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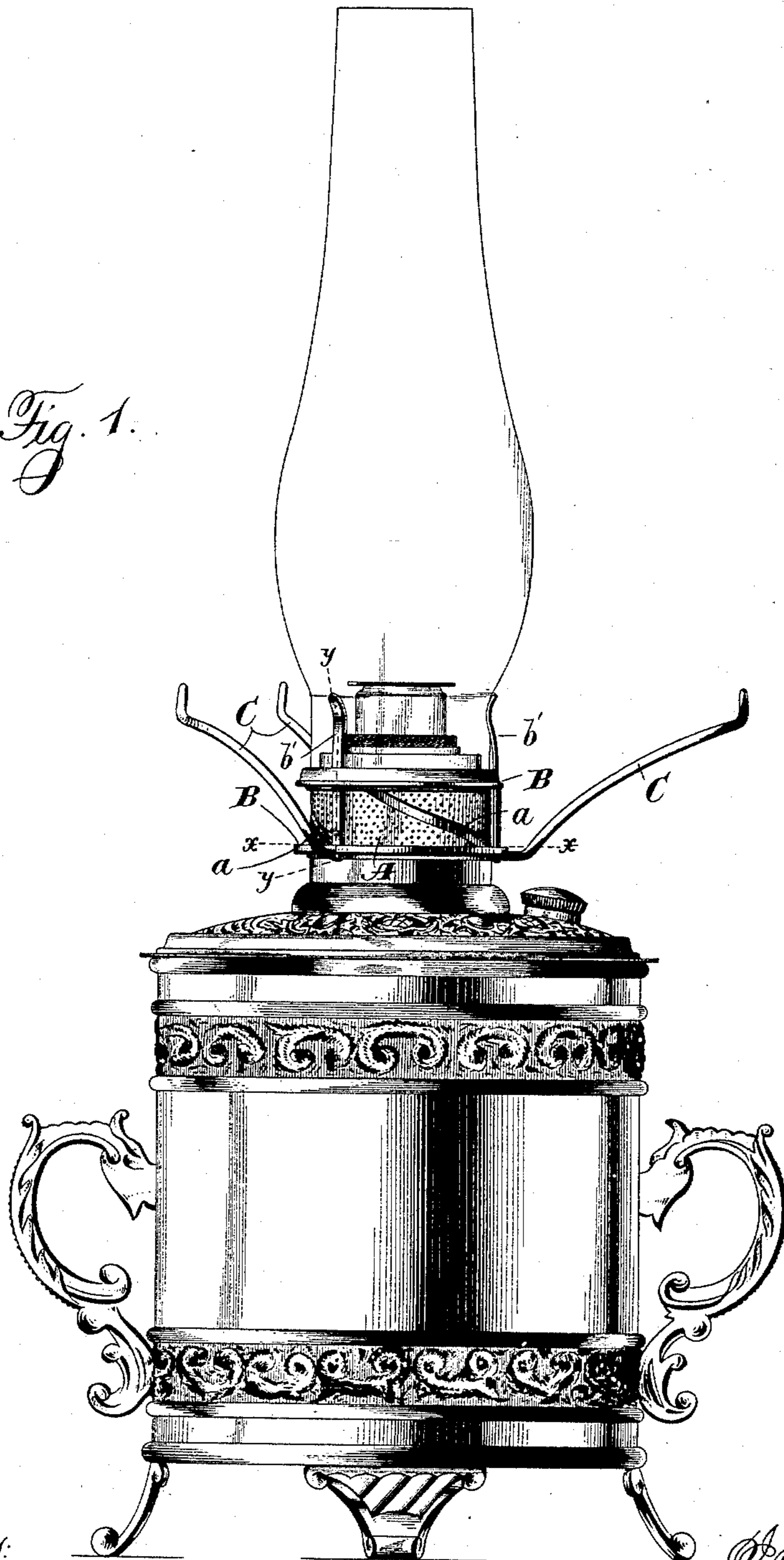
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W. BENNER.
LAMP.

No. 486,022.

Patented Nov. 8, 1892.

Fig. 1.



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by [Signature] [Signature]
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Fig. 2.

