

(No Model.)

2 Sheets—Sheet 1.

J. C. BRADY.
LAMP BURNER.

No. 565,831.

Patented Aug. 11, 1896.

Fig. 1.

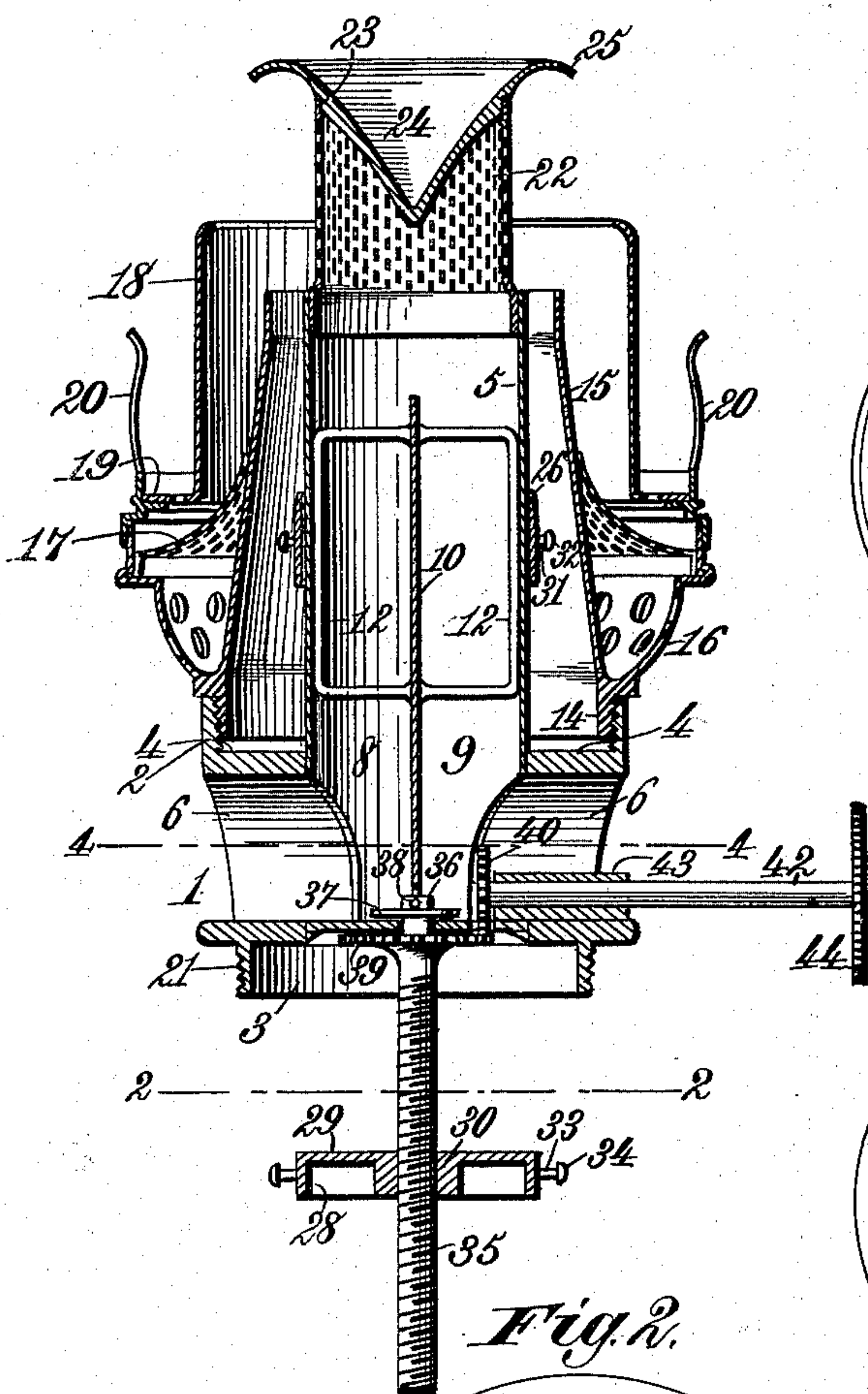


Fig. 3.

