

No. 799,581.

PATENTED SEPT. 12, 1905.

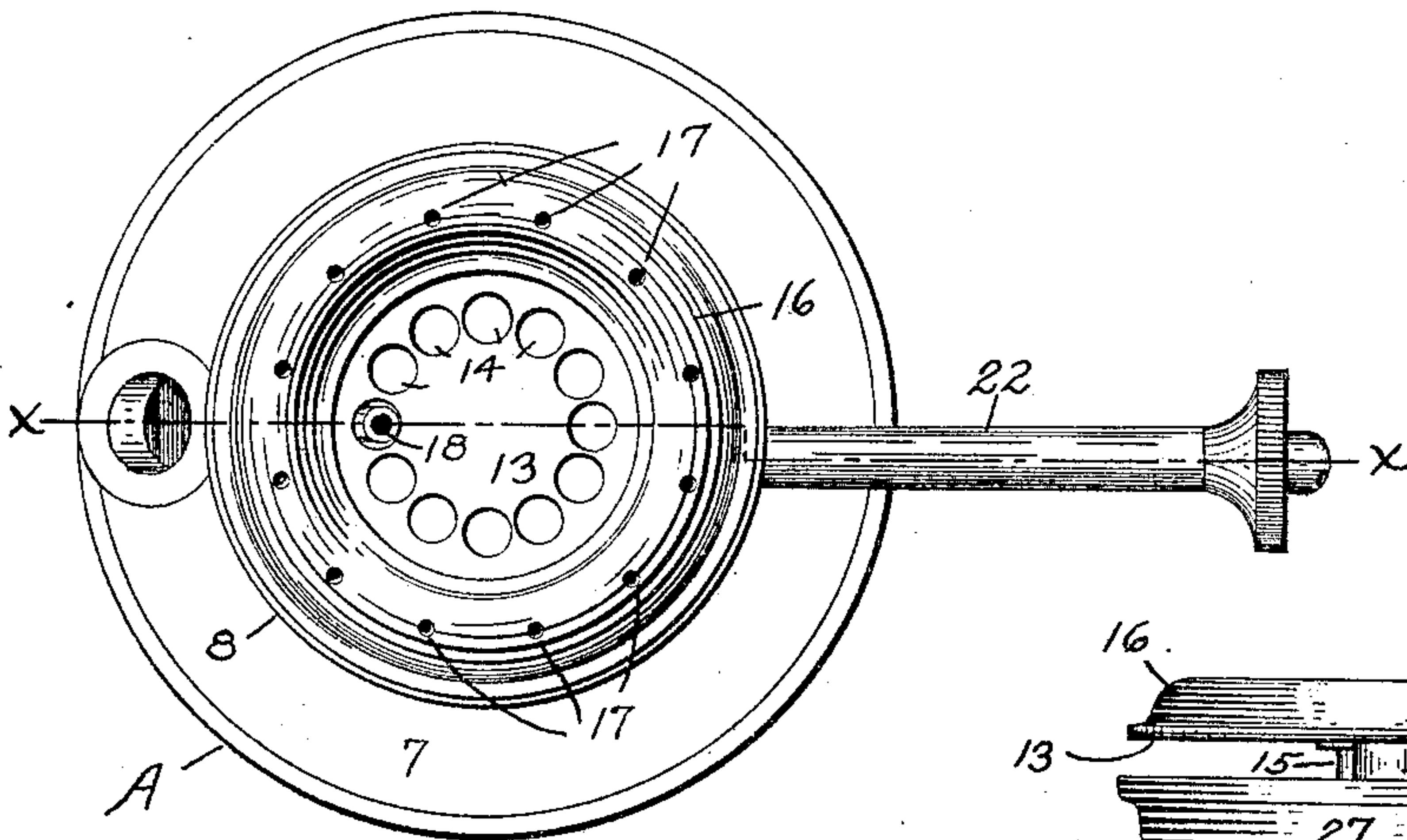
C. E. TREWHELLA.

VAPOR LAMP.

