

(No Model.)

2 Sheets—Sheet 1.

E. MELCHIOR.

ARGAND BURNER.

No. 367,421.

Patented Aug. 2, 1887.

Fig. 5.

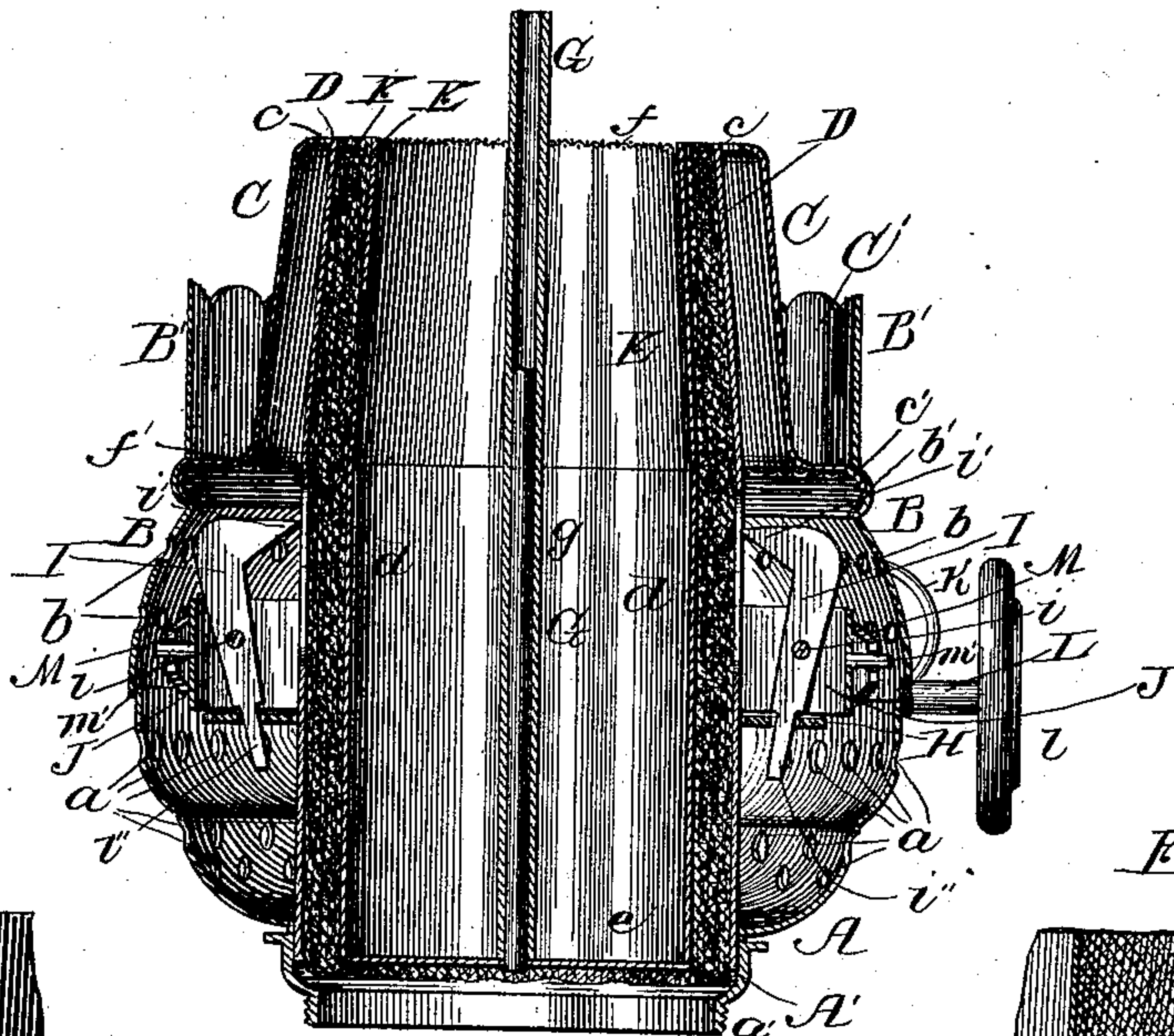


Fig. 8.