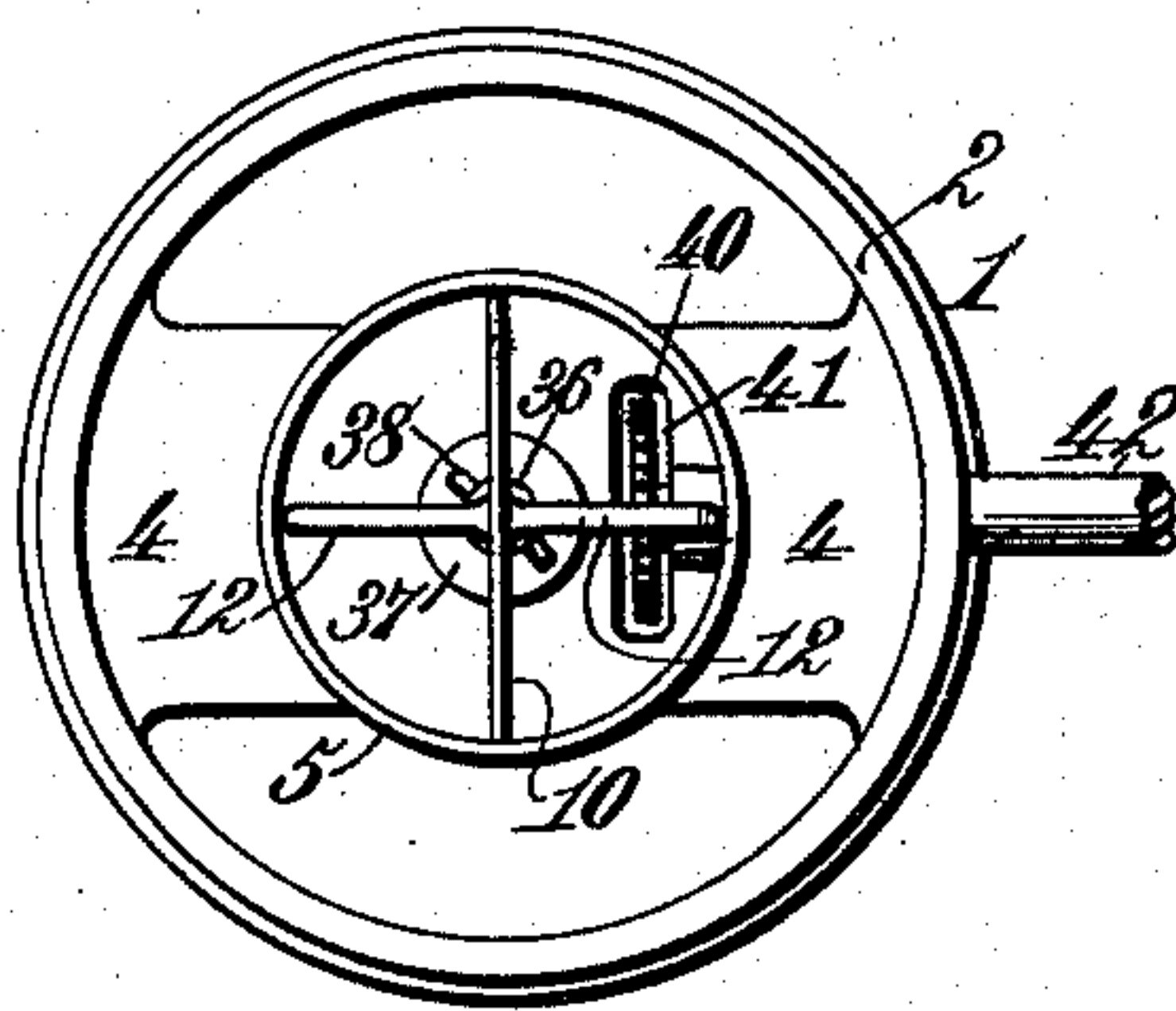


Fig. 4.

