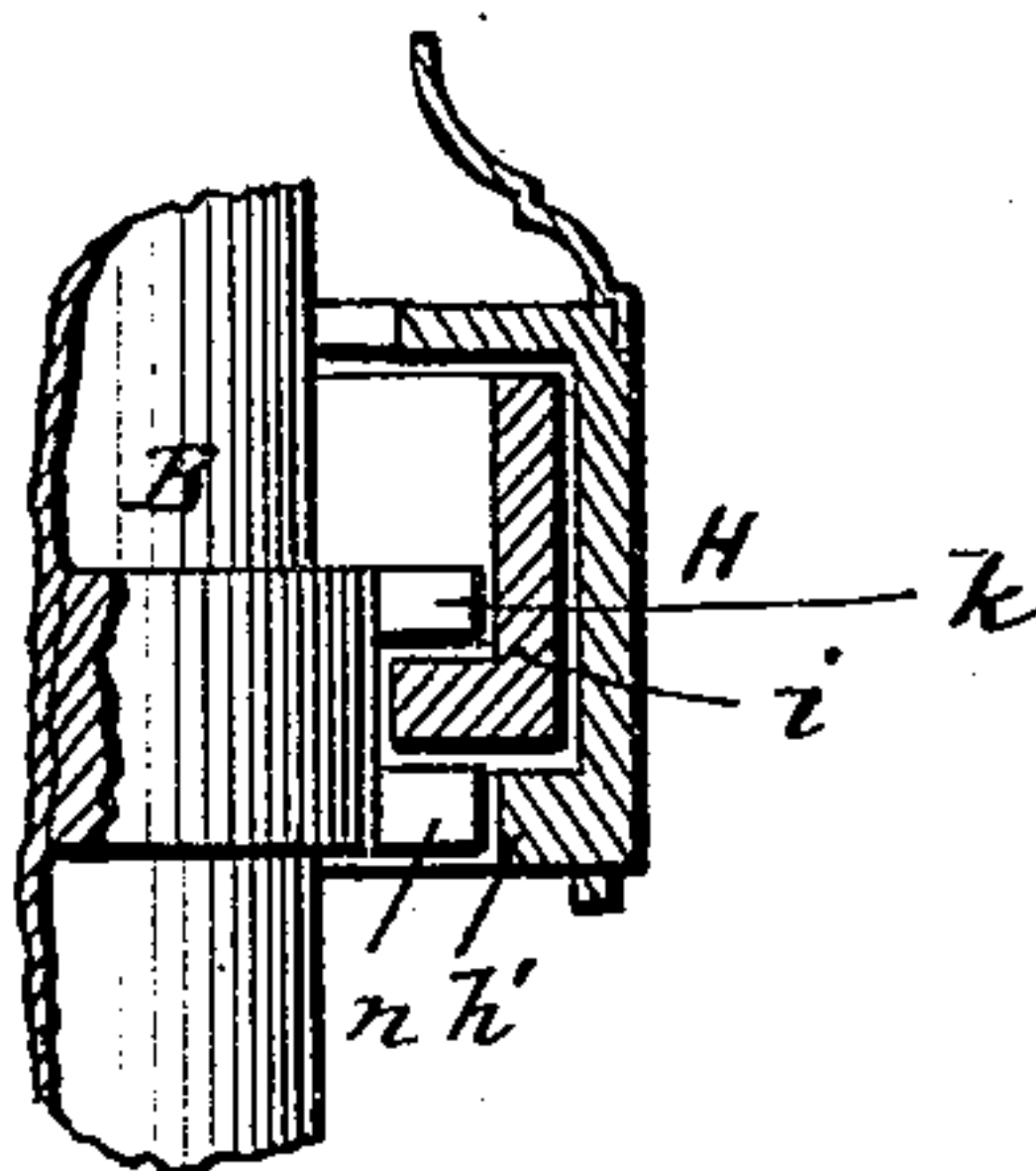