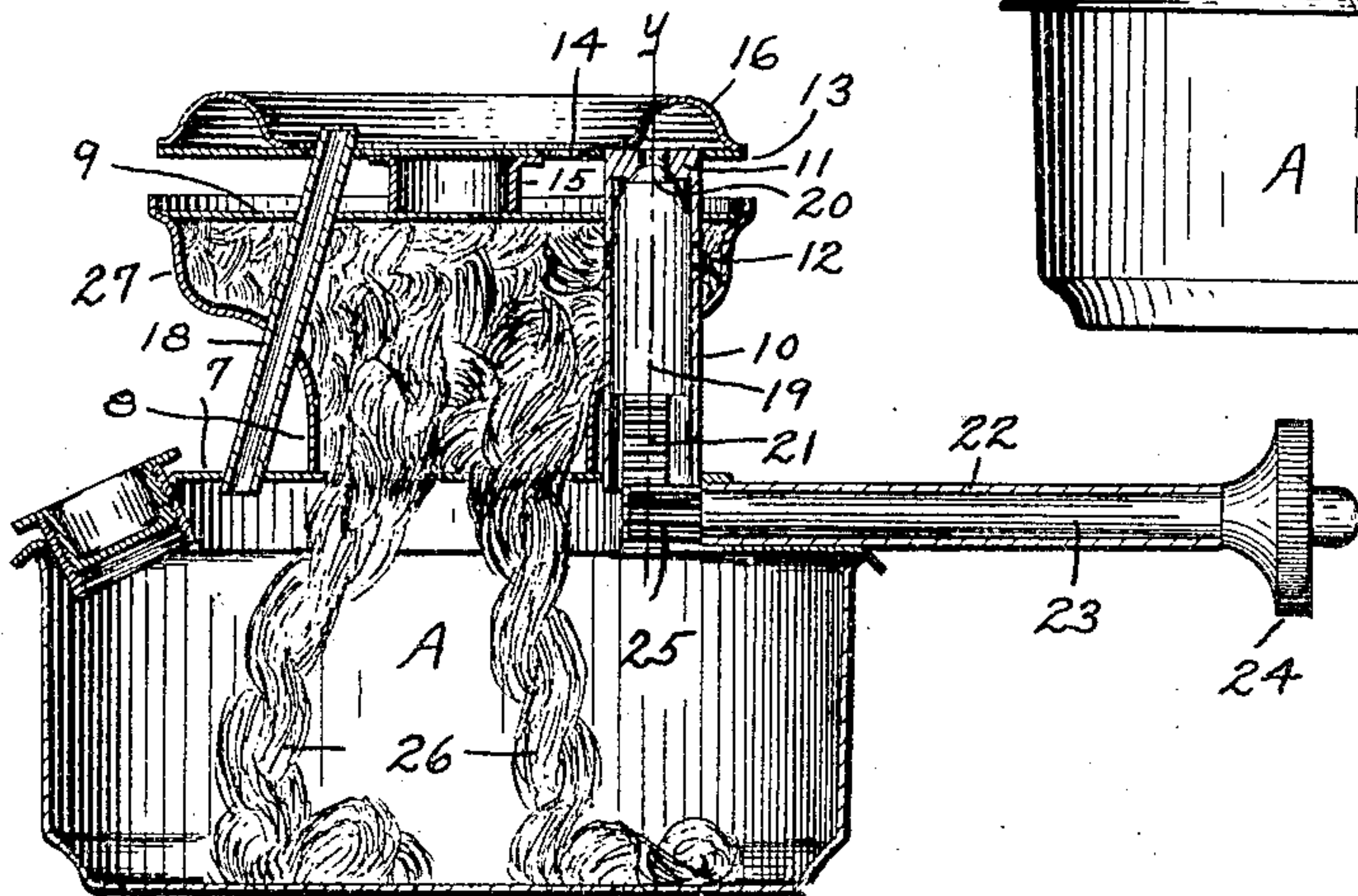
APPLICATION FILED MAY 9, 1905.