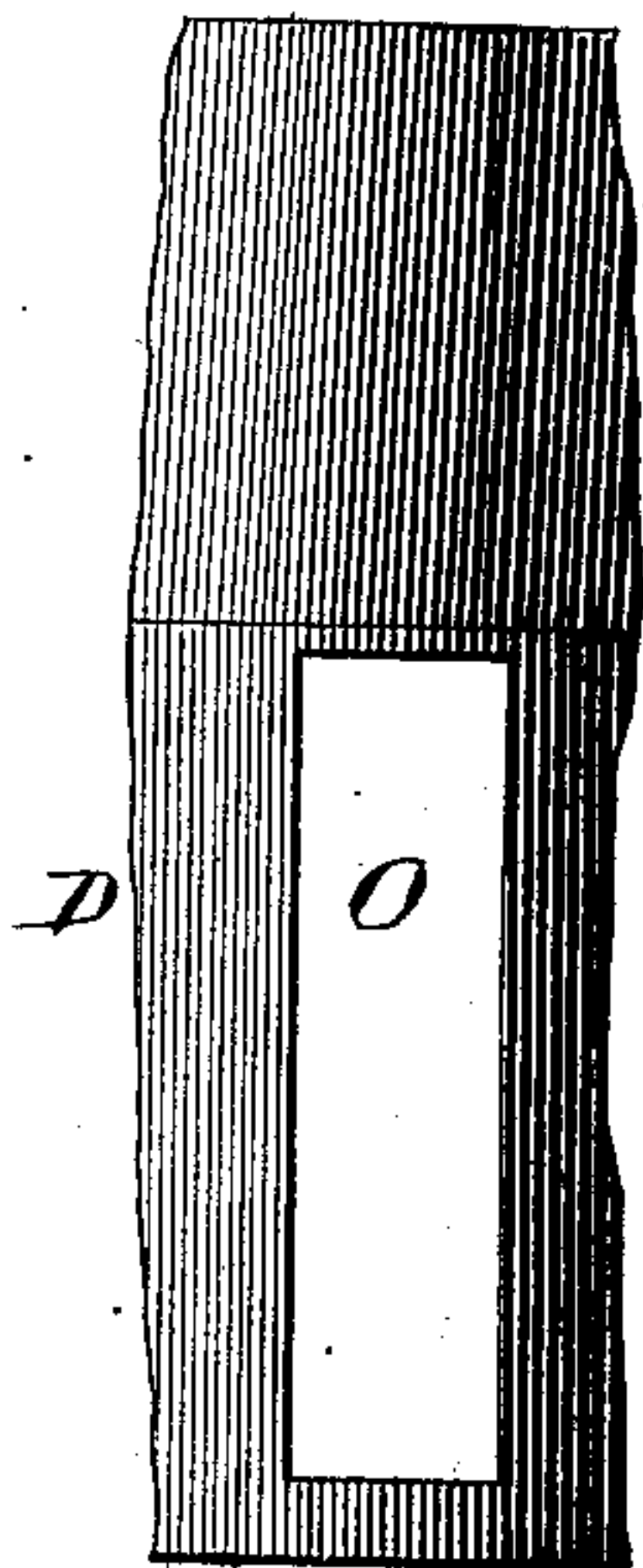


Fig. 9.

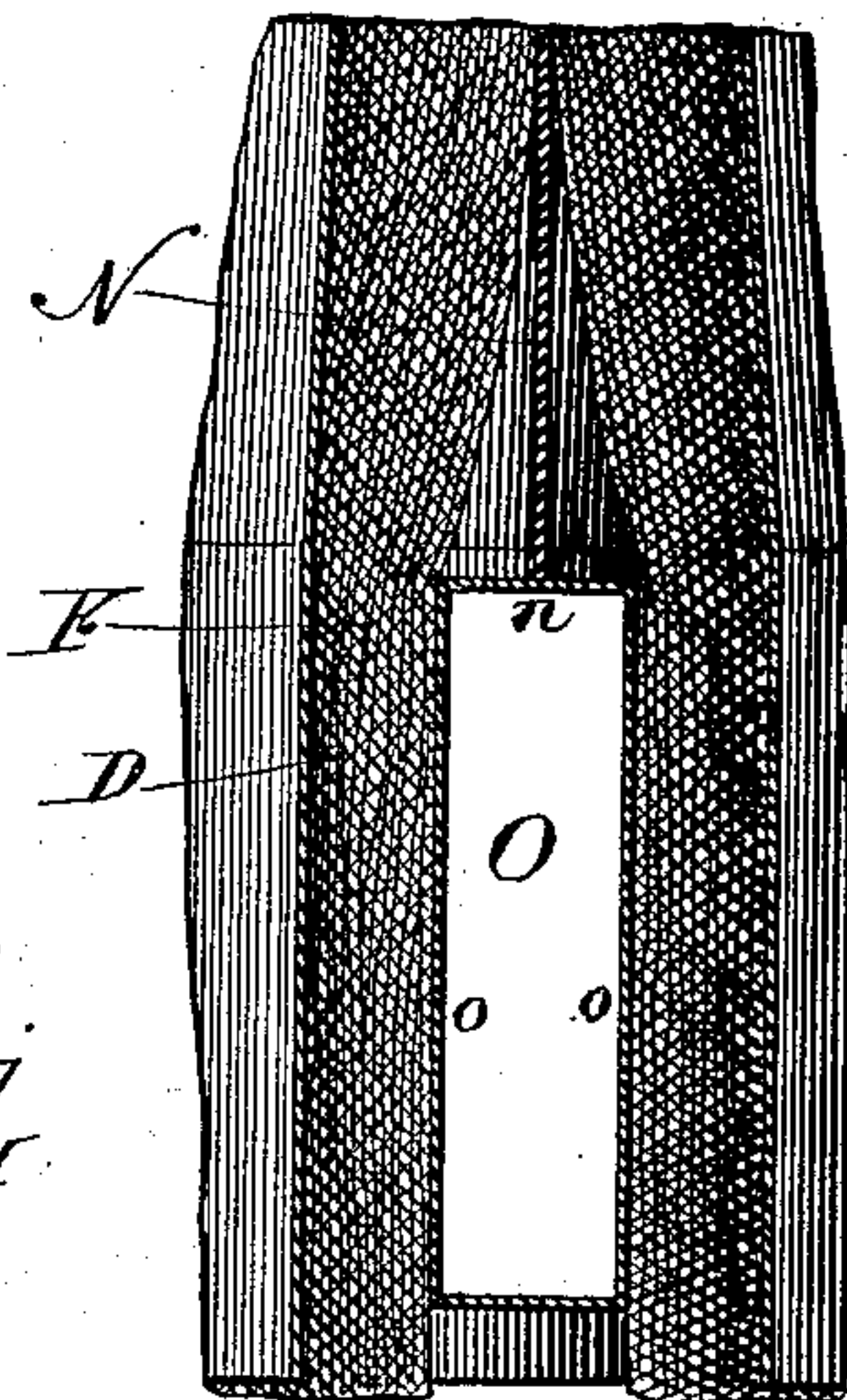


Fig. 6.