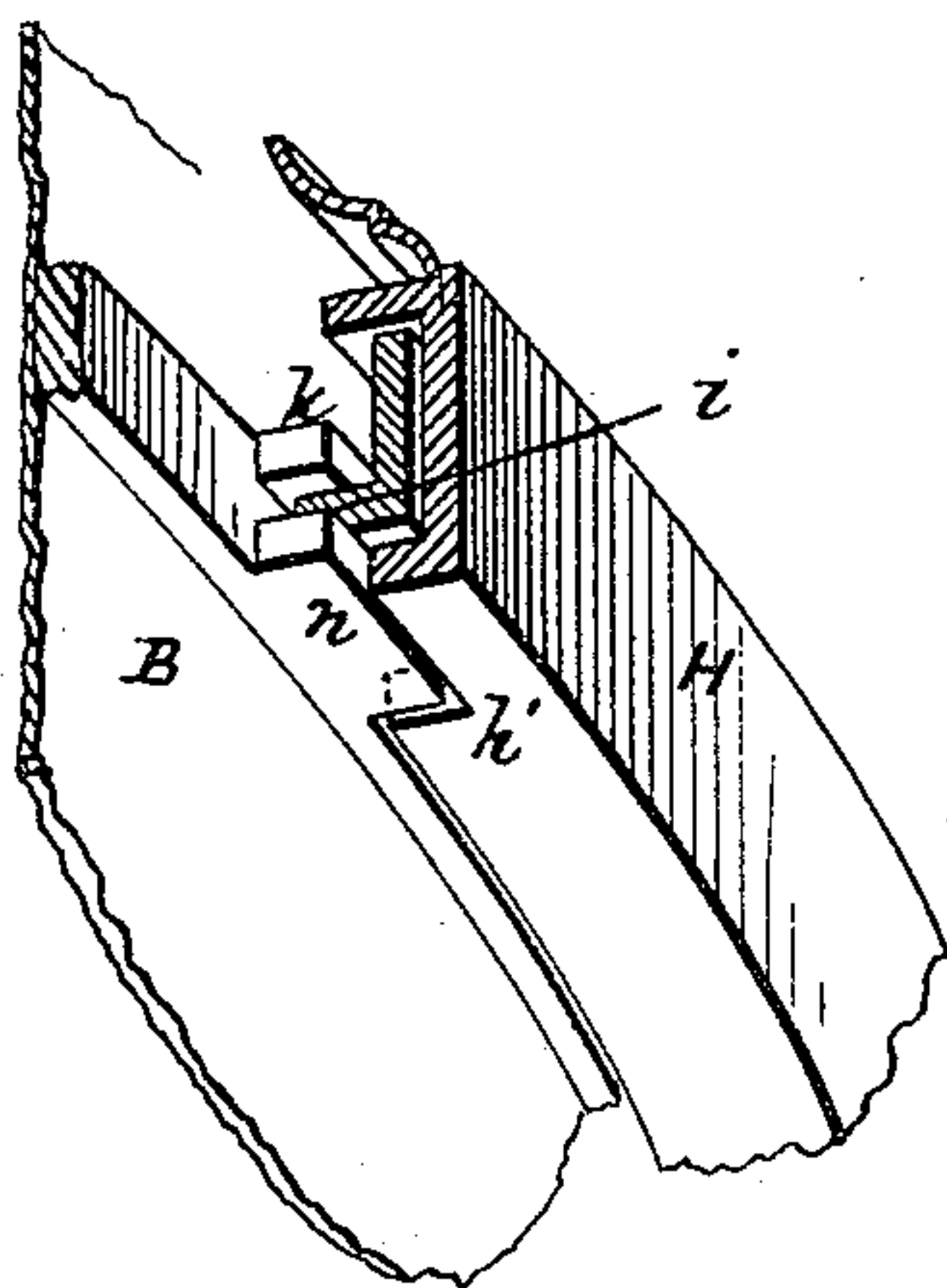