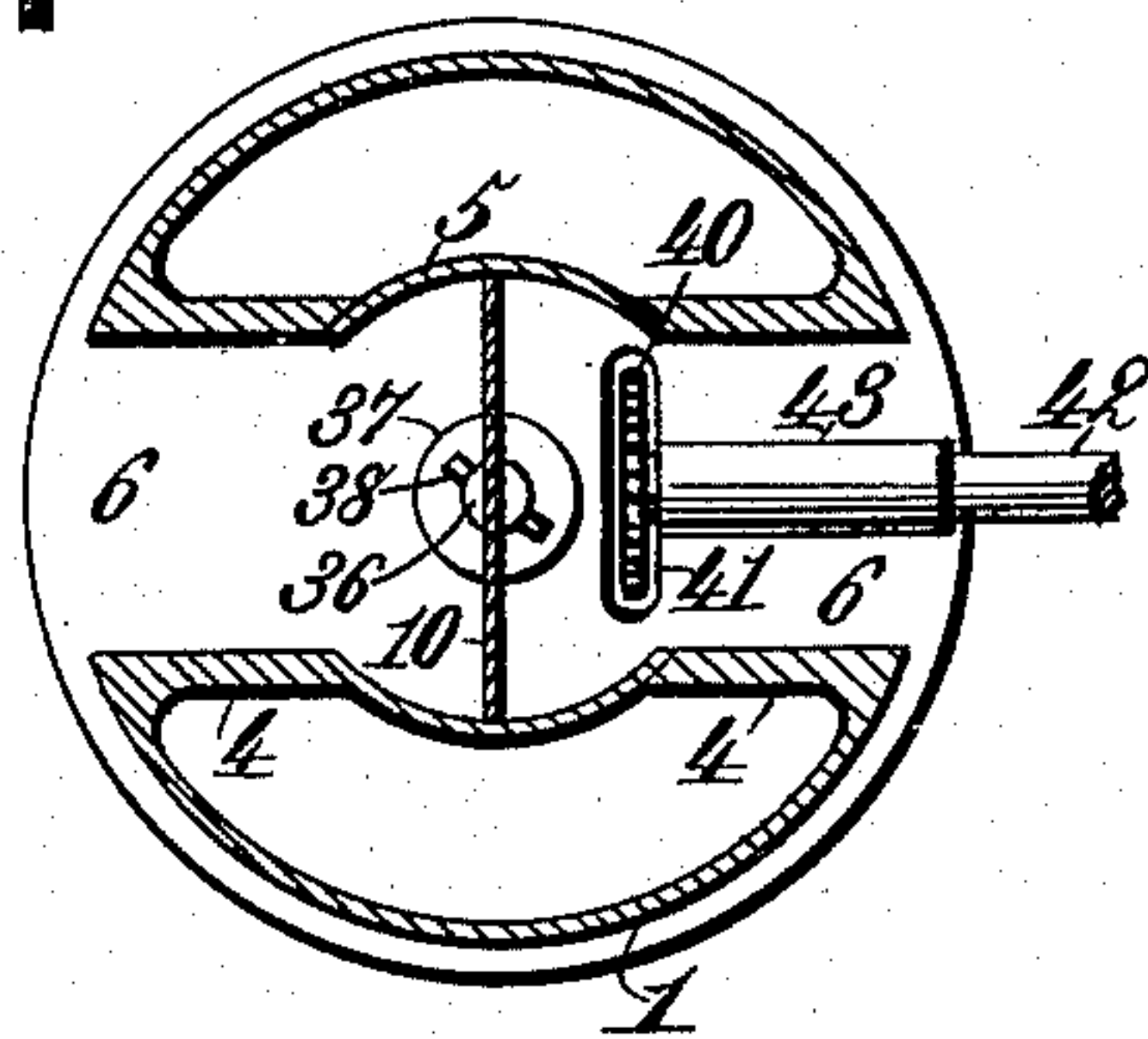
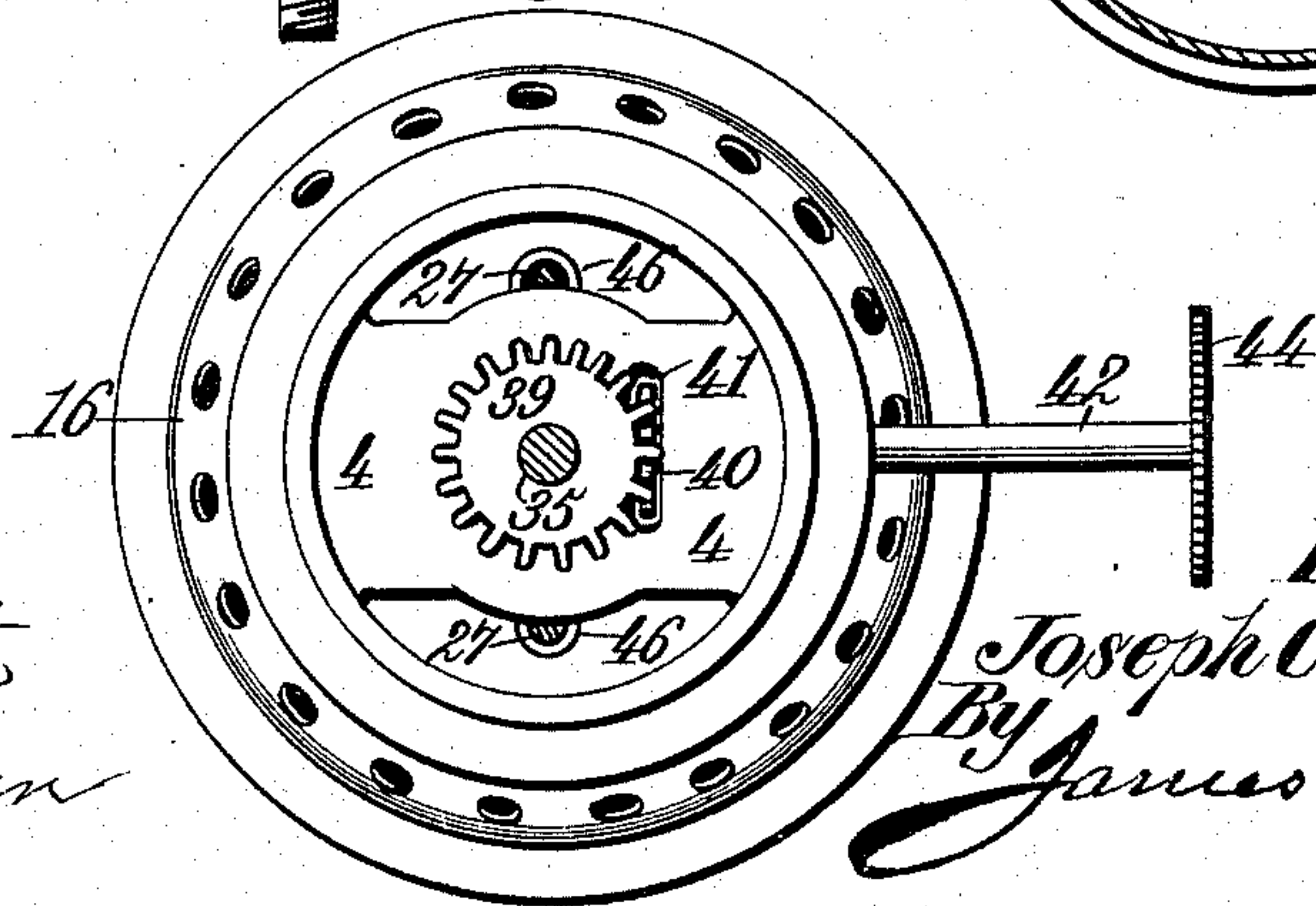


Fig. 2.



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By *James L. Norris*
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Fig. 5.