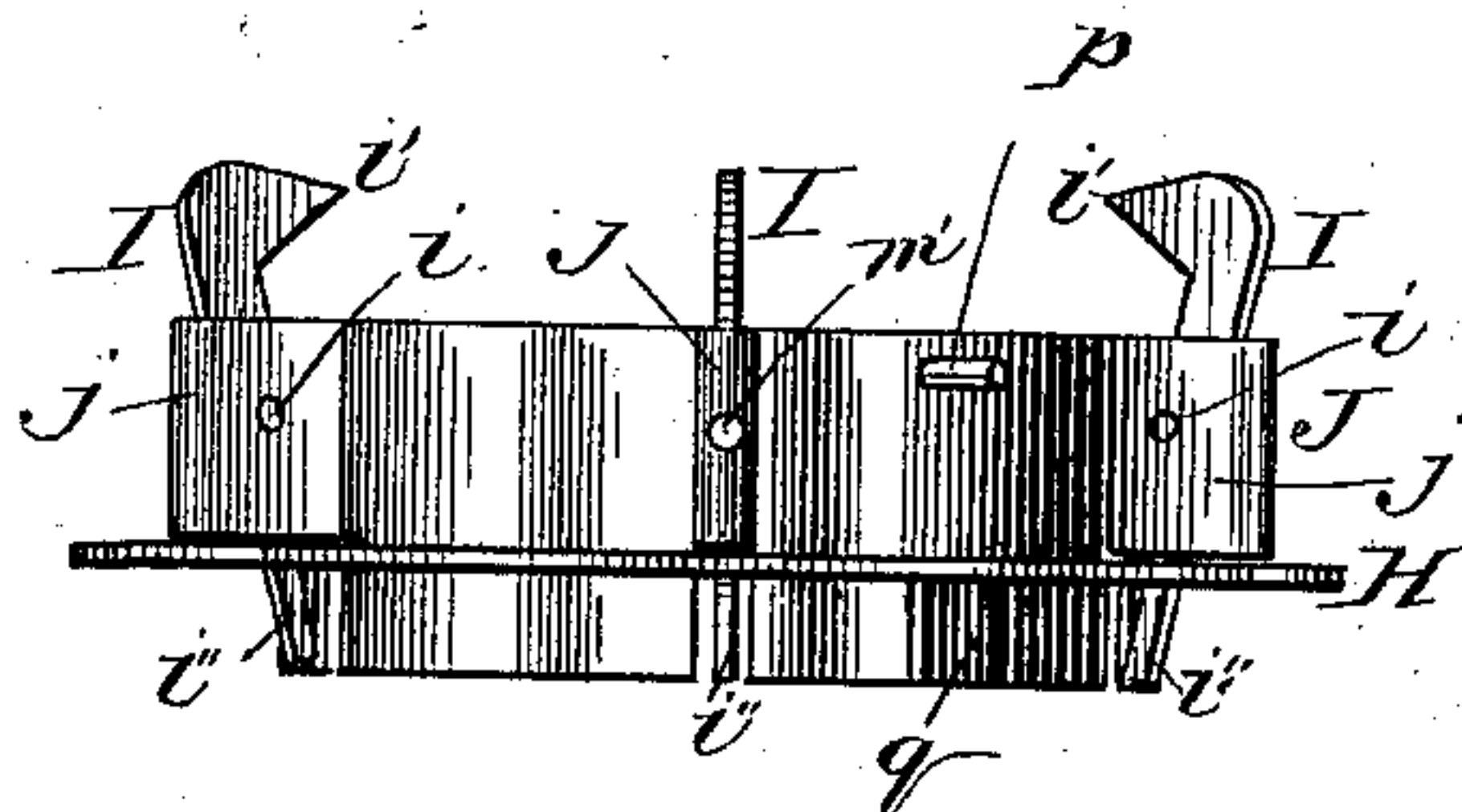
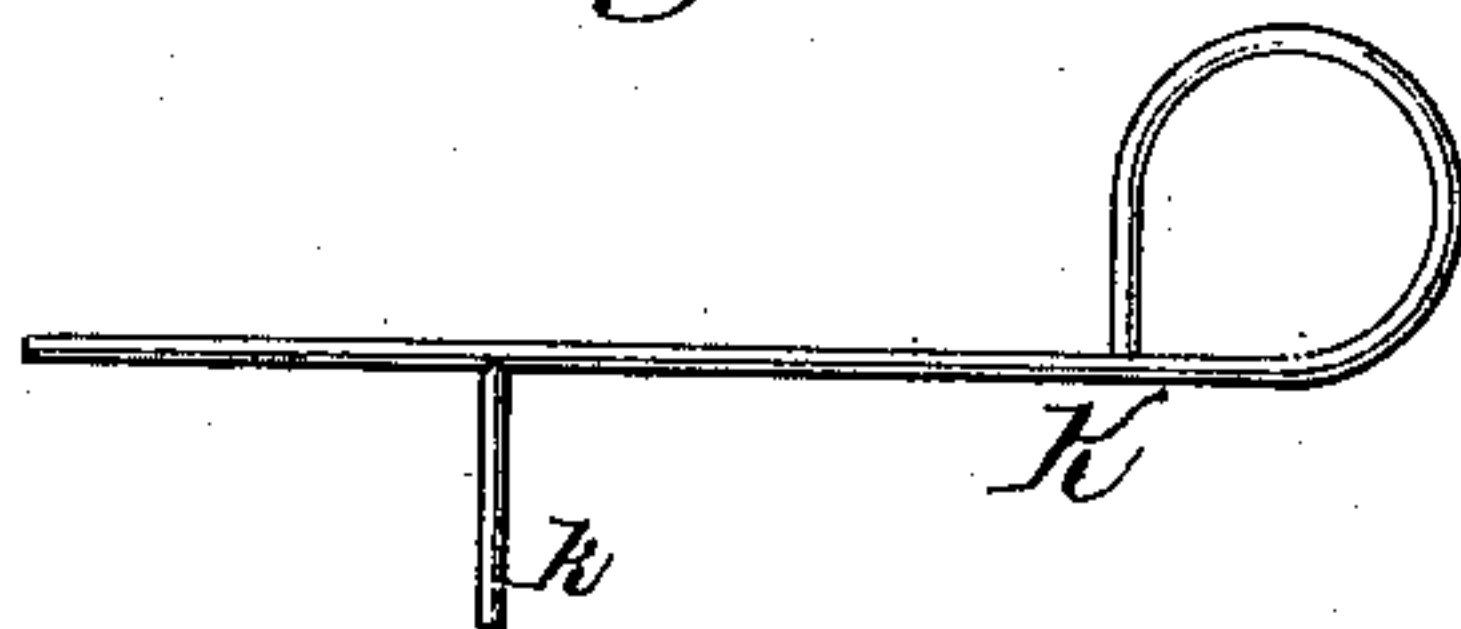


Fig. 7.