Fig. 8.



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UNITED STATES PATENT OFFICE.

WILLARD H. SMITH, OF BROOKLYN, NEW YORK.

LAMP.

SPECIFICATION forming part of Letters Patent No. 238,450, dated March 1, 1881.

Application filed January 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLARD H. SMITH, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Lamps, of which the following is a specification.

My invention relates, in the main, to lamps intended as center lamps for cars and other vehicles and structures. Some of the improvements hereinafter described are, however, applicable to any lamp having an oil fount or reservoir removable from a receiver or holder.

My improvements are directed to means for opening and closing the flow of oil from the oil-fount, to mechanism for locking the removable lamp in place in the lamp-gallery, and to means for keeping the burner-tubes supplied with oil, and they can best be explained and understood by reference to the accompanying drawings, in which—

Figure 1 is a vertical central section of a two-light center lamp embodying my improvements. Fig. 2 is a like section, on an enlarged scale, of the center oil-discharge nozzle at the bottom of the oil-fount. Fig. 3 is a plan of the same from beneath. Fig. 4 is a perspective view, on an enlarged scale, of the nozzle-receiving socket. Fig. 5 is a vertical central section of the nozzle and socket when fitted and locked together. Fig. 6 is a plan, partly in horizontal section, of the lamp-gallery. Fig. 7 is an enlarged sectional view of a portion of the same with the part of the lamp immediately adjoining the same. Fig. 8 is an enlarged perspective view, partly in section, of the same parts, designed to show more clearly how the parts interlock.

A is the oil fount or reservoir. B is the holder or receiver for the same.

C are the tubular branch arms carrying the burner-tubes D, and containing the oil-supply tubes *a*, which lead from the center, where they receive oil from the fount, to the burner-tubes. Said arms C also contain the tube *b*, which I term the "equalizing-tube," whose function will be hereinafter described.

The bottom of the holder is somewhat dished, and has at its center the nozzle-receiving socket E, into the bottom of which open the supply-tubes *a*.

The holder B, arms C, and socket E are all fastened together so as to be as one piece.

The socket is designed to receive the tubular nozzle F, which extends down from the bottom of the oil-fount. In the lower end of the nozzle is a passage, *c*, through which the oil escapes. This passage has a door composed of a plate, *d*, which is carried by a sleeve, G, which fits closely around and is adapted to rotate on the cylindrical nozzle F. When the sleeve occupies the position shown in Fig. 2 the passage is closed and no oil can escape. By giving the sleeve a quarter-turn the plate *d* is brought to the position shown in Fig. 3, in which position the passage *c* is open.

Upon the side of the nozzle is a lug, *f*, which projects through a slot, *e*, in the sleeve G, of such length as to allow the sleeve sufficient range of independent movement, and upon the sleeve is a laterally-projecting pin, *g*. In the socket E is a vertical groove, *g'*, for the pin *g*, and an inclined groove, *f'*, for the lug *f*. The mouths of these two grooves are placed at such distance apart that they can only be entered by the pin and the lug when the pin is in the position which it occupies when the passage *c* is closed. Thus when the parts are in this position the nozzle can enter the socket; but as it descends there in the lug which follows the inclined groove *f'* will cause a rotary movement of the nozzle and sleeve with relation to one another, the sleeve-pin being held in the vertical groove *g'*, and in this way, by the time the nozzle is seated in its socket, the passage *c* will be open, and oil will flow through the tubes *a* to the burner-tubes. On the other hand, the oil-fount to be removed must be turned so as to close the oil-escape passage. By this arrangement the act of seating the oil-fount in place compels the opening of the valve, and at the same time the bayonet-joint formed by the lug *f* and groove *f'* makes a secure fastening for the fount. If desired, two lugs and grooves may be employed instead of one. I prefer to make the groove *f'* slanting and the groove *g'* vertical; but if desired, this arrangement may be reversed. All, indeed, that is absolutely essential is that there should be divergence between the two grooves, so as to cause the pin

and lug to approach or recede from one another, for the purpose above indicated, in the act of moving the fount to or from its seat.