2 SHEETS—SHEET 1.

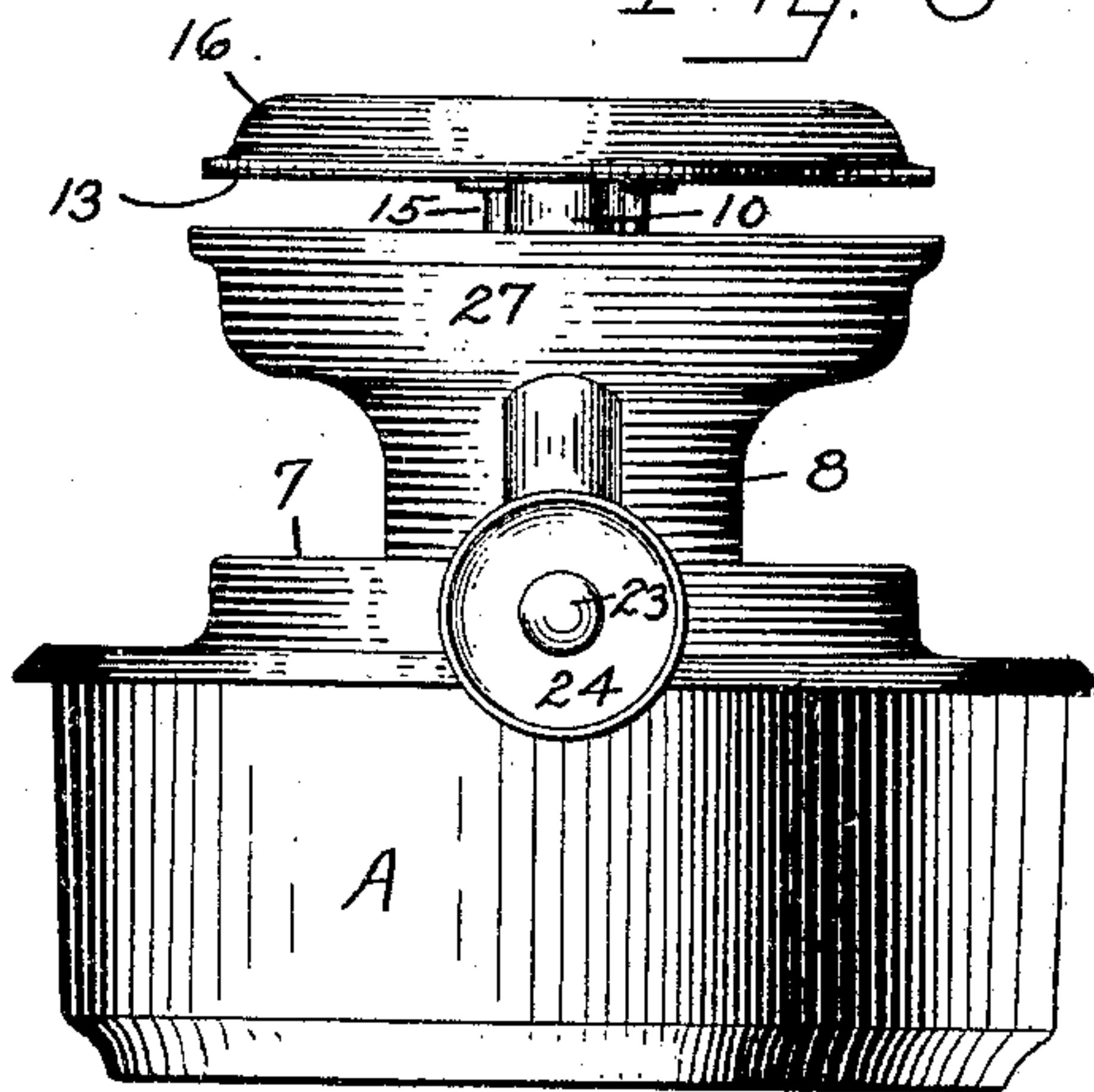
*Fig. 1*



*Fig. 2*



*Fig. 3*



Witnesses.

Fred E. Potter.