Witnesses:

Albert N. Adams.
Harry S. Jones.

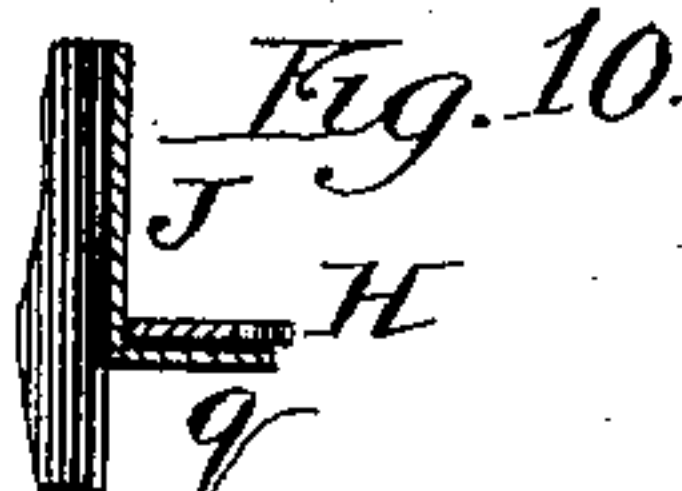


Fig. 10.

Inventor:

Edward Melchior

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Fig. 1.

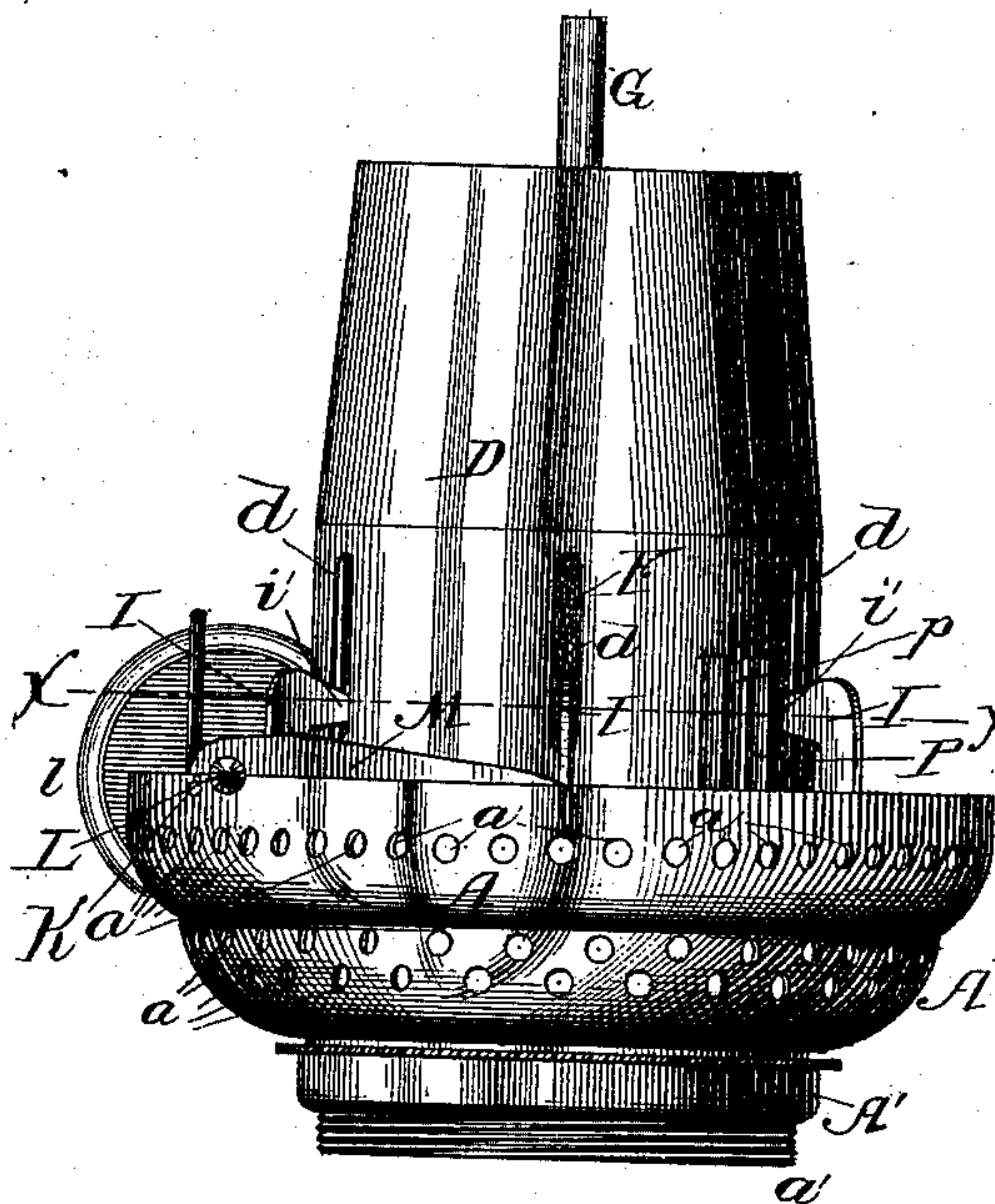


Fig. 2.