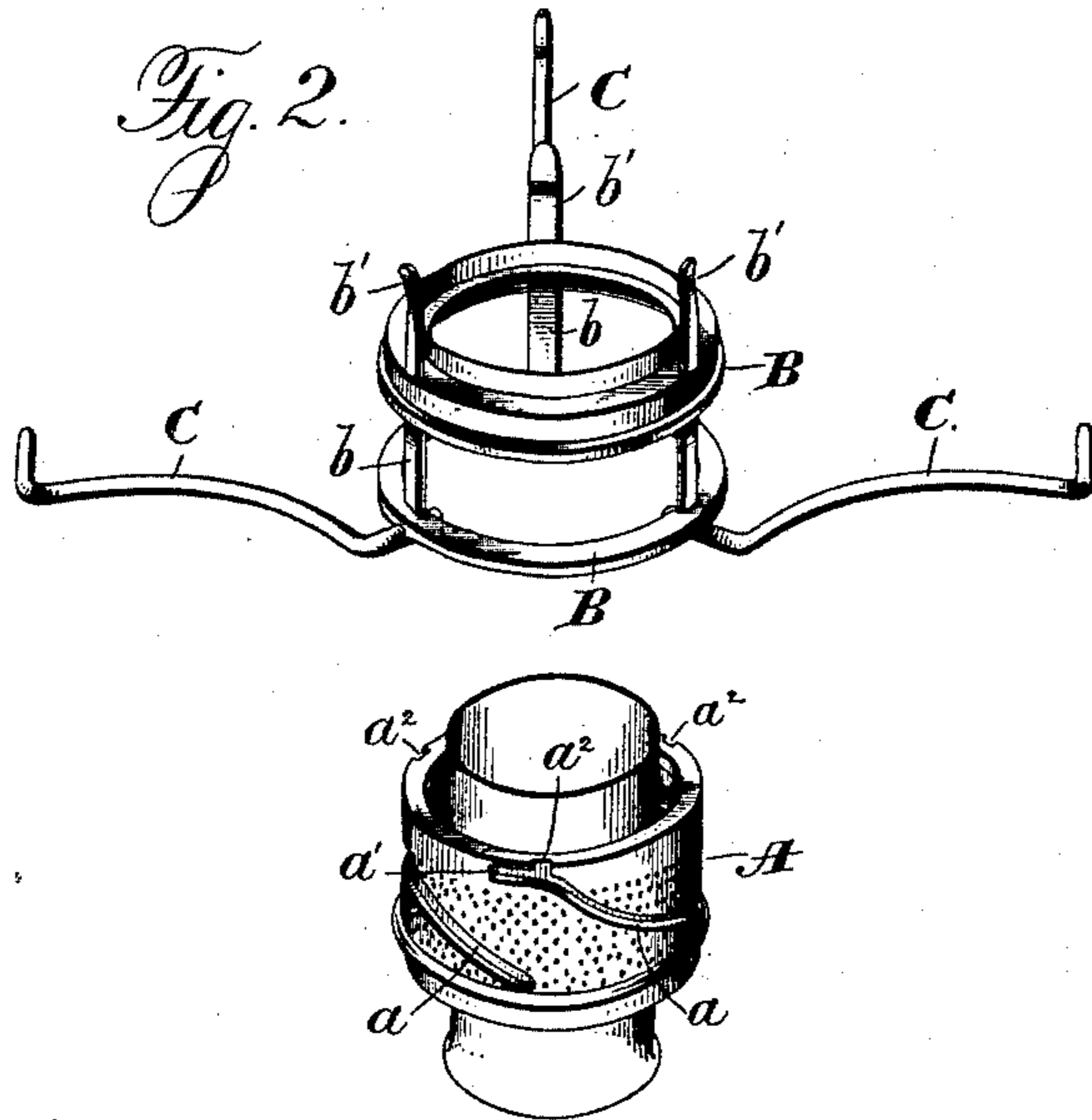


Fig. 3.