P. J. Egan

Inventor

Charles E. Trehella

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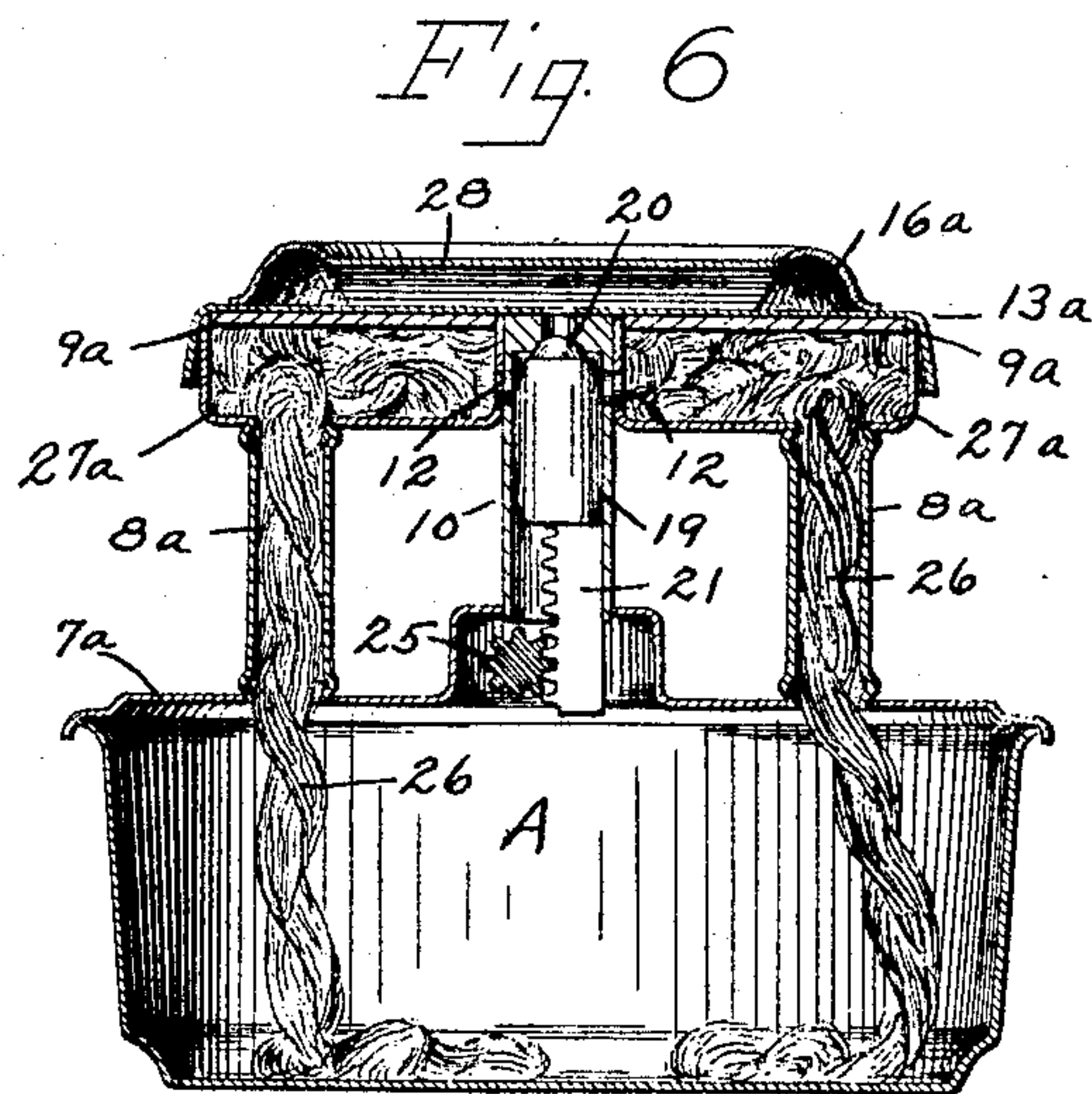
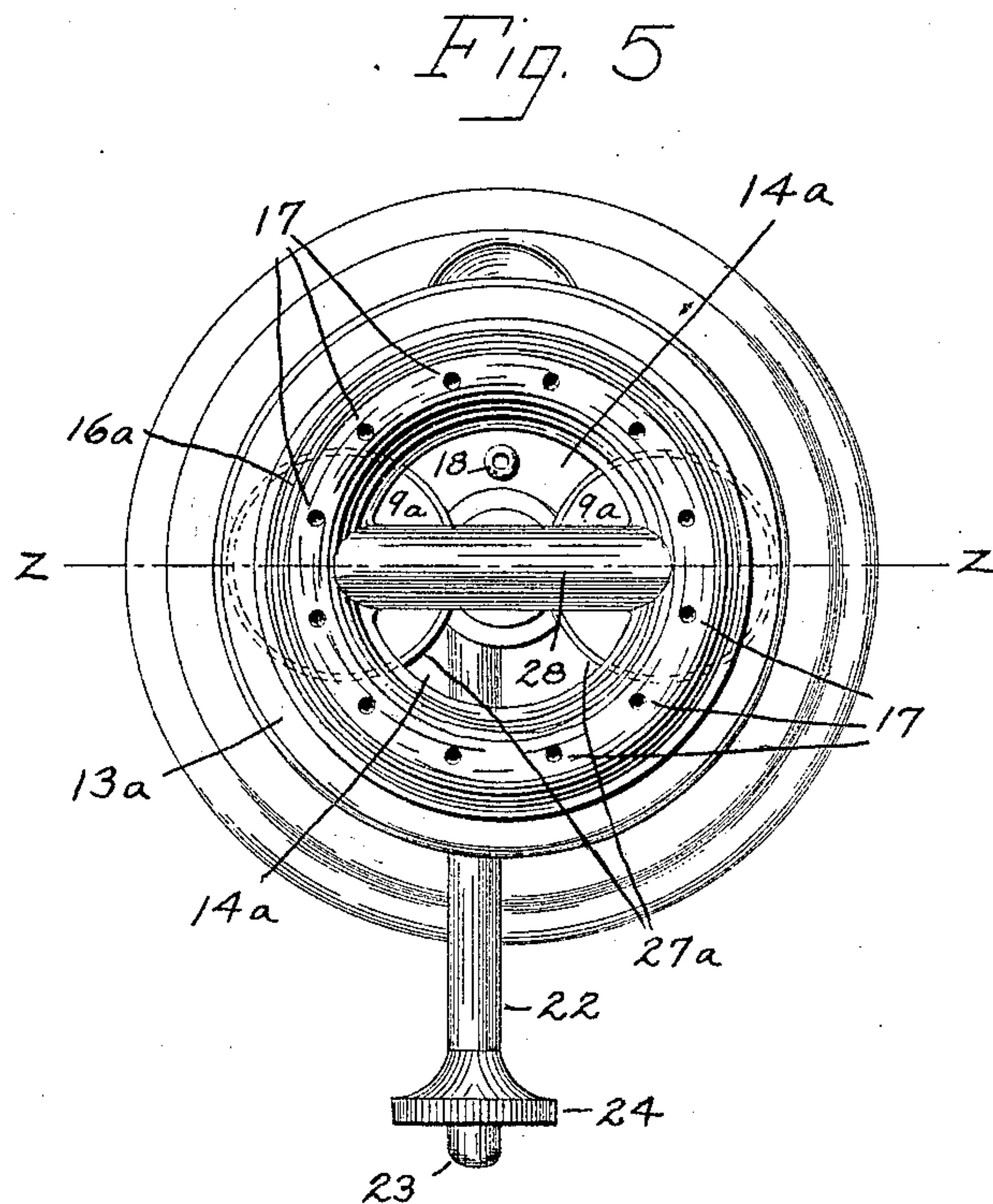