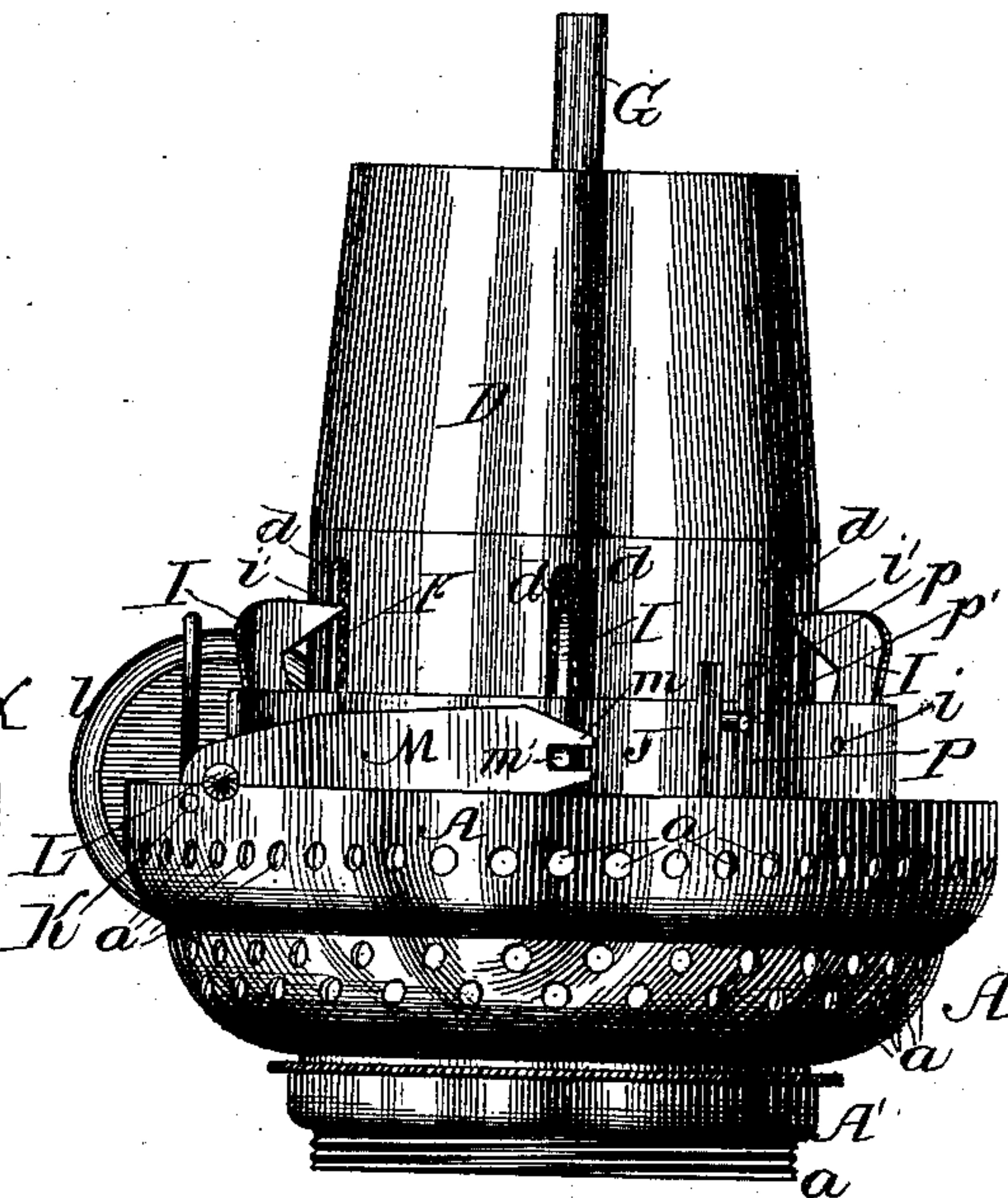


Fig. 3.