It not unfrequently happens that when a lamp of this kind is in use a film or bubble of oil will form on the lower end of the nozzle and cover the discharge opening or passage *c*, with the effect of retarding and checking the flow of oil. This I find can be effectually remedied by providing an air-passage leading from the exterior of the nozzle, and opening into the bottom of the same above the plane occupied by the oil film or bubble. One convenient arrangement for this purpose is shown in Figs. 2 and 3, the nozzle having an air-tube, *h*, which at its upper end extends out through the side of the nozzle, and at its lower end opens through the bottom of the nozzle above the point where the film or bubble usually forms. The devices herein shown for locking the lamp in place in the lamp-gallery *H*, are the same in principle, and for the most part in construction, as those shown and described in my Letters Patent No. 236,638 of January 11, 1881, the gallery having a notched supporting-ledge, *h'*, and carrying a rotating notched locking-ring, *i*, which is operated by means of a handle, *j*, on the exterior of the gallery, and the lamp having laterally-projecting lugs *k* corresponding to the notches in the ring and ledge. The mechanism in the drawings differs from said patented mechanism in the following particulars: I now use on the inner end of the handle a spur-wheel or pinion, *l*, which meshes with a rack, *m*, on the upper face of the ring, so that by rotating the handle the ring can be readily moved. This device is simple, easy of application, effective, and serves at the same time to hold the ring securely in any position to which it may be adjusted. I also place below one or more of the main lugs *k* an auxiliary lug, *n*, of corresponding size, which is separated from the main lug by a distance equal to the thickness of the ring, so that when the main lug is above and rests upon the ring, the auxiliary lug will be situated in and fill the notch in the ledge *h'* through which the main lug entered. In this way I not only hold the lamp up in place, but I also lock it against any rotary movement in the gallery, and in fact lock it tightly, so that it cannot move in any direction.

It sometimes happens that one or the other of the oil-supply tubes *a* becomes stopped or choked, thus checking the flow of oil to the burner-tube with which it may be in communication. This occasionally occurs by reason of the wick coming against that end of the tube which opens into the burner-tube, a contingency which may be guarded against by using within the burner-tube an interposed perforated guard or shield, *o*, as indicated in the left-hand burner-tube in Fig. 1; but as the stoppage may arise from other causes I find it of advantage to employ what I have termed the "equalizing-tube," *b*, a tube which extends

through from one burner-tube to another, terminating in each at or near the bottom, as shown plainly in Fig. 1. Under this arrangement, if we suppose the flow of oil through one of the tubes *a* to be checked, oil will at once be taken through the pipe *b* from the burner-tube that has its full supply, and will be delivered to the tube whose ordinary supply has been cut off, and so long as either one of the tubes *a* is open both burner-tubes will in this way receive adequate supply.

Having now described my improvements, what I claim, and desire to secure by Letters Patent, is—

1. The oil-fount and oil-discharge nozzle on the bottom of the same, the rotary gate for closing and opening the nozzle, and the lugs or pins with which the nozzle and gate are respectively provided, in combination with the nozzle-receiving socket, provided with inclined diverging grooves for the reception of said pins or lugs, whereby the act of seating the oil-fount in place compels the opening of the valve or gate, substantially as and for the purposes hereinbefore set forth.

2. The oil-fount provided with an oil escape or discharge passage, and an air-pipe leading from the side into the lower part of the same, substantially as and for the purposes hereinbefore set forth.

3. The oil-fount and its nozzle, the rotary gate for opening and closing the same, and the lugs or pins on said nozzle and gate, respectively, in combination with the receiver or holder, the nozzle-receiving socket provided with diverging grooves for the reception of said pins or lugs, inclined as and for the purpose specified, and the oil-supply tube leading from the socket to the burner-tubes, substantially as hereinbefore set forth.

4. In combination with the removable lamp and lugs thereon, the lamp-gallery, provided with a notched supporting-ledge, the rotating notched locking-ring, provided on its upper face with a rack, and the rotary ring-operating shaft extending through from the exterior to the interior of the gallery, and provided on its inner end with a pinion to engage said rack, substantially as shown and described.

5. The lamp-gallery, provided with a notched supporting-ledge, and the rotating notched locking-ring, in combination with the lamp, provided with main lugs, and with one or more auxiliary lugs, substantially as and for the purposes hereinbefore set forth.

6. The equalizing-tube, in combination with the burner-tubes, the oil-fount, and oil-supply tubes or ducts leading from the fount to the burner-tubes, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 17th day of January, 1881.

WILLARD H. SMITH.

Witnesses:

E. A. DICK,
U. C. LANE.