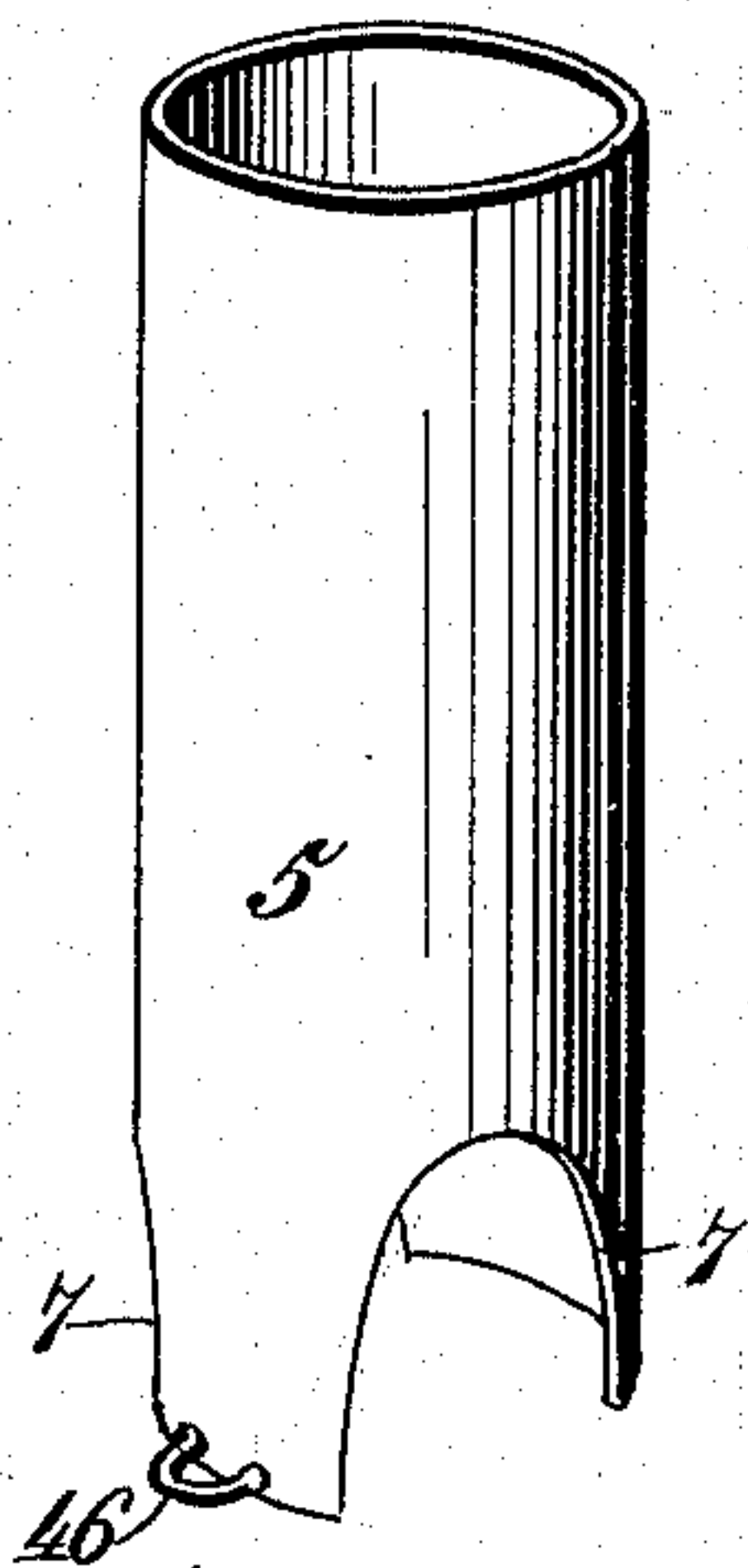


Fig. 6.

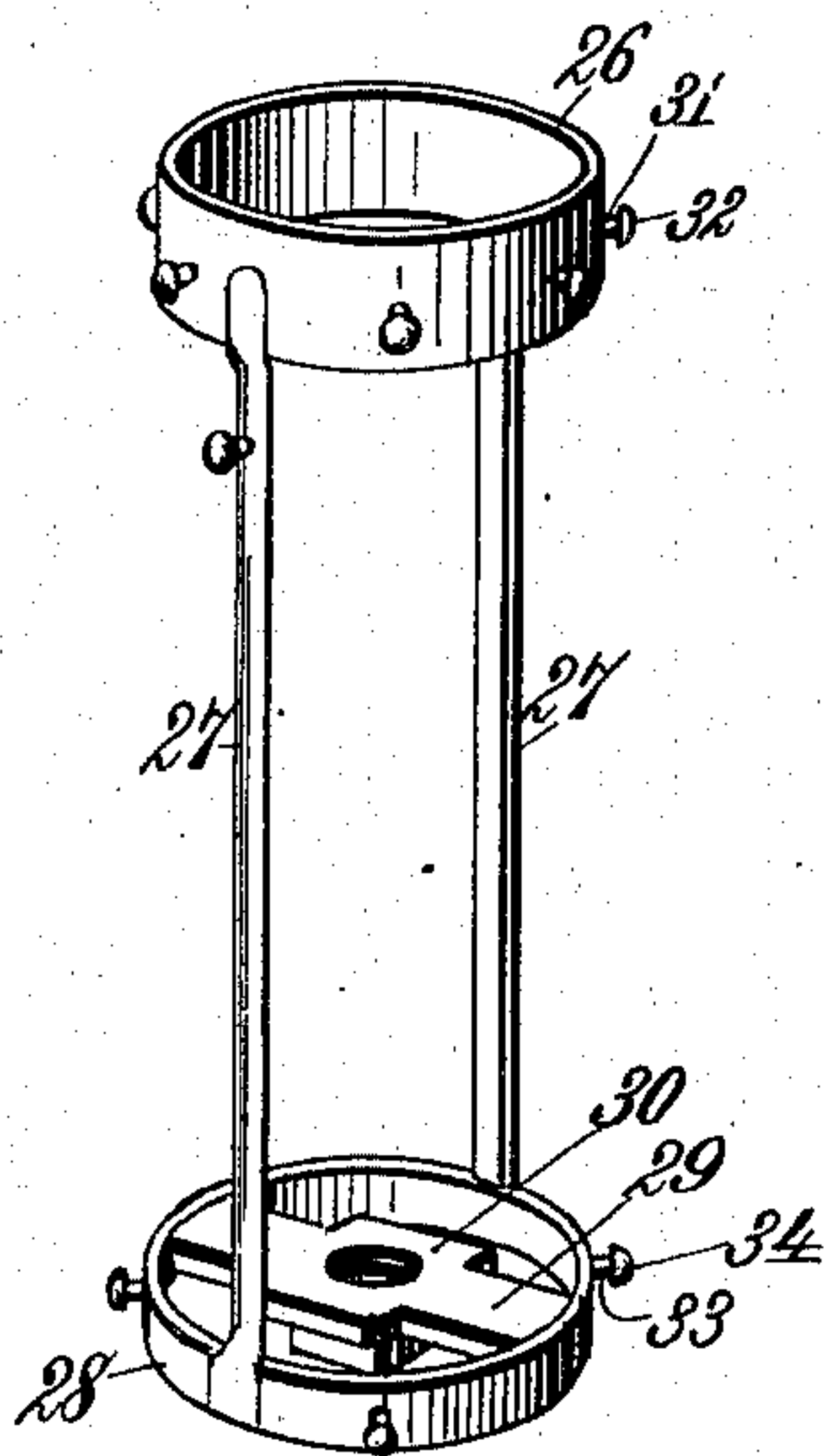


Fig. 7.