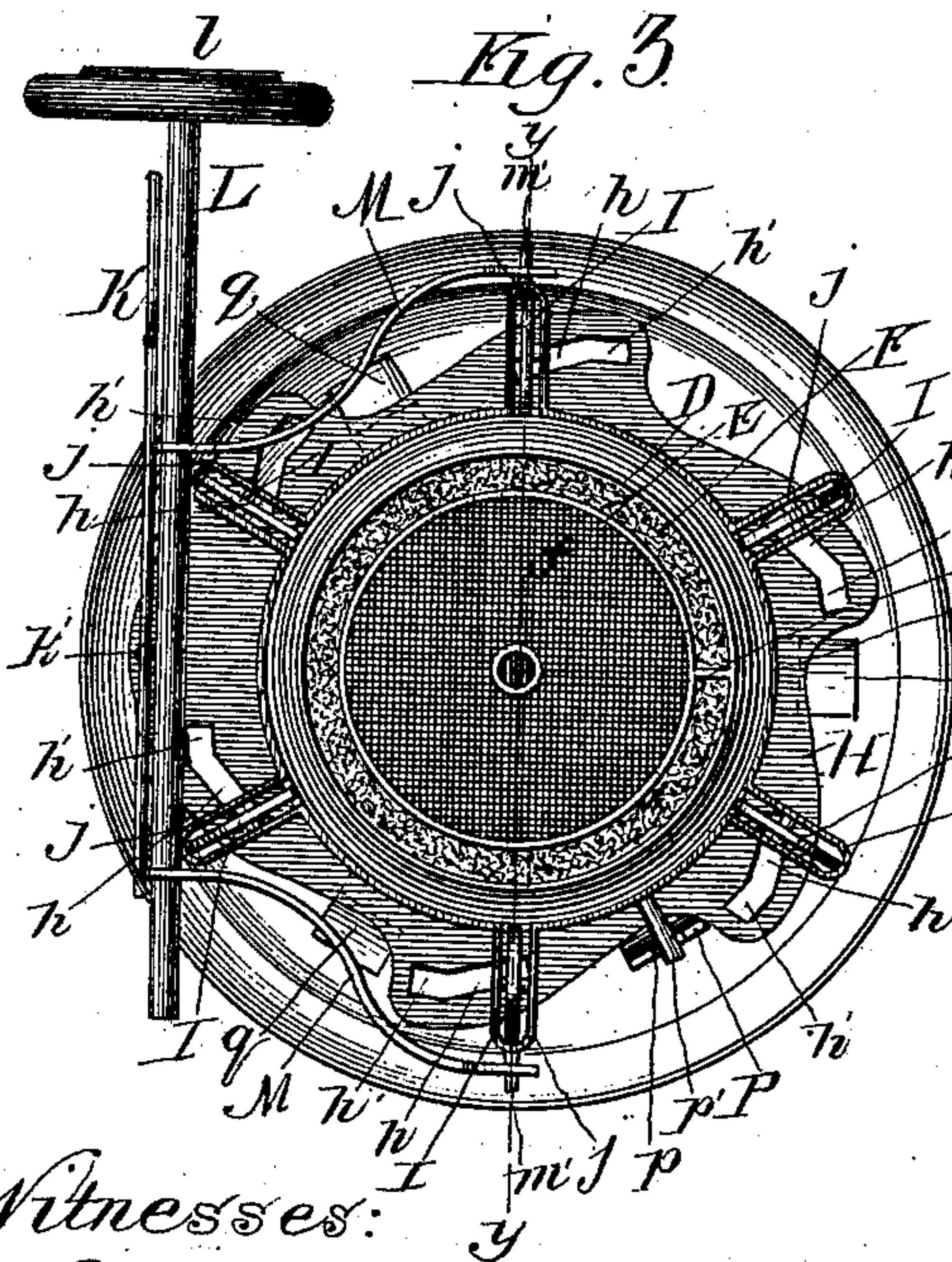
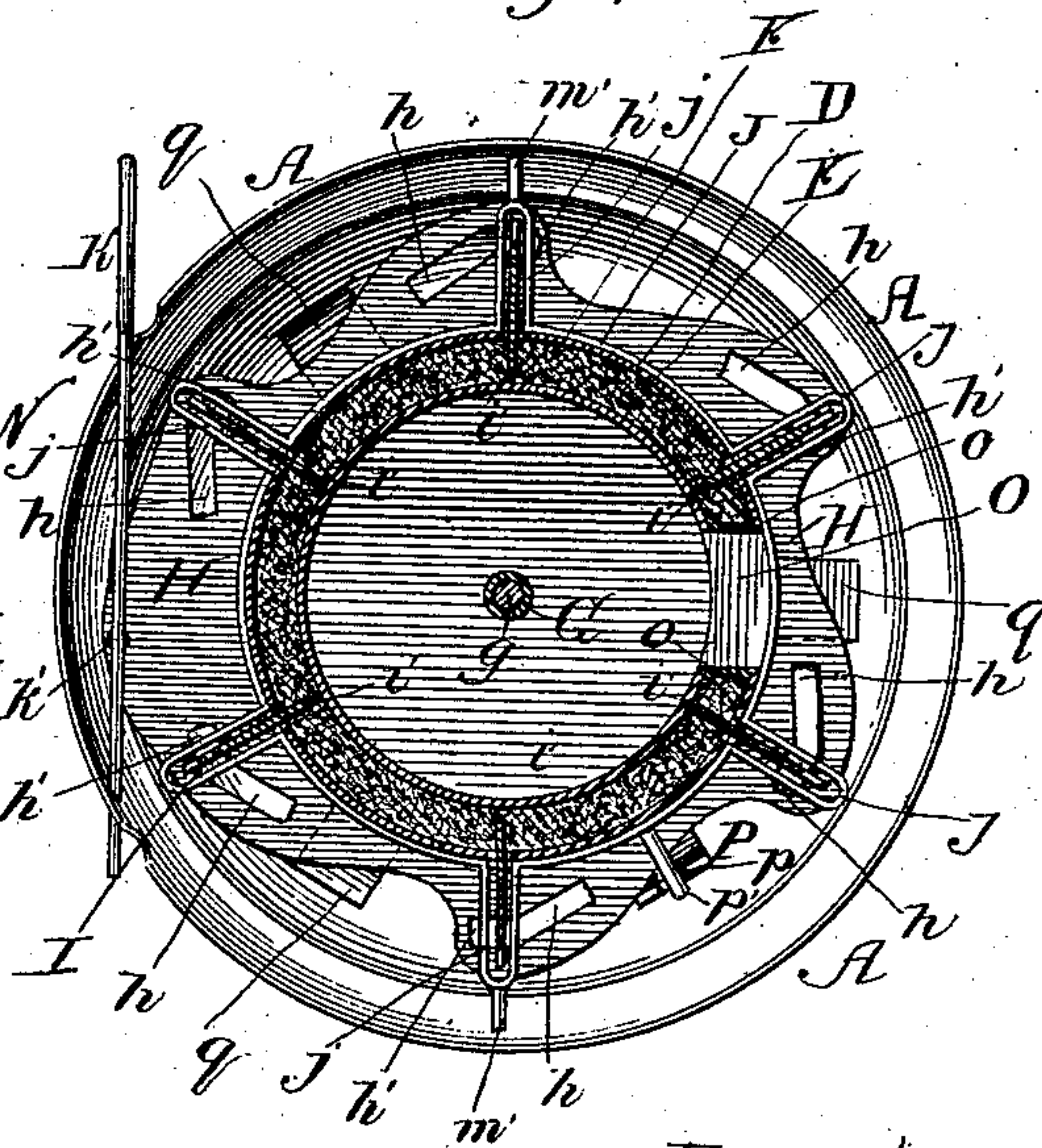


Fig. 4.



Witnesses:

Albert H. Adams.
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Inventor:

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UNITED STATES PATENT OFFICE.

EDWARD MELCHIOR, OF CHICAGO, ILLINOIS.

ARGAND BURNER.

SPECIFICATION forming part of Letters Patent No. 367,421, dated August 2, 1887.

Application filed May 14, 1886. Serial No. 202,189. (No model.)

To all whom it may concern:

Be it known that I, EDWARD MELCHIOR, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have invented a new and useful Improvement in Burners, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation with the cap or cover portion of the outer shell or casing removed and showing the wick-actuating dogs depressed and engaged with the wick; Fig. 2, a similar view showing the wick-actuating dogs elevated and disengaged from the wick; Fig. 3, a top or plan view with the devices as shown in Fig. 1; Fig. 4, a cross-section of Fig. 1 on line *x x*; Fig. 5, a vertical section on line *y y* of Fig. 3 with the cap or cover portion of the outer shell or casing in position; Fig. 6, a detail, being a side elevation of the wick-actuating dogs and their support; Fig. 7, a detail of the pull-rod for engaging and disengaging the wick-dogs; Figs. 8 and 9, details showing the air-opening for the center of the burner; Fig. 10, a detail of cam-plate support.