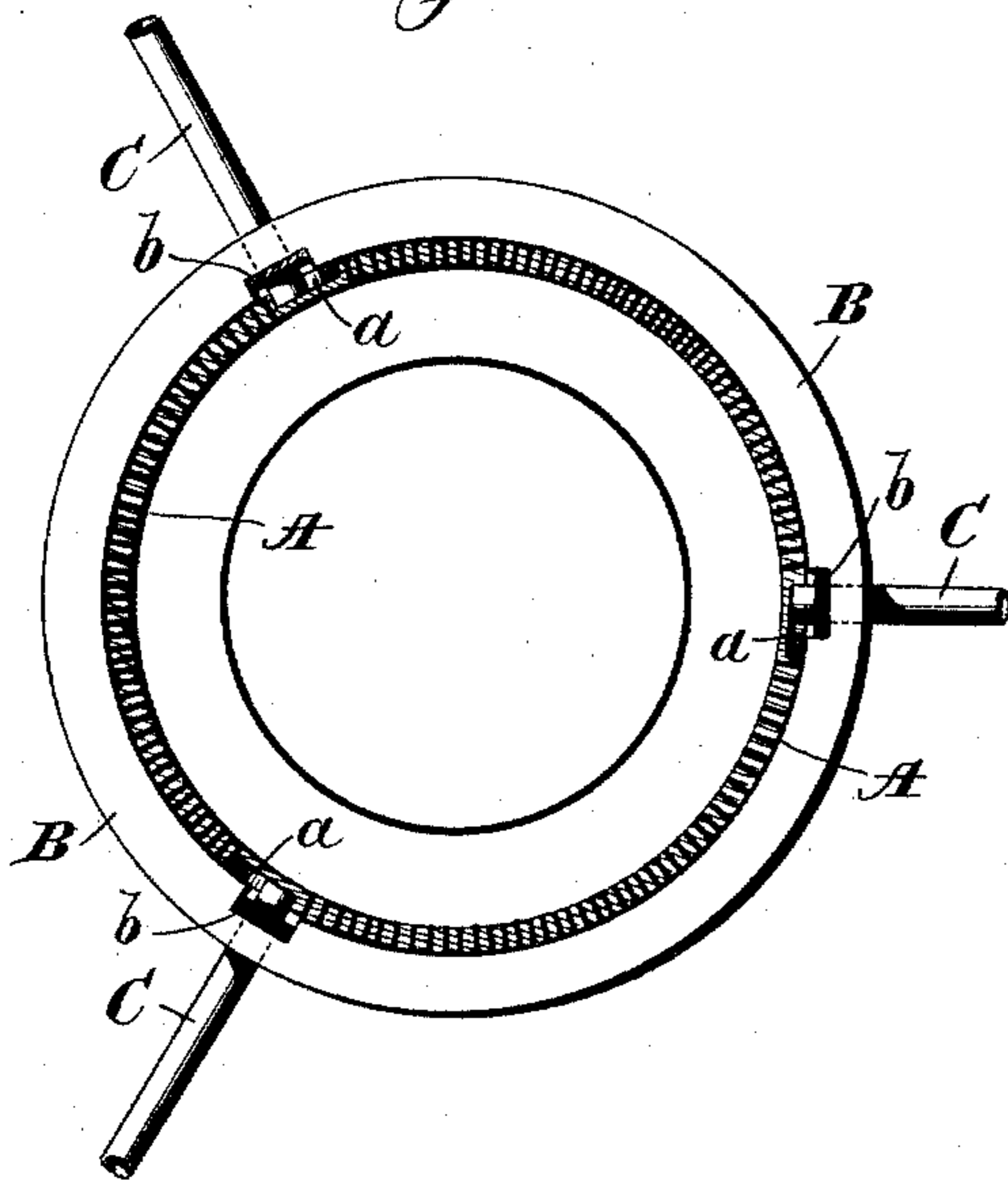
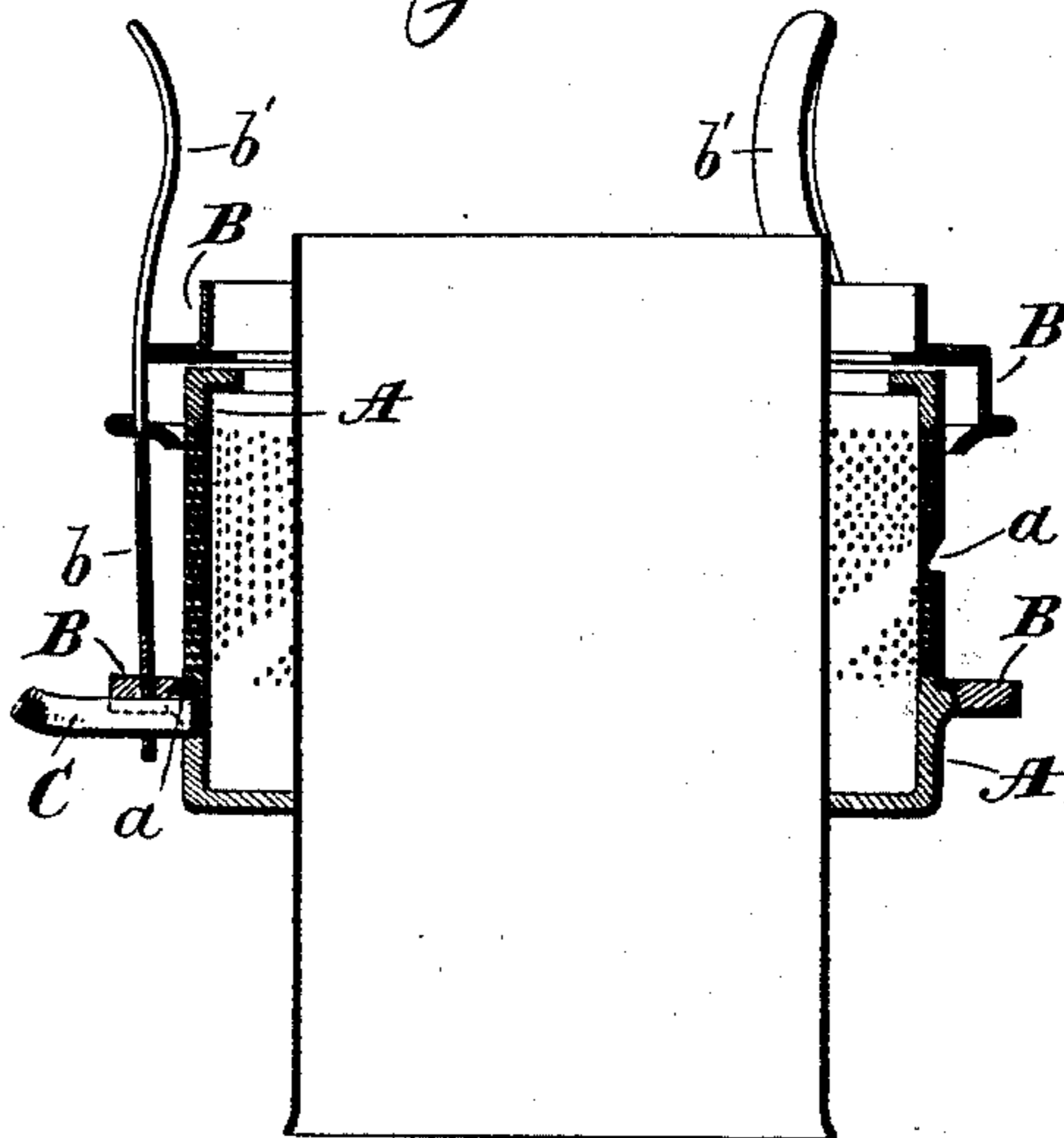


Fig. 4.