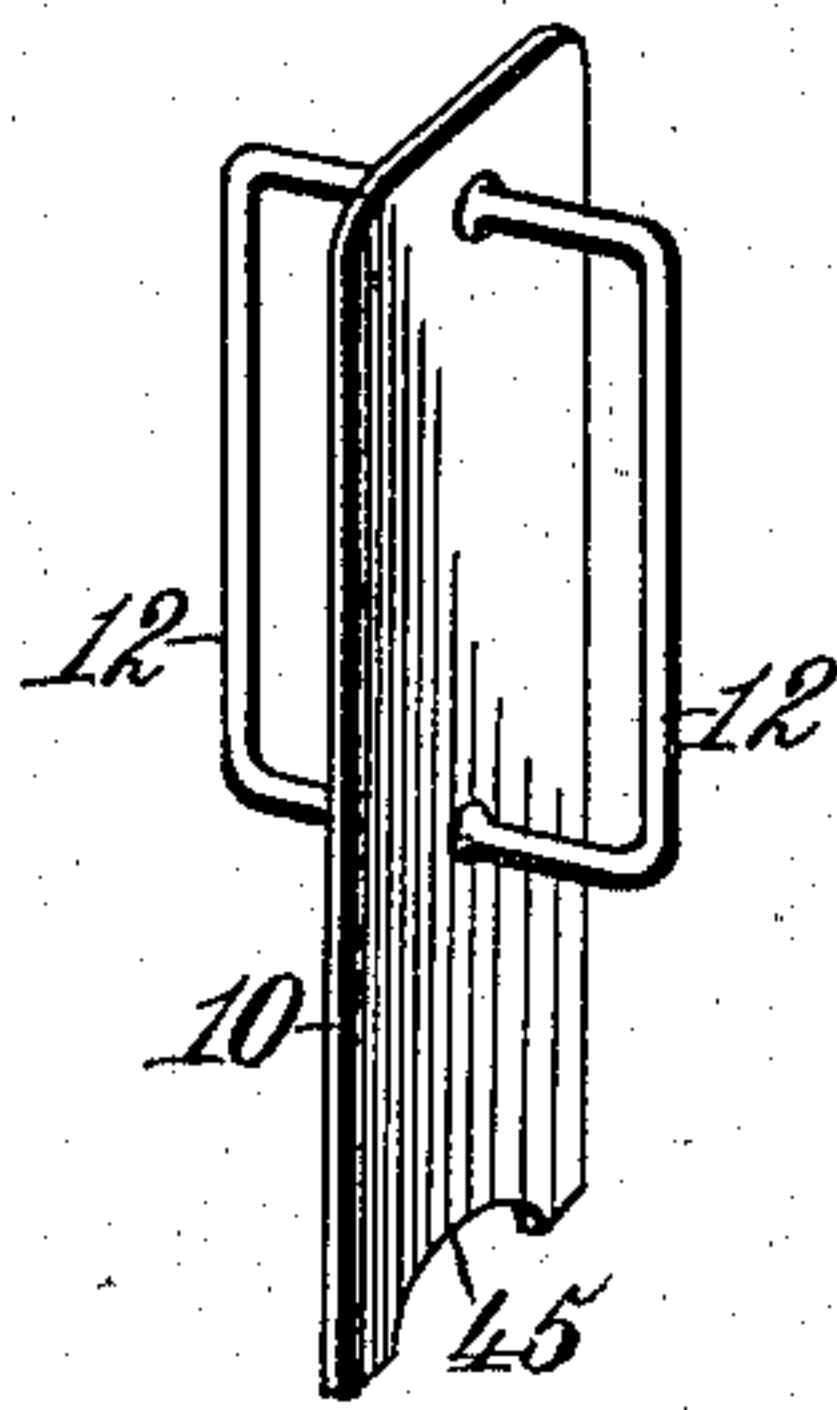
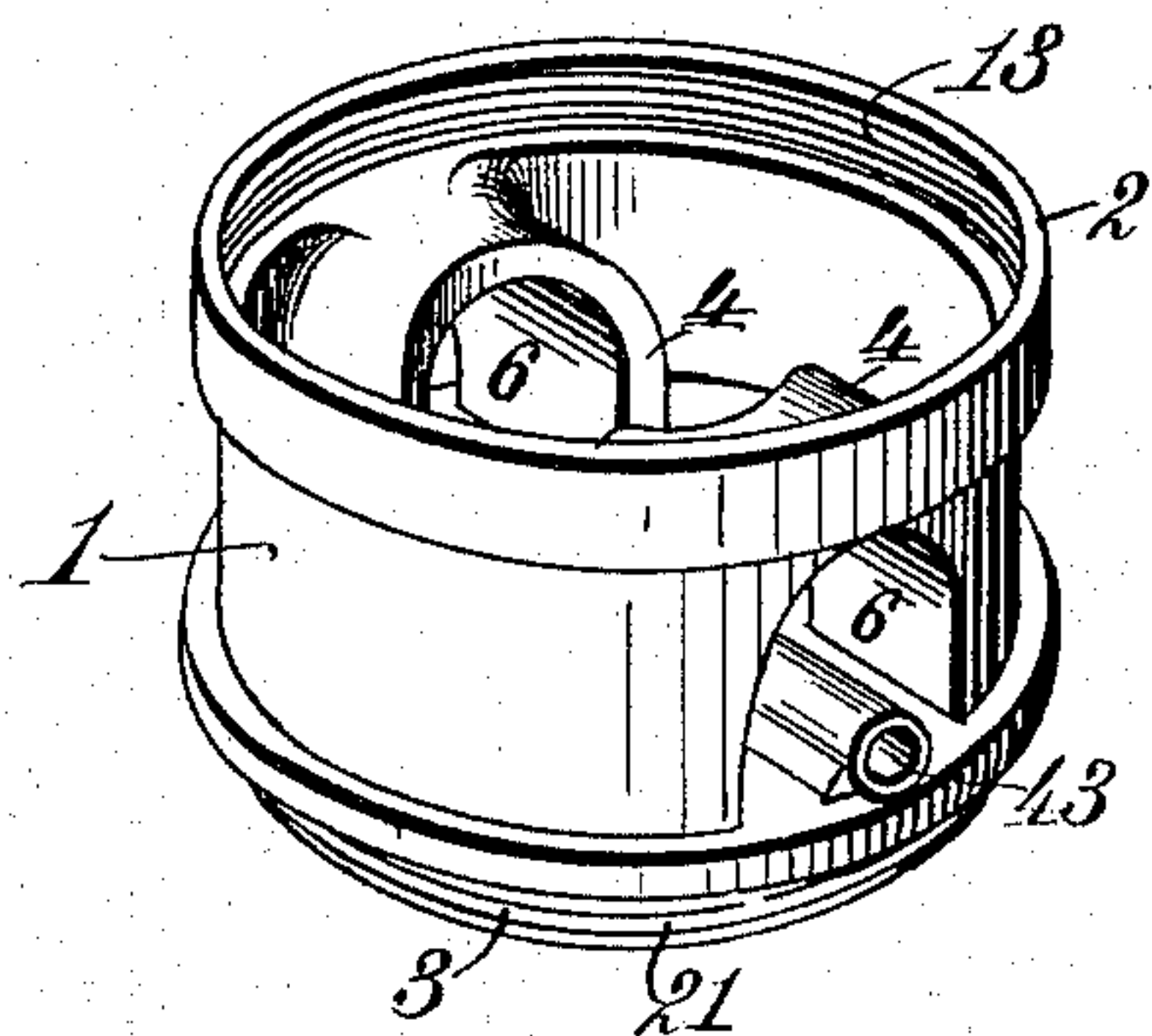