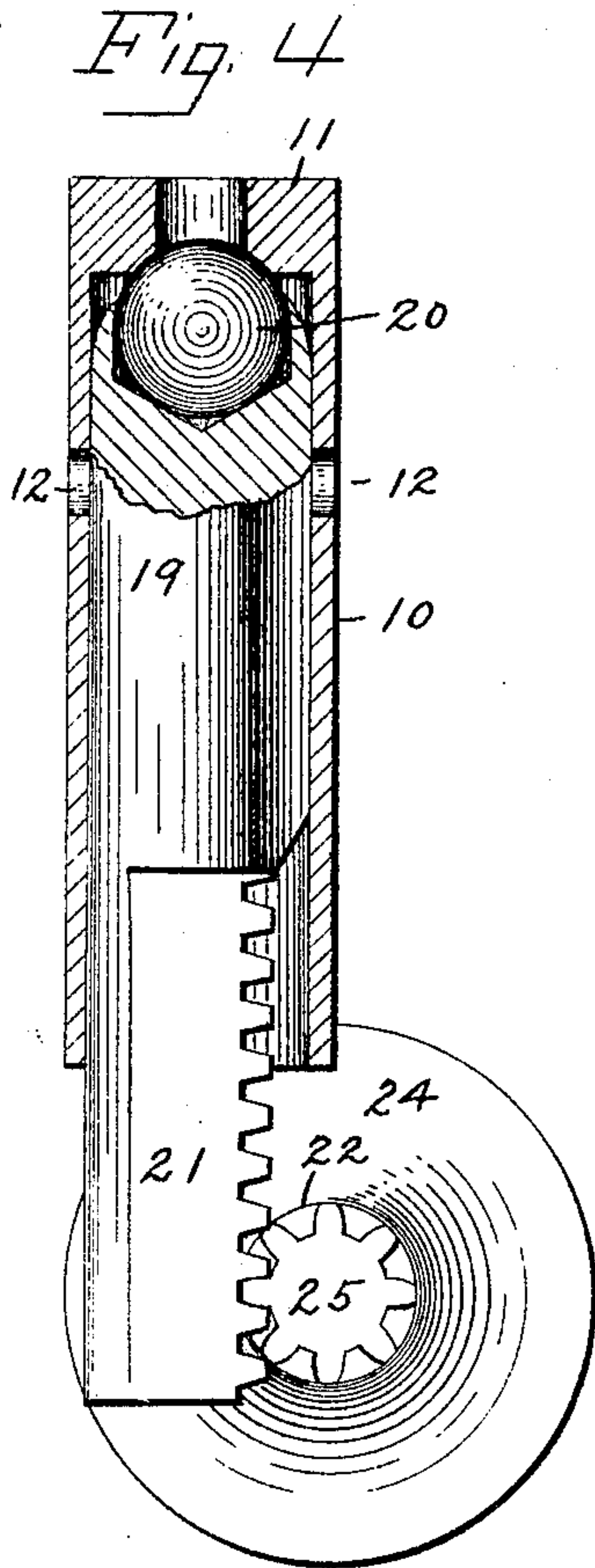
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2 SHEETS—SHEET 2.