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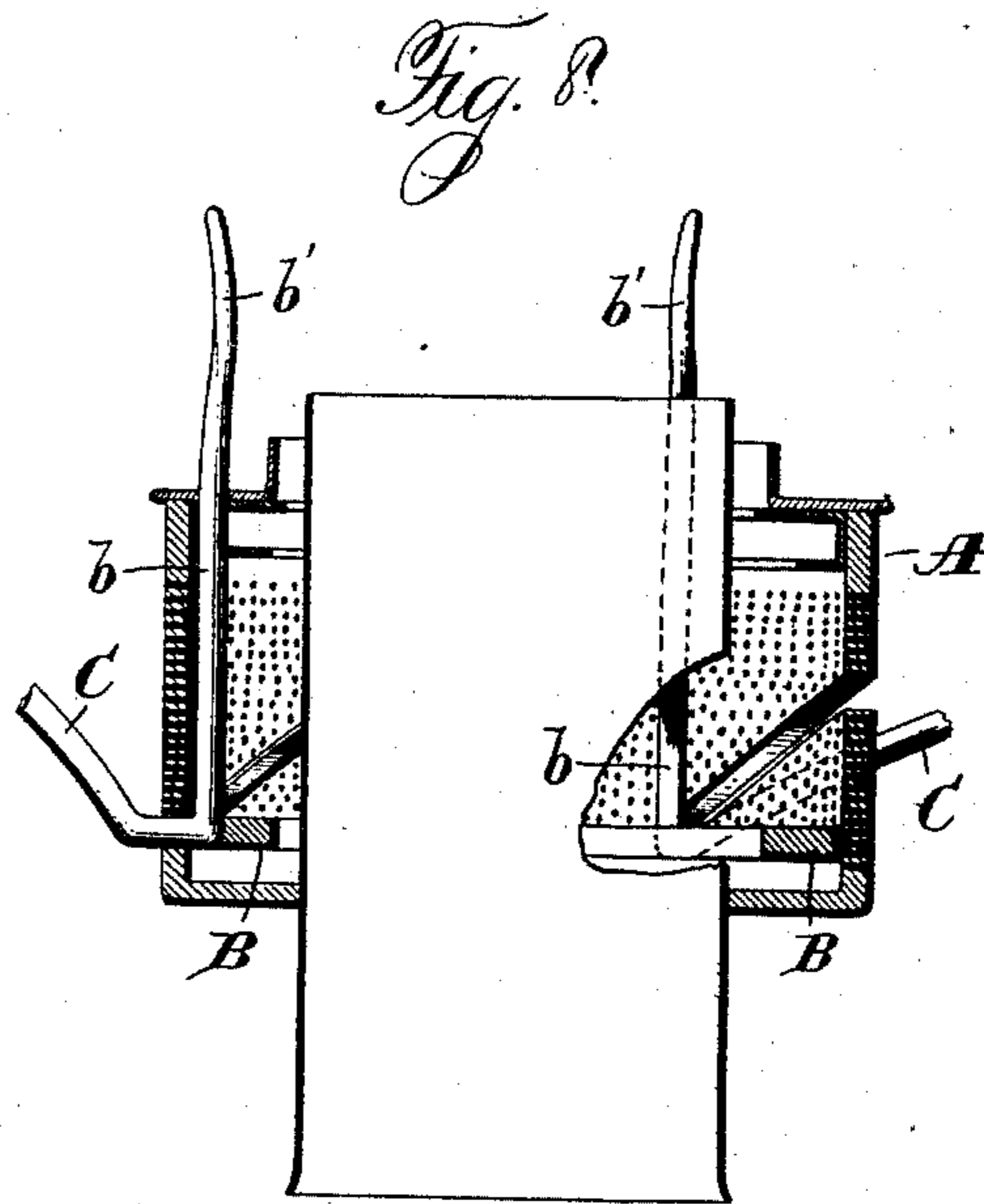