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOSEPH C. BRADY, OF HORNELLSVILLE, NEW YORK.

LAMP-BURNER.

SPECIFICATION forming part of Letters Patent No. 565,831, dated August 11, 1896.

Application filed February 29, 1896. Serial No. 581,286. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH C. BRADY, a citizen of the United States, residing at Hornellsville, in the county of Steuben and State of New York, have invented new and useful Improvements in Lamp-Burners, of which the following is a specification.

This invention relates to Argand or central-draft lamp-burners, and has for its objects to provide novel, simple, efficient, and economical means for improving the air-draft to the flame and securing a more brilliant light; to provide a new and improved wick-carrier and means for adjusting the same to raise and lower the wick, and generally to improve that class of lamp-burners wherein the burner-base is mounted upon a cylindrical subbase having lateral air-inlets communicating with the draft-tube.

To accomplish all these objects my invention involves the features of construction and the combination or arrangement of parts hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a vertical central sectional view of a lamp-burner constructed in accordance with my invention. Fig. 2 is a sectional bottom plan view, the plane of section being on the line 2 2, Fig. 1. Fig. 3 is a top plan view of the subbase, omitting the burner-base and the air distributing and deflecting devices at the upper end of the central draft-tube. Fig. 4 is a sectional view taken on the line 4 4, Fig. 1. Fig. 5 is a detail perspective view of the central draft-tube. Fig. 6 is a detail perspective view of the wick-carrier. Fig. 7 is a detail perspective view of the partition-plate for dividing the central draft-tube, and Fig. 8 is a detail perspective view of the improved subbase.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, in which—

The numeral 1 indicates the annular vertical wall of the improved subbase, on which the burner-base proper is mounted and in which the central draft-tube is fitted and secured. This subbase is cast or formed in a single piece, and is composed of the annular

vertical wall 1, the top collar 2, the bottom collar 3, and the oppositely-arranged inwardly-projecting webs 4, having arched top portions and curved inner edges or ends struck from the center of the central draft-tube 5, so that the latter will accurately fit the curved inner edges or ends of the webs and can be readily brazed or soldered thereto. The inwardly-projecting webs 4 provide opposite lateral air-inlets 6, and the bottom wall of the casting constitutes a support for the lower end of the central draft-tube. This tube is provided at opposite sides of its lower end with openings 7, which register with the lateral air-passages 6, so that air flowing into these passages will enter and rise in the central draft-tube.

The draft-tube is divided vertically into two similar air-passages 8 and 9, Fig. 1, through the medium of a partition-plate 10, having wire loops 12 attached at their extremities to the partition-plate and having their vertical members substantially parallel with the partition-plate, so that they can lie against the internal surface of the central draft-tube for the purpose of centering and properly supporting the partition-plate without in any appreciable degree obstructing the upward flow of air through the vertical passage-ways of the draft-tube. The partition-plate serves, as usual, to compel the air entering the lateral passages 6 to ascend in the central draft-tube instead of passing transversely through the lateral passages of the subbase without ascending the draft-tube, as might occur if the partition-plate were not present.