The object of my invention is to provide novel means for raising the wick of a burner, whereby the wick, when once trimmed and leveled, will be preserved in such condition until burned out; and to this end the invention consists in the features of construction and in the combination of devices hereinafter described and claimed.

In the drawings, A represents the base or lower section of the outer shell or casing, made of brass or other suitable metal spun or otherwise formed into shape, and having its body or main portion provided with holes for the admission of air, as usual. This base A is provided with a neck or collar, A', having a screw-thread, *a'*, for attachment to the lamp-collar, as usual.

B is the cap or upper section of the outer shell or casing, made of brass or other suitable metal, spun or otherwise formed into shape to receive and be firmly attached to the base or lower section by slipping thereover or therein, and having its body or main portion provided with holes *b* for the admission of air, as usual; and, as shown, the upper end, B', is formed straight, or nearly so, to receive the chimney, and at the juncture of the top B' with B is a

groove, *b'*, for locking the cap proper in place.

C is the cap proper, attached to the upper section, B, by a bead, *c'*, which enters the groove *b'*, and the top of the cap has an inwardly-projecting flange, *c*, which, when the parts are together, fits around the upper end of the wick-tube.

D is the outer wall of the wick-tube, which wall, as shown, is straight for a portion of its length, and has an inward incline at its upper end, and in the straight portion below the line where the incline begins are formed slots *d*.

E is the inner wall of the wick-tube, corresponding in shape to the wall D, but of a less diameter, and without any slots corresponding to it, the inner wall being solid except at one point. The inner and outer wall are both annular, and between them is the space for the wick; and, as shown, the lower end of the inner wall is closed by a plate, *e*, to form a receptacle and a flue for cold air to pass to the inside of the flame, as hereinafter provided for, and the top of the wall E is closed by a perforated plate, *f*, which allows the air to pass out, so as not to affect the flame, the plate preventing gusts and also discharging the air in small streams, and this plate *f* also forms a guard against the dropping of the charred wick into the inside of E, and thereby prevents any accumulation that would produce ill effects.

F is the wick, of a flat form, and turned so as to enter the space between the outer and inner walls of the wick-tube.

G is the button-tube attached at its lower end to the plate *e*, with its upper end projecting above the top of the wick-tube the distance required for the location of the button. (Not shown.) This tube G, as shown, is partly filled with a rod, *g*, which rod terminates at the proper point to form a stop for the button-stem.

H is a plate having a central annular hole of a dimension to allow the plate to be slipped around the outer wall, D, of the wick-tube. The periphery of this plate H, as shown, is cut out so as to leave ears, and each ear has therein a slot formed in two parts, *h h'*, which stand at an angle to each other, and, as shown, on one side the plate H, between two of the ears, is left intact to furnish an attachment for turning the plate.

I represents a series of dogs, six being provided in the construction shown. A greater or less number can be used, as may be desired, for the size of the burner and the number of slots $h h'$ will correspond with the number of dogs. Each dog at the end which engages with the wick is provided with a sharp point or tooth, i' , which tooth can be projected into a slot, d , of the outer wall, D, a slot, d , being provided in the wall in line with a dog for the point i' of the dog to enter, and each dog I is provided with a lower end or tail, i'' , to pass within the slot $h h'$ therefor in the plate or ring H, so that as the plate or ring is moved the dog will be thrown in or out at the head or point end to force the point into the wick or disengage it therefrom, the dog being pivotally mounted for this purpose.

J is a support, in the form of a band, encircling the outer wall, D, and loose enough on the wall so that it can slide up and down. This band, as shown, extends above and below the plate H, and is provided with a series of arms or brackets, j , each having a slot or opening for the dog I, in which the dog is secured by a pin or pivot, i , so as to swing. An arm or bracket, j , is provided for each dog I, and these arms or brackets j are so located and arranged as to line the dogs I with their respective slots d , and have the stems i'' pass into their respective slots $h h'$.

K is a pull-rod formed of a piece of wire or other suitable material, one end having therein, as shown, a loop, which, when the parts are together, comes outside of the shell A B, and this pull-rod is supported by suitable holes formed in the shell to receive the pull and allow it to slide back and forth. This pull-rod, at a point to lie within the shell A, has an arm, k , to enter a hole, k' , in the plate H, when the parts are together, so that by moving the pull-rod K back and forth the plate H will be oscillated.

L is a stem supported in the outer shell, and having one end projecting beyond the shell, and provided with a thumb and finger disk or button, l , by means of which the stem can be rocked.

M represents arms attached firmly to the shaft L and arranged to pass, one on each side of the band J, each arm having in its end a notch or recess, m , to engage a pin, m' , projecting out from the arm or bracket j , so that by moving the arms M the band J can be slid up and down on the wall D.

N is a division-plate in the wick-space between the walls D E, against which the edges of the wick come, to have a smooth surface on which to move in being raised and lowered, the plate keeping the edges from contact with each other, and at the same time allowing the edges of the wick to come close enough together to complete the circle.

O is an opening for the admission of air to the interior of the wall E. This opening extends through both walls D and E, and the space between the walls at the opening is closed by

a plate, o , on each side, and by a plate, n , on top, the plate n furnishing a support for the vertical division-plate N. This opening O can be made of capacity sufficient to pass the amount of air required for combustion, and its size will not interfere with the moving of the wick, as the wick is caught on both sides and adjacent to the opening by the dogs.

P is an upright provided with a slot, p , to receive a pin, p' , on the band J and maintain the band in a straight line of movement in use, and, as shown, the plate H is supported by projections q , formed by turning out a piece of the band J or by blocks secured to the face of the band.