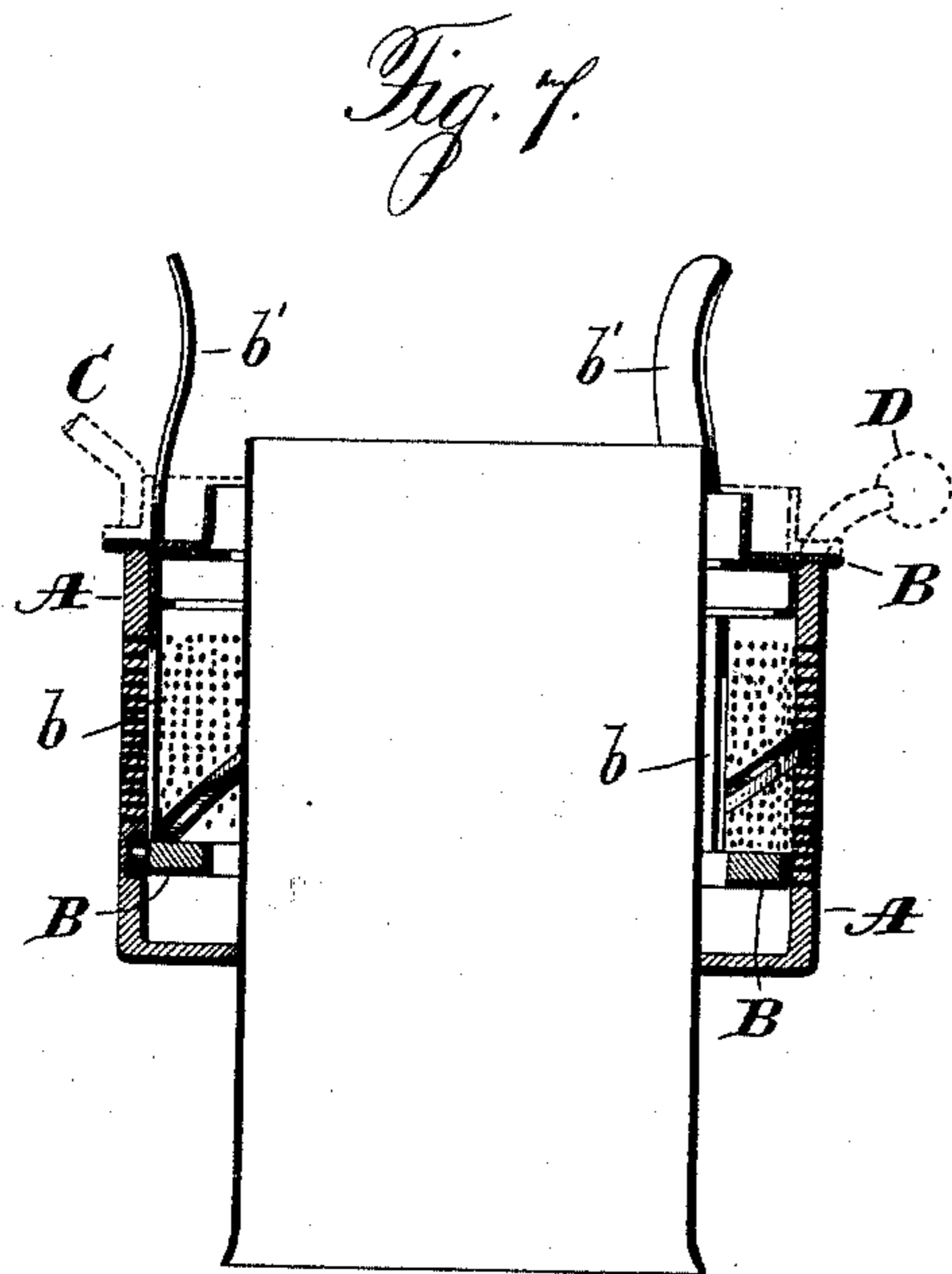
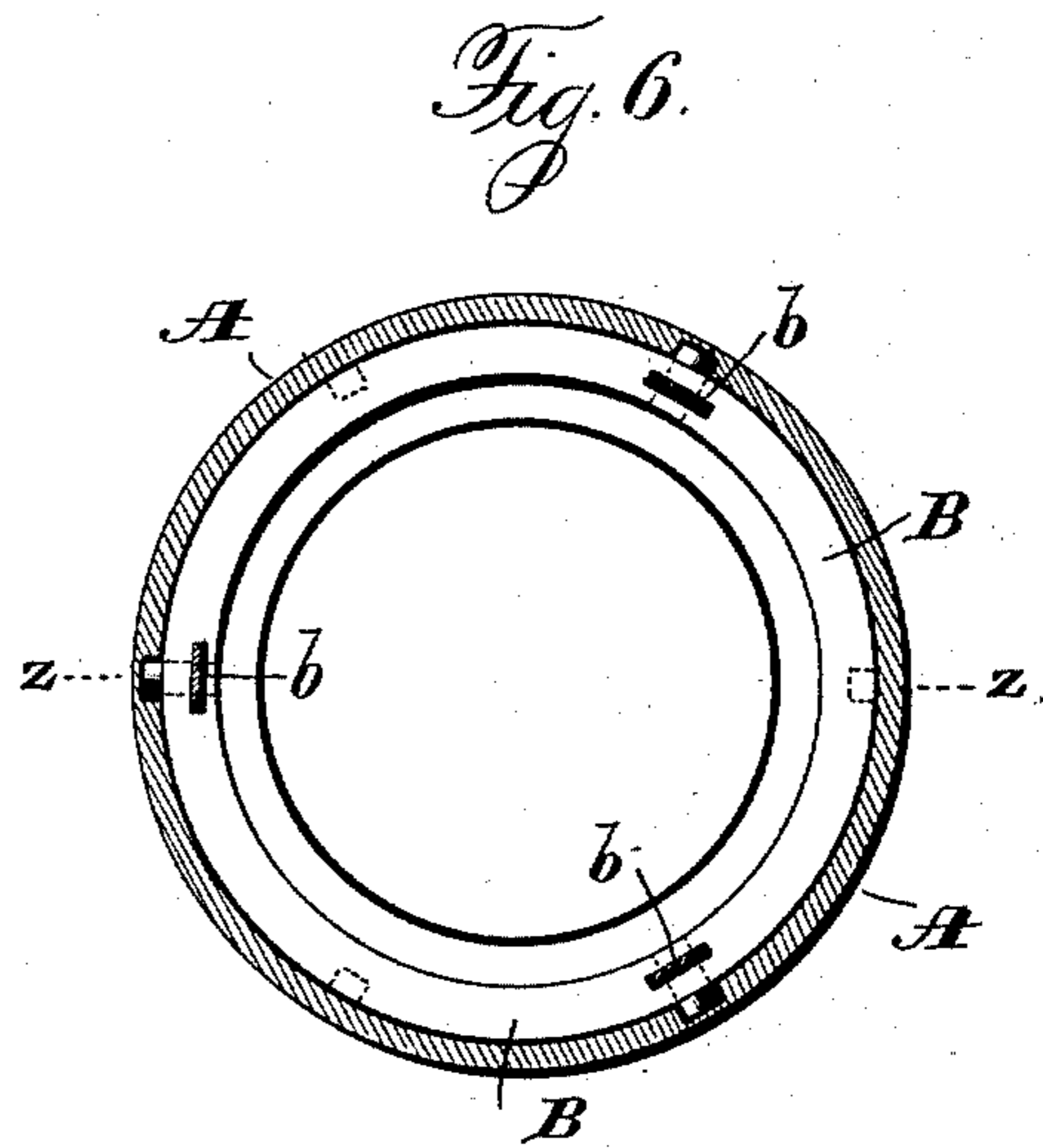
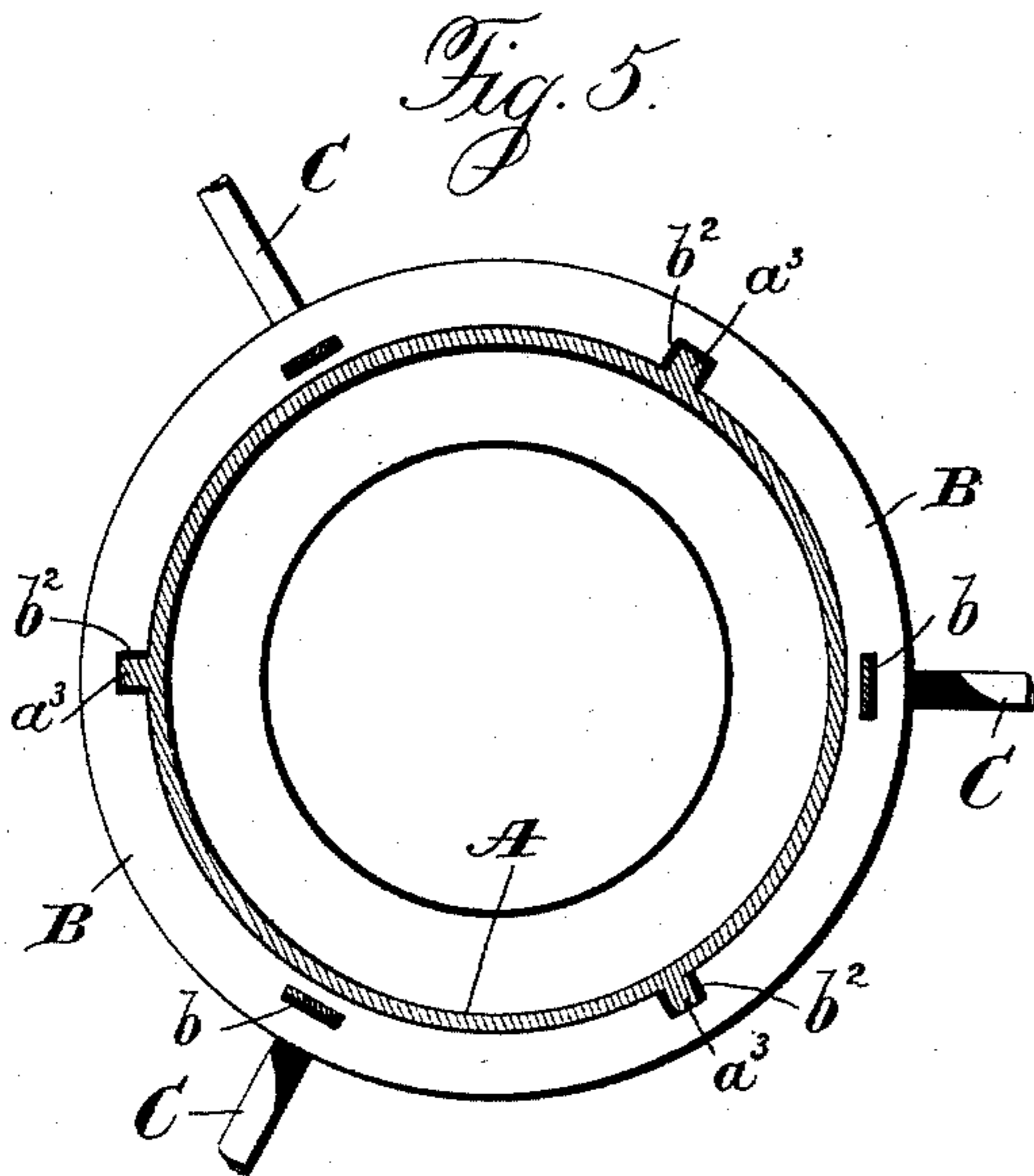
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UNITED STATES PATENT OFFICE.