The wire loops can be economically and easily manufactured and applied to the partition-plate, and they constitute simplified devices for centering and supporting the draft-tube, as above stated. The loops are each composed of a single piece of wire bent into approximately U-shaped form, with the extremities soldered to the partition-plate.

The top collar 2 of the subbase is provided with an internal screw-thread 13, with which engages the screw-threaded neck 14 on the lower end of the burner-base, which comprises the outer tapering wick-tube 15, the perforated annular body 16, the conoidal-shaped perforated air-diffuser 17, the flame-

dome 18, the gallery 19 for supporting the chimney or globe, and spring-fingers 20 for retaining the latter in position.

The bottom collar 3 of the subbase is provided with an external screw-thread 21, designed to screw into the usual socket of the lamp fount or reservoir.

The central draft-tube 5 is in the form of a cylinder, and in its upper end is inserted a cylindrical perforated air-distributor 22, the top edge of which is fitted into an annular groove 23 in the surface of an inverted imperforate cone 24, having a curved outwardly-projecting base 25. The cylindrical air-distributor 22 is removably fitted into the outer end of the central draft-tube, and the conical air-deflector 24 is supported directly by the upper end of the air-distributing cylinder, thereby dispensing with the usual central spindle designed to support the air-deflector at some little distance above the upper end of the air-distributing cylinder. The spindle referred to is objectionable in that it in a measure interferes with the free flow and distribution of the air, and, furthermore, renders it necessary to provide a socket or sleeve at the center of the deflector to engage the spindle. In my improvement the external surface of the cone is constructed with a groove or seat, into which the upper end of the air-distributing cylinder is directly fitted, by which means the construction is materially simplified.

The wick is designed, as usual, to lie between the tapering exterior wick-tube 15 and the central draft-tube 5, and the wick is split in the ordinary manner to extend through the subbase at opposite sides of the arched inwardly-projecting webs 4.

The wick carrier and adjuster comprises an upper ring 26, encircling and slidable upon the exterior of the central draft-tube. The upper ring is connected by oppositely-arranged connecting-rods 27 (best seen in Fig. 6) with a lower ring 28, having a cross-bar 29, provided with a centrally-arranged internally screw-threaded nut 30. The upper and lower ends of the connecting-rods 27 are secured, respectively, to the upper and lower rings 26 and 28 in such manner that any movement imparted to the lower ring is transmitted to the upper ring.

The upper ring 26 is provided with a plurality of laterally-projecting pins 31, having enlarged heads 32, and the lower ring 28 is provided with a plurality of similar pins 33, having enlarged heads 34. The lamp-wick is designed to be stretched or partially stretched between the upper and lower rings, and to be engaged with the pins 31 and 33 in such manner that the enlarged heads of these pins securely retain the wick in engagement with the pins and effectually prevent accidental disengagement of the wick from the pins when the wick-carrier is raised or lowered to adjust the wick.

The central screw-threaded nut 30 of the

lower ring 28 engages a screw-threaded shaft 35, having its upper end provided with a journal 36 rotatably mounted in a central orifice in the bottom wall of the subbase. The journal 36 is retained in operative connection with the subbase through the medium of a washer 37 and a transverse pin 38, but obviously any other suitable device may be employed for journaling the upper end of the screw-threaded shaft in the bottom of the subbase.

The screw-threads of the shaft may be constructed in any manner suitable for the purpose in hand. For the purpose of rotating the screw-threaded shaft it is provided with a rigidly-attached spur-gear 39, arranged directly under the bottom wall of the subbase, and with the spurs or teeth of which the teeth of a pinion 40 are adapted to engage. The pinion 40 projects through a slot 41 in the bottom wall of the subbase, so that the horizontal shaft 42 of the pinion can lie above the bottom wall of the subbase and be journaled in one of the lateral air-inlets 6 thereof. The shaft 42 is mounted in a bearing 43 secured to the bottom wall of the subbase, and centrally placed in one of the lateral air-inlets 6, as will be clearly understood by reference to Figs. 1 and 4.

The outer end of the pinion-shaft is provided with a hand-wheel 44, by which to rotate the shaft, and thereby impart a rotary motion to the pinion 40, spur-gear 39, and screw-shaft 35 for the purpose of raising or lowering the wick-carrier, according to the direction in which the hand-wheel 44 is rotated. When the hand-wheel is rotated, a rotary motion is imparted to the screw-threaded shaft, and the screw-threaded nut 30 is caused to traverse this shaft, so that if the shaft be turned in one direction the wick-carrier is raised, and if the shaft is turned in the reverse direction the wick-carrier is lowered. By this means the lamp-wick can be accurately, quickly, and conveniently adjusted.

The screw-threaded shaft is arranged coincident with the axis of the central draft-tube, and the nut 30 is connected through the medium of the collar 28 and rods 27 with the upper ring 26, so that the latter is held perfectly level and can be raised and lowered uniformly and evenly without any binding action against or upon the central draft-tube.

The single screw-threaded shaft for raising and lowering the wick-carrier is desirable, but heretofore it has been arranged at one side of the wick-tube to raise and lower the wick-carrier, which latter is caused to tilt and bind against the tube. This is objectionable in that the parts do not easily and smoothly operate. This objection is avoided by arranging the screw-threaded shaft coincident with the axis of the central draft-tube and connecting the nut with the upper ring 26 by oppositely-arranged connecting-rods.

The arrangement of the shaft-bearing 43 in one of the lateral air-inlets of the subbase en-

ables the pinion-shaft to be journaled on the subbase without constructing the latter with a special perforation for the passage of the shaft.

5 The lower end of the partition-plate 10 is notched or cut away at 45, Fig. 7, to accommodate the upper end of the journal 36 of the screw-threaded shaft 35, so that the partition-plate can bear directly against the bottom
10 wall of the subbase.