Witnesses.  
Fred E. Potter.  
P. J. Egan

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# UNITED STATES PATENT OFFICE.

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RATION.

## VAPOR-LAMP.

No. 799,581.

Specification of Letters Patent.

Patented Sept. 12, 1905.

Application filed May 9, 1905. Serial No. 259,503.

*To all whom it may concern:*

Be it known that I, CHARLES E. TREWHELLA, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Vapor-Lamps, of which the following is a specification.

My invention relates to improvements in vapor-lamps for heating chafing-dishes, coffee-percolators, and the like; and the objects of my improvement are simplicity and economy in construction, with convenience and efficiency in use, particularly with reference to a simple and effective cut-off valve and to the construction for preventing the lamp from being excessively heated.

In the accompanying drawings, Figure 1 is a plan view of my lamp. Fig. 2 is a vertical section of the same on the offset line  $xx$  of Fig. 1. Fig. 3 is a side elevation of the same. Fig. 4 is a detached sectional elevation of the valve and connected parts on the line  $y$  of Fig. 2. Fig. 5 is a plan view of my lamp in a modified form and on the same scale as Fig. 1. Fig. 6 is a sectional elevation of the same on the line  $zz$  of Fig. 5.

The lamp-font A and its top 7 are or may be of any ordinary construction. On the top 7 and concentric with the font I mount a flaring or bell-shaped wick-tube 8, with its bell-shaped end forming an enlargement 27 of the wick-receptacle at the top. I close the upper end of the said enlargement by a plate or cap 9. A valve-tube 10, having a perforated end 11, that forms a valve-seat, is extended from the lamp-font upwardly through the enlarged or bell-shaped upper end of the wick-tube, the upper end of the said valve-tube extending upwardly above the top plate or cap 9. That portion of the valve-tube that passes through the wick-tube is provided with one or more orifices 12 to admit gas from the wick-receptacle into the valve-tube. A plate 13, which serves as a jet-ring base, is mounted at the upper end of the valve-tube and at a distance from the cap 9 of the wick-tube, so that air can flow freely under the said plate 13 and up through its central opening or openings 14. This plate 13 may be additionally supported in place by means of any suitable standard 15. The plate 13 is perfo-

rated, so that the perforation in the end 11 of the valve-tube communicates with the upper side of the said plate. Upon the plate 13 I place the ordinary and well-known form of jet-ring 16, whereby the said ring and plate form a gas-chamber that directs the gas coming through the valve-seats to the jets 17 in the jet-ring. The lamp may be provided with any ordinary form of vent—as, for example, the vent-tube 18. I form the valve of a slide 19 and ball 20, loosely mounted in a socket in the upper end of the slide. The body of the slide is round to fit the valve-tube, and its lower end is provided with a rack 21. A sleeve or tubular bearing 22 is mounted on the lamp-font and carries an operating-rod 23, having a knob or thumb-turn 24 at one end and a pinion 25 at its other for engaging the rack of the valve-slide. The upper portion of the wick-tube is filled with any ordinary form of wick or wicks 26, that pass down through the top plate into the font through one or more openings in the said top plate.

In the modified form shown in Figs. 5 and 6 I employ the same valve and operating-rod as before with the same reference-numerals. The top plate 7<sup>a</sup> of the font A is of a somewhat different form. I employ two wick-tubes 8<sup>a</sup> instead of only one and mount them over suitable openings on the top plate on diametrically opposite sides. I surmount each tube 8<sup>a</sup> with wick-receptacle 27<sup>a</sup>, preferably of a round form, but of much less diameter than the jet-ring 16<sup>a</sup>. I cover each wick-receptacle with a cap 9<sup>a</sup>, so as to close the top of the said receptacle. The valve-tube lies in between the two wick-receptacles and closely to the sides thereof, so that the valve-tube may communicate with the interior of the wick-receptacles by means of holes that register with the holes 12 in the sides of the valve-tube. The jet-ring base 13<sup>a</sup> rests directly on the top of the wick-receptacles, but these receptacles are so small that a large portion of the jet-ring base is left exposed to the atmosphere. A curved plate 28 spans the middle of the jet-ring and passes over the valve-seat, the ends of the said plate opening into the jet-ring on each side, so that gas can flow from the valve



through the channel formed by the said curved plate and middle portion of the jet-ring base into the jet-ring. Openings 14<sup>a</sup>, Fig. 5, are in the jet-ring base 13<sup>a</sup>, so that the atmosphere may pass under the jet-ring and up through the center thereof. The wick-tubes and wick-receptacles are filled with any suitable wick or wicks 26.