WILLIS BENNER, OF LONG ISLAND CITY, NEW YORK.

LAMP.

SPECIFICATION forming part of Letters Patent No. 486,022, dated November 8, 1892.

Application filed May 27, 1892. Serial No. 434,592. (No model.)

To all whom it may concern:

Be it known that I, WILLIS BENNER, a citizen of the United States, and a resident of Long Island City, in the county of Queens, and in the State of New York, have invented certain new and useful Improvements in Lamps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 shows in side elevation a lamp to which my invention has been applied, the shade being removed, so as not to hide any part of the mechanism; Fig. 2, a detail perspective view showing the perforated collar and the chimney and shade-supporting device separated from each other; Fig. 3, a view of a section on line $x x$ of Fig. 1; Fig. 4, a view of a section on line $y y$ of Fig. 1; Fig. 5, a view of the same kind as that appearing in Fig. 3, but showing a modification of the arrangement shown in the preceding figures of the drawings; Fig. 6, a similar view showing in full and dotted lines, respectively, two forms of my invention in which the spiral grooves and ribs are placed on the inner side of the perforated collar; Fig. 7, a view of a vertical section on line $z z$ of Fig. 6; Fig. 8, a similar view showing the construction which I prefer when the ring and supports are within the perforated collar and the spiral grooves extend through the latter.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention has been to provide certain improvements in lamps, whereby the chimney and shade supports can be most easily raised for the purpose of lighting the lamp and lowered again without necessitating any handling of chimney or shade and without causing the lamp to smoke while the chimney and shade-support are raised; and to this end my invention consists in the mechanism and in the parts thereof constructed, arranged, and combined, as hereinafter specified.

In carrying out my invention I prefer to connect the chimney and shade supports together, so that they can be both raised and lowered at one time and connect them adjustably with the usual perforated collar—

such, for instance, as is used in the well-known Rochester lamp—for allowing air to enter the lower end of the chimney around the wick-tube, so that rotation of such supports will cause the latter to move up and down upon said collar, to raise the chimney and shade, to admit free access to the wick for lighting, and return them to their normal positions again. I do not, however, intend to limit myself to a construction in which the chimney and shade supports are permanently connected together, but contemplate using instead, where desired, a shade-holder detachably connected with the chimney-support, so that it can be removed at will and replaced with another to suit any kind or size of shade.

In the form of my invention shown in Figs. 1 to 4, inclusive, the cylindrical perforated collar A, which is in general shape substantially the same as that used in the Rochester and other lamps and surrounds the wick-tube at same distance therefrom, so as to have a free space for the upward passage of the air entering the collar-perforations, is provided with a series of inclined grooves a , preferably, but not necessarily, three in number. These grooves, which can be straight or curved with a cycloidal or other curve, as desired, are all inclined in the same direction, and each one at its upper end communicates with a short horizontal groove a' . From the upper side of the latter extends the vertical groove a^2 , preferably situated at or near the point of joining of the inclined and horizontal grooves and extending up to and through the upper edge of the collar A. Outside of such collar are the two rings B B, rigidly connected together by the posts $b b$, which extend up above the upper ring and have their upper portions shaped to operate as do the ordinary chimney-clamps $b' b' b'$ to receive and hold between them the lower portion of a chimney, which is to rest upon the top ring. Of these posts there are three, placed at equal distances apart.

Attached to the lower ring B, also at equal distances from each other, are the shade-supporting wires or rods C C C of any shape, size, and length to adapt them for the shade to be used. The inner ends of these wires or

rods extend inward beyond the inner face of the ring, so as to form projections to engage the grooves $a a a$ in the perforated collar A. This is the construction that I prefer, though
 5 the lower ring could, if desired, without departure from my invention, be provided with studs or pins separate from the shade-support wires or rods to project into the collar-grooves.

10 Instead of grooving the collar A and providing the lower ring B with the described means for engaging the grooves, the reverse of such construction, as indicated in Fig. 5, can be used—that is, the collar can be provided with ribs $a^3 a^3 a^3$, inclined, as are the
 15 grooves already described, and the ring B can have guide-notches $b^2 b^2$ to embrace the ribs. The two groove-and-rib forms of connections between the ring and the perforated collar
 20 can be placed on the inner side of the latter, as indicated in Fig. 6. The shade-supporting wires or rods C C C should then be attached to the upper ring or to a collar, which can be detachably placed upon the upper
 25 ring or about the chimney-clamps, as in the case of the ordinary detachable shade-holder for lamps and Argand gas-burners. This detachable arrangement I have indicated in dotted lines in Fig. 7.