The parts are assembled by slipping the plate H onto the band J below the brackets j of the band, the plate and the band J being adjusted to have the stems i'' of the dogs I enter the slots $h h'$, and then adjusting the plate H and band J on the wall D for the dogs I to line with the slots d . The wick-tube is then attached at its lower end to the shell A by securing the lower end of the outer wall to the inside of the neck A'. The wick-tube is formed, before placing the plate H and band J thereon, by securing the outer wall, D, and inner wall, E, together by the sides o and top n , which form the opening O. The outer wall, D, having the slots d therein, and the inner chamber formed by wall E are closed at the bottom by the plate e , with the tube G attached thereto, and the top is partially closed by the perforated plate f . The pull K is slipped into place for the arm k to enter the hole k' of the plate H. The shaft L, with the arms M thereon, is placed in position for the slots m to engage the pins m' , and the shell B C is then slipped into place, completing the burner ready for use when the button is in position, the gauze or perforated plate f being attached to cap C before the cap C and shell B are placed in position.

In use, to raise and lower the wick the plate H is turned by the pull-rod K to cause the part h' of each slot to act on the stem i'' of its dog and throw the dogs into engagement with the wick by forcing the points i' of the dogs into the wick, all the dogs being operated simultaneously; and when the dogs are engaged, by turning the shaft L to raise the free ends of the arms M, the band J will be raised by the connection of the arms to the pins m' , raising all the dogs I and forcing up the wick, and by turning the rock-shaft in the opposite direction, the arms M will be lowered, carrying down the band J and dogs I, and lowering the wick. The wick, as it becomes burned, can be raised to bring a fresh portion into use by turning the shaft L to raise the wick and then turning the plate H for the part h of the slots to act on the stems i'' , which carries the dogs I back and throws the points i' out of engagement with the wick, so that by turning the rock-shaft L to carry down the free ends of the arms M, the band J will be lowered without lowering the wick, which remains in

its raised position. After the band J has been lowered the plate H is turned for the part *h'* of the slots to act on the stems *i''*, throwing the points *i'* of the dogs into engagement with the wick, so that by raising the free ends of the arms M the wick will be raised to bring a new section into use to be raised and lowered by the arms M until burned out, when another portion can be brought into use, as already described, to be burned out, and so on until the wick is used up.

It will be seen that the movements given to the dogs are positive in both directions, making their action reliable, and that the dogs are located around the wick to take hold thereof on all sides, and as all the dogs move at the same time the movement of the wick at all points is a uniform one, rendering it impossible for one point to be raised faster than another; and this feature of providing a uniform and simultaneous movement of the wick at all points constitutes the essential feature in connection with reciprocating and laterally swinging dogs operating to engage with the wick. The plate H, with its slots *h h'*, shows a form of device by which the dogs can be given the lateral swing, and the band J shows a means for supporting the dogs to have a reciprocating movement; but I do not confine myself to these special constructions of plate and band for operating the dogs.

The form of burner shown is designed more especially for a lamp; but the invention can be used with burners for oil stoves and other appliances.

The plate H is held against upward movement by the arms *j* and is held from dropping by the rests *q*, so that it is free to be oscillated to cause the slots *h h'* to act on the stems *i''* and move the dogs in and out; and this plate H moves with the band J, which it encircles, so as to keep the stems in engagement with the slots, whether the band is raised or lowered.

Heretofore a burner has been provided with a wick-adjuster composed of a vertically-slidable ring having attached spring-arms provided with teeth at their lower ends to engage the wick through slots in the wick-tube, and a cam-flange on a rotatable ring turned by the chimney-holder to press the teeth of the springs inward to engage the wick and then raise the vertically-slidable ring. In another instance a wick-adjuster has been composed of a slide carrying spring-claws, a crank-shaft for raising the slide, and a rotatable cam-ring for pressing the claws into engagement with the wick. Such constructions, therefore, I disclaim.

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

1. The combination, with the slotted wick-tube of an Argand burner, of a vertically-movable band, a series of dogs pivoted on the band, a movable slotted plate for oscillating the dogs on their pivotal bearings to engage

and disengage the wick, and a device, such substantially as described, for moving said plate.

2. The combination, with the slotted wick-tube of an Argand burner, of a vertically-movable band, a series of dogs pivoted on the band, a rotatable plate having slots engaging the dogs to swing them on their pivotal bearings, and a pull-rod for rotating the plate, substantially as described.

3. The combination, with the slotted wick-tube of an Argand burner, of a vertically-movable band, vertically-swinging arms for supporting and raising and lowering the band, a series of dogs carried by the band, a movable slotted plate for swinging the dogs to engage and disengage the wick, and a device, substantially as described, for moving the plate.

4. The combination, with the slotted wick-tube of an Argand burner, of a vertically-movable band, swinging arms for supporting and raising and lowering the band, a series of dogs pivoted on the band, a rotatable plate beneath the band having slots engaging the dogs, and a device, substantially as described, for rotating the band.

5. The combination, with the slotted wick-tube of an Argand burner, of a vertically-movable band, a series of dogs pivoted on the band and having tail-pieces extending below their pivots, a rotatable slotted plate loosely engaging said tail-pieces to swing the dogs on their pivotal bearings, and a device, substantially as described, for rotating said plate.

6. The combination, with the slotted wick-tube of an Argand burner, of a vertically-movable support, J, a series of dogs, I, pivoted on the support and having tail-pieces *i''*, and a rotatable plate, H, having slots engaging the tail-pieces to swing the dogs for engaging and disengaging the wick, and a device, substantially as described, for rotating the plate.

7. The combination, with the slotted wick-tube of an Argand burner, of a vertically-movable support, J, a rotatable shaft, L, having arms M, carrying the support, a series of dogs, I, on the support, a movable slotted plate for swinging the dogs to engage and disengage the wick, and a device, substantially as described, for moving said plate.

8. The combination, with the slotted wick-tube of an Argand burner, of a vertically-movable support, J, a rotatable shaft, L, having arms M, carrying the support, a series of dogs, I, pivoted on the support, a rotatable slotted plate, H, engaging the dogs to swing them to engage and disengage the wick, and a device, substantially as described, for rotating the plate.

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Witnesses:

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