The lower end of the central draft-tube is provided with two oppositely-arranged guide eyes or loops 46, through which pass the connecting-rods 27 of the wick-carrier. The con-
15 necting-rods are adapted to slide vertically in the guide eyes or loops, and as the rods are rigidly connected with the upper and lower rings 26 and 28 the screw-nut 30, carried by the lower ring 28, is held against rotation
20 when the screw-threaded shaft 35 is turned to raise or lower the wick-carrier.

The construction of the subbase in a single piece or as a single casting enables it to be very economically manufactured, and is
25 very desirable in the production of a comparatively inexpensive but perfectly operating and useful lamp-burner.

The various features of construction which constitute my invention contribute to the pro-
30 duction of a new and improved lamp-burner which will in practice fulfill all the conditions required in securing a practically unobstructed supply of air to support combustion and obtain a brilliant flame.

35 The manner of constructing the subbase and fitting and securing the central draft-tube therein are features which I regard of importance, in that they greatly simplify the manufacture of that class of lamp-burners
40 having a subbase provided with lateral air-inlets communicating with a central draft-tube.

Having thus described my invention, what I claim is—

45 1. The combination with the central draft-tube of a lamp-burner, of a partition-plate arranged in said tube and provided with attached supports composed of strips of wire having their extremities secured to the par-
50 tition-plate and constructed with members which bear against the internal surface of the draft-tube to center the partition-plate without materially obstructing the draft there-
through, substantially as described.

55 2. The combination with a subbase having lateral air-passages, a burner-base mounted on the subbase, and a central draft-tube inserted and secured within the subbase and having openings communicating with the lat-
60 eral edges thereof, of a central partition-plate arranged in the draft-tube and resting against the bottom wall of the subbase, and U-shaped wire loops having their extremities secured to the partition-plate and constructed with
65 vertical members arranged substantially parallel with the partition-plate and bearing

against the internal surface of the central draft-tube, substantially as described.

3. The combination with a lamp-burner having a subbase from which rises a central
70 draft-tube, of a wick-carrier composed of upper and lower rings, connecting-rods extending from the upper ring through the subbase to the lower ring, a nut carried by the lower ring, a rotary screw-threaded shaft engaging
75 the nut and provided with a pinion, and means for rotating the pinion from the exterior of the burner, substantially as described.

4. The combination with a lamp-burner having a subbase, and a central draft-tube
80 rising from the subbase, of an upper wick-carrying ring sliding on the draft-tube, vertical rods extending from the upper ring and slidable through the said base, a lower wick-carrying ring suspended at the lower ends of
85 said rods and provided with a nut, a rotary screw-threaded shaft engaging the nut, and means for rotating said shaft, substantially as described.

5. The combination with a lamp-burner
90 having a subbase from which rises a central draft-tube, of a wick-carrier composed of upper and lower rings, the upper ring lying upon the draft-tube and the lower ring lying below the subbase, vertical rods extending
95 from the upper ring through the subbase to the lower ring, a nut carried by the lower ring, guides through which the connecting-rods pass, a rotary screw-threaded shaft en-
100 gaging said nut and having its upper end journaled in the bottom wall of the subbase coincident with the axis of the central draft-tube, a spur-gear on the screw-threaded shaft, and a pinion-shaft having a pinion engaging
105 the spur-gear and provided at its outer end with a device for rotating the same, substan-
tially as described.

6. The combination with a lamp-burner having a central draft-tube, and a subbase
110 provided with lateral air-passages communicating with the central draft-tube, of a shaft-bearing arranged in one of said lateral air-passages of the subbase, a shaft journaled in said shaft-bearing and having at one end
115 a pinion which projects through a slot in the bottom of the subbase, a screw-threaded shaft journaled at the center of the subbase in a line coincident with the axis of the draft-tube, a spur-gear mounted on the screw-threaded shaft and engaging the pinion, and
120 a wick-carrier composed of a nut engaging the screw-threaded shaft, a lower ring on which the nut is mounted, an upper ring slidable on the draft-tube, and connecting-
125 rods extending from the upper ring through openings in the subbase to the lower ring, substantially as described.

7. The combination with a lamp-burner having a central draft-tube, and a subbase
130 having lateral air-passages communicating with the draft-tube, of a wick-carrier composed of upper and lower rings provided with

laterally-projecting pins having enlarged heads for engaging and holding the wick, and rods passing from the ring through the subbase to the lower ring for connecting the 5 two rings, and means for raising and lowering the wick-carrier, substantially as described.

8. The combination with a lamp-burner having a central draft-tube, and a subbase having lateral air-passages communicating 10 with the central draft-tube, of a wick-carrier composed of upper and lower rings having laterally-projecting pins provided with enlarged heads, rods connecting the two rings, and sliding through the subbase, a nut car- 15 ried by the lower ring, a screw-threaded shaft with which the nut engages, and devices for rotating the shaft from the exterior of the lamp-burner, substantially as described.

9. The combination with a lamp-burner 20 base, of a subbase having lateral air-passages, a central journal-bearing, and a slot in proximity to said bearing, a central draft-

tube fitted into the subbase and communicating with the lateral air-passages thereof, a rotary screw-threaded shaft having a jour- 25 nal arranged in the journal-bearing of the subbase, a spur-gear arranged on the shaft, a pinion extending through the slot of the subbase and engaging the spur-gear, a shaft for rotating the pinion, a nut engaging the 30 screw-shaft, upper and lower wick-carrying rings, connecting-rods, extending from the upper ring through guides in the subbase to the lower ring, whereby the rings are connected and prevented from rotating, substan- 35 tially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOS. C. BRADY.

Witnesses:

ALBERT H. NORRIS,
NATHAN H. ROBBINS.