30 Where the rings B B are to be inside of the perforated collar, I contemplate providing the latter with slots shaped like the grooves already described extending through the collar and having the shade-support wires or rods
 35 pass in through the slots to the lower ring B, all as shown in Fig. 8. In such figure a convenient way of utilizing these rods or wires both to connect the rings B B together and furnish the chimney-clamps $b' b'$ is set forth.
 40 For this purpose the upward extensions of the rods or wires, being fastened to both rings, have their portions above the upper or chimney-supporting ring shaped to form the required chimney-grasping clamps like those
 45 ordinarily used.

Where, as already indicated, the shade-holder is to be made separate from and detachably supported upon the upper ring, I contemplate providing either ring with a
 50 turning knob or handle, (shown in dotted lines at D in Fig. 7,) whereby the rings can be rotated to cause them to be raised or lowered in the manner to be described. Where the shade-holder is attached to either ring,
 55 such a knob is unnecessary, as one or more of the holder wires or rods can be used for the same purpose in turning the rings about the perforated collar.

Wherever the grooves in or slots extending
 60 through the perforated collar are used, they should have substantially the construction shown in Figs. 1 and 2—that is, they should have the inclined portions running at their upper ends into short horizontal grooves or
 65 slots, from some part of which short notches

or slots extend upward through the upper edge of the collar to allow upward and outward passage of the groove-engaging projections on the lower ring B, as and for the purpose hereinafter set forth.

70 The manner of operating a lamp provided with my invention, as described and shown, is, briefly, as follows: With the parts of the lamp in their normal positions, if the chimney is to be raised to enable the lamp to be lighted or
 75 the wick trimmed the connected rings B B are rotated about the perforated collar by means of one or more of the shade-support wires when such support is attached to one of the rings or the turning knob or handle
 80 when the shade-holder is made separable from the rings. This rotation causes the projections engaging the grooves or slots in the perforated collar or the parts of the lower ring engaging the inclined ribs, where such are
 85 used, to ride up the inclined surfaces engaged by them, so that the rings B B, and consequently the chimney and shade supports, will be raised to leave below the upper chimney-carrying ring a clear space, through which
 90 the wick can be readily reached for lighting or trimming. When the groove or slot engaging devices on the lower collar have reached the ends of the inclined portions of the groove or slots, a further rotation of the
 95 rings will carry them into the horizontal portions $a' a' a'$, upon the lower sides of which they will rest, so as to support such rings, and consequently the chimney and shade, in their elevated positions. If, then, it should
 100 be desired to remove the chimney and shade altogether, the rings can be rotated to bring the groove-engaging projections under the notches or grooves $a^2 a^2 a^2$ and then lifted straight upward off of the collar A. When
 105 the chimney and shade holders are to be lowered to their normal positions, the rings B B are simply turned back to carry the projections on the lower ring down the grooves again.

From the above it will be seen that the
 110 chimney and shade supporting mechanism which I have provided is, while most simple and cheap in construction, adapted to enable the chimney or chimney and shade to be quickly and readily raised to expose the wick
 115 without any necessity of touching the shade or chimney or removing either of them from the lamp.

By actual practice I have found that with the chimney and shade supports constructed
 120 and adjustably supported from the perforated collar, as described, their raising and lowering will not cause the lamp to smoke and discolor the chimney, because there is always a clear wide space between the upper ring
 125 or any other part of the chimney and shade supports and the wick-tube through which the air necessary for proper combustion can reach the flame. When the said supports are being raised, the air can reach such space
 130

both through the perforations of the collar and the opening between the top of the perforated collar and the upper ring.

5 Having thus described my invention, what I claim is—

1. In a lamp, in combination with the perforated collar of the burner, having inclined ways, horizontal ways at the upper end of the latter and openings from the upper sides of
10 the horizontal ways, a ring, the chimney-holder supported therefrom, and projections carried by the ring, engaging the ways on the collar, substantially as and for the purpose shown.

15 2. In a lamp, in combination with a collar surrounding the wick-tube at some distance therefrom and having inclined ways, the two rings connected together, chimney-clamps on the upper ring, shade-supporting devices on
20 the lower ring, and means carried by the lower ring to engage the ways on the collar, substantially as and for the purpose shown.

3. In a lamp, in combination with a collar surrounding the wick-tube at some distance
25 therefrom and having inclined ways, the two rings connected together, chimney-holding devices on the upper ring, and the shade-holding wires or rods attached to the lower ring, having portions engaging the inclined
30 ways on the collar, substantially as and for the purpose set forth.

4. In a lamp, in combination with a collar surrounding the wick-tube at some distance therefrom and having inclined ways, the two rings connected together, the chimney-holding
35 devices on the upper ring, and the shade-holding wires or rods attached to the lower ring and extending beyond the inner side thereof into the ways, substantially as and for the purpose set forth.

40 5. In a lamp, in combination with a collar surrounding the wick-tube at some distance therefrom and having inclined grooves and horizontal grooves at the upper ends of the inclined ones, the two rings outside of the
45 collar, the posts connecting such rings, having their upper ends above the upper ring formed to make chimney-holding clamps, and the shade-holding wires or rods attached to the
50 lower ring and projecting beyond the inner side of the latter to form projections to engage the grooves in the collar, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of
55 May, A. D. 1892.

WILLIS BENNER.

Witnesses:

JOHN R. HALSEY, Jr.,
HARRY T. WEEKS.