The font is supplied with any suitable fluid for generating a gas or vapor—as, for example, alcohol. The operating-rod is turned so as to lower the valve-slide and valve to open the passages 12 from the wick-tube or wick-receptacles into the valve-tube and upper end 11 of the valve-tube to the interior of the jet-ring. Heat is applied in any ordinary manner to the upper portion of the confined wicks to generate a gas which may be ignited as it flows from the jets in the jet-ring. When once started, the flame at the jet-ring gives the requisite heat to generate gas, so that the lamp burns as long as gas passes into the ring through the valve-seat. In order to stop the flame, the valve is forced upwardly to its seat by means of the thumb-turn and connected parts into the position shown in Figs. 2, 4, and 6. The ball should be sufficiently loose in its socket in the end of the valve-slide that it may move a little to either side and seat itself squarely on the valve-seat so as to wholly cut off the gas. The valve-tube serves as a suitable guide for the valve-slide and also as a conductor through which the gas passes from the wick-tube to the valve-seat. The flame will vanish immediately after closing the valve. It is essential that the valve shall close tightly; otherwise the flame would not be extinguished. Ordinarily there will be friction enough, especially after the lamp has been used, to make the slide and valve stay in whatever position they may be set; but it is immaterial after the flame is once extinguished whether the valve stays up or not, except that it must be opened before the lamp is used again. In both constructions the atmosphere is admitted to the central portion of the jet-ring to insure perfect combustion. In the construction first described the whole under side of the jet-ring (except that occupied by the valve-tube) is open to the atmosphere for a considerable distance above the wick-tube, so that air passes freely under the jet-ring base and up through the center of the jet-ring, with a continual tendency to reduce the heat and prevent the lamp-font from being heated to the same extent that it would be if such provision for passing air under the ring was not made. At the same time there is ample heat for generating gas. In the construction shown in Figs. 5 and 6 the atmosphere freely passes up under a large portion of the jet-ring and up through the ring for the same purpose.

I claim as my invention—

1. In a vapor-lamp having a font, a single wick-tube mounted on the said font and having an enlarged upper end forming a wick-receptacle, a cap-plate covering the top of the said receptacle, a jet-ring base elevated above the said cap-plate with an air-space between, a jet-ring mounted on the said base, a valve-tube having a valve-seat at its upper end that opens into the said jet-ring, the said tube also opening into the wick-receptacle and a valve for closing the opening through the said valve-seat.

2. In a vapor-lamp having a font, a single wick-tube mounted on the said font and having a bell-shaped upper end, a cap-plate covering the top of the said bell-shaped upper end, a valve-tube extending from the lamp-font upwardly through the wick-tube at one side thereof and having perforations opening into the wick-tube and a valve-seat opening upwardly from the upper end of the said valve-tube, a jet-ring and base mounted on the upper end of the said valve-tube with a space between it and the top of the said bell-shaped upper end, a valve-slide and valve within the said valve-tube and means for operating the said valve-slide.

3. In a vapor-lamp having a font, a wick-tube mounted on the said font and having an enlargement at its upper end, a cap-plate covering the upper side of the said enlarged end, a jet-ring, a jet-ring base for closing the under side of the said jet-ring with provision for air to pass upward through the said base inside of the jet-ring, the said jet-ring and base being mounted above the cap-plate of the wick-tube with an air-space directly under the jet-ring base and through the central portion thereof, a perforated valve-seat communicating with the interior of the jet-ring, a conductor having a passage for gas leading from the enlargement in the wick-tube to the said valve-seat, a valve, and operating devices for closing the opening through the said valve-seat.

4. In a vapor-lamp having a font, a wick-tube mounted on the said font and having a wick-receptacle at its upper end, a jet-ring base, a jet-ring mounted on the said base, a vertical valve-tube communicating with the wick-receptacle and having a perforated valve-seat at its upper end communicating with the said jet-ring, a valve-slide mounted in the said valve-tube and having a ball-valve loosely mounted in its upper end to act on the said valve-seat, and means for operating the said valve-slide.

5. In a vapor-lamp having a font, a wick-tube mounted on the said font and having a wick-receptacle at its upper end, a jet-ring base, a jet-ring mounted on the said base, a vertical valve-tube communicating with the

wick-receptacle and having a perforated valve-seat at its upper end communicating with the said jet-ring, a valve-slide mounted in the said valve-tube and having a ball-valve loosely  
5 mounted in its upper end to act on the said valve-seat, a rack extending longitudinally of the said valve-slide, a pinion in engagement

with the said rack, a horizontal operating-rod for said pinion and a bearing for the said operating-rod mounted on the lamp.

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