

No. 834,850.

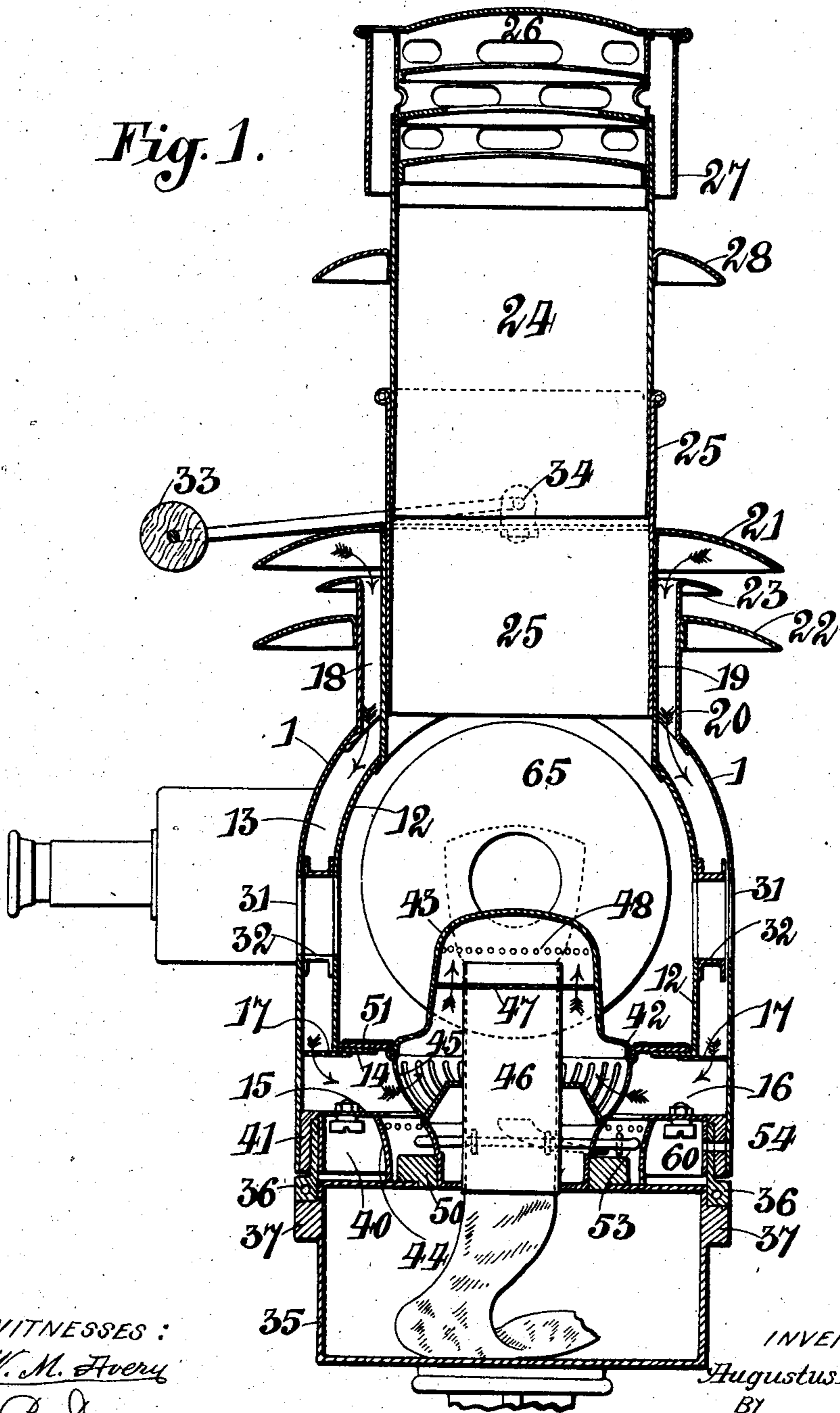
PATENTED OCT. 30, 1906.

A. ROSENBERG.
LANTERN.

APPLICATION FILED AUG. 28, 1905.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 3.

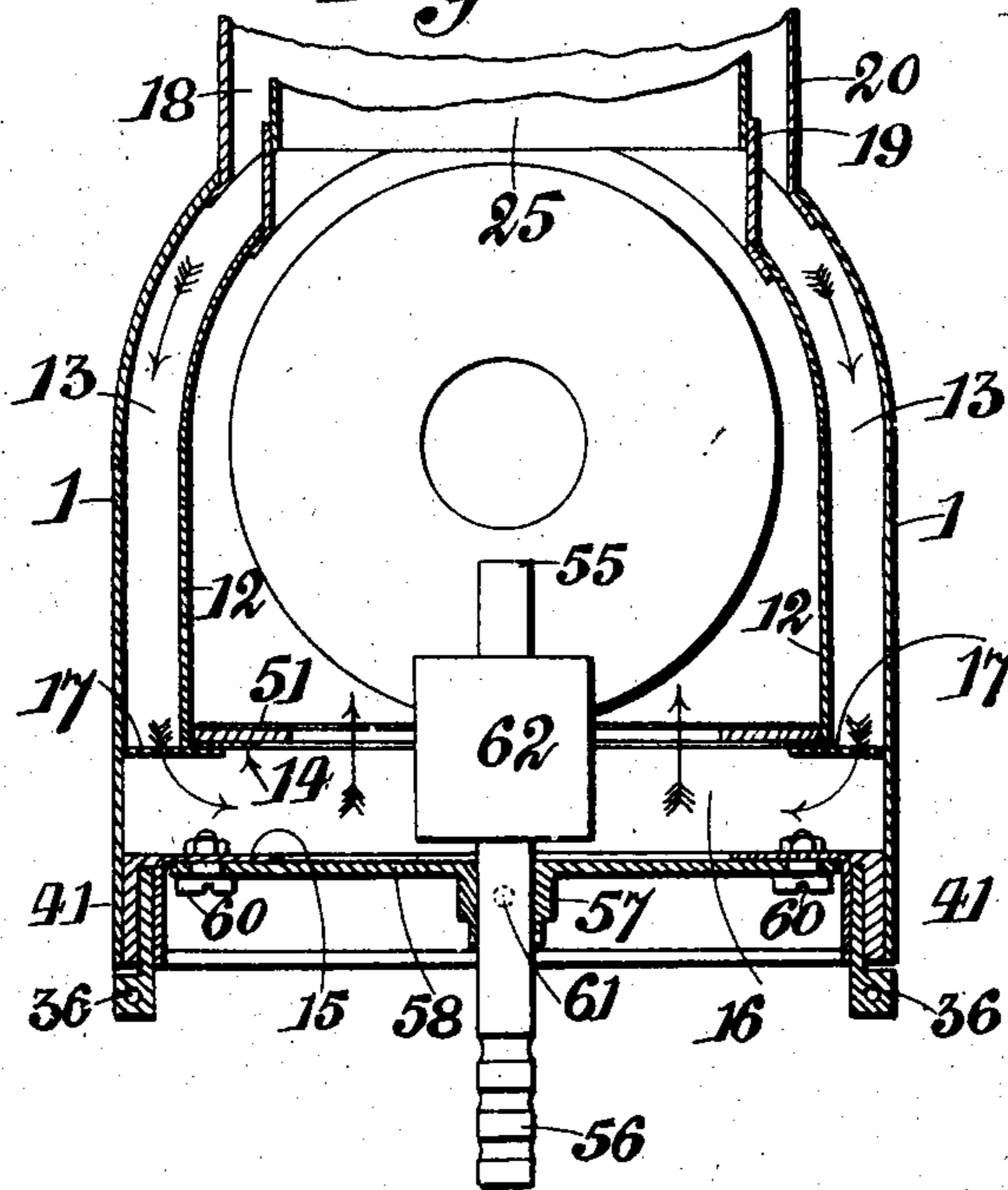
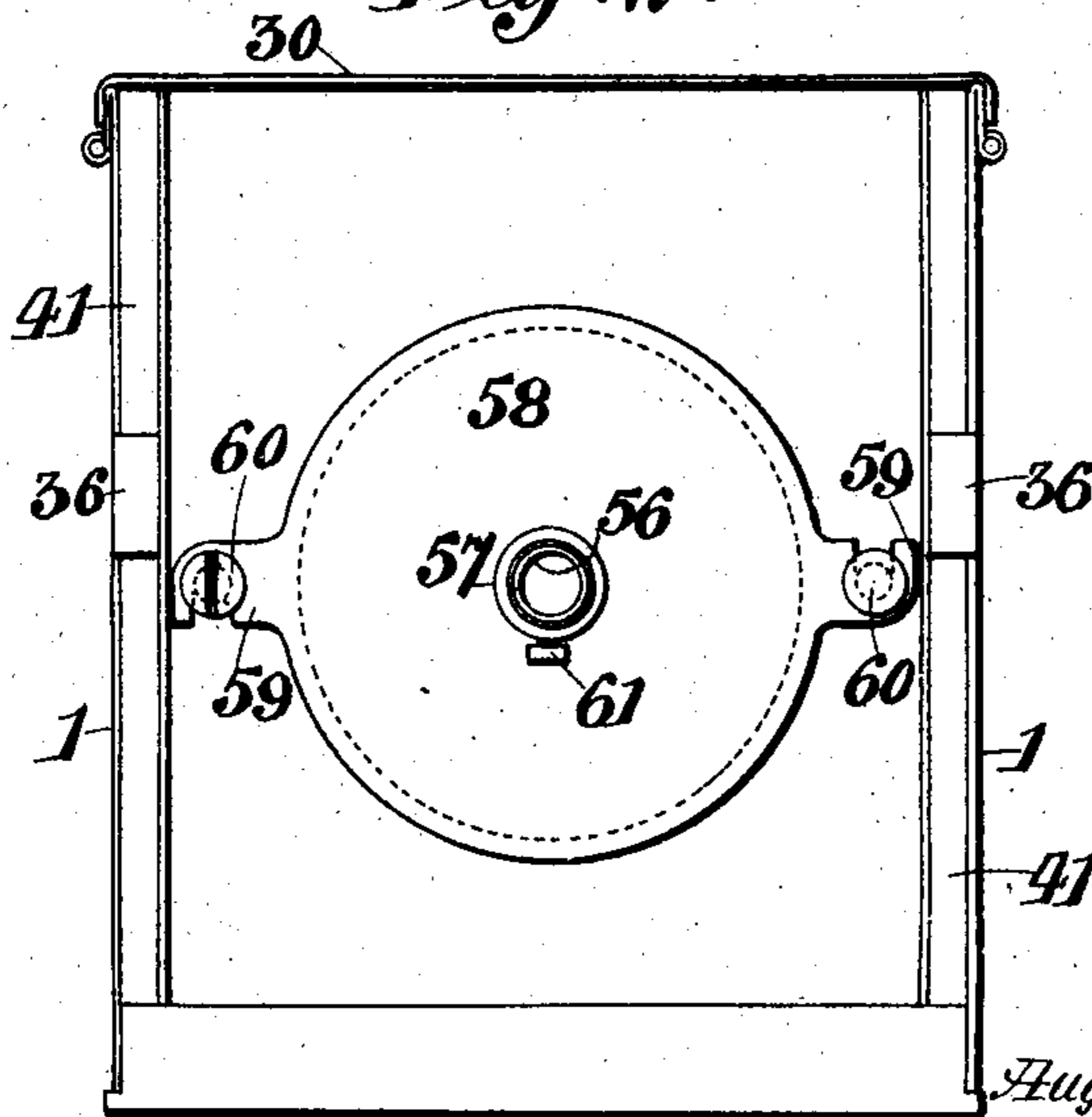


Fig. 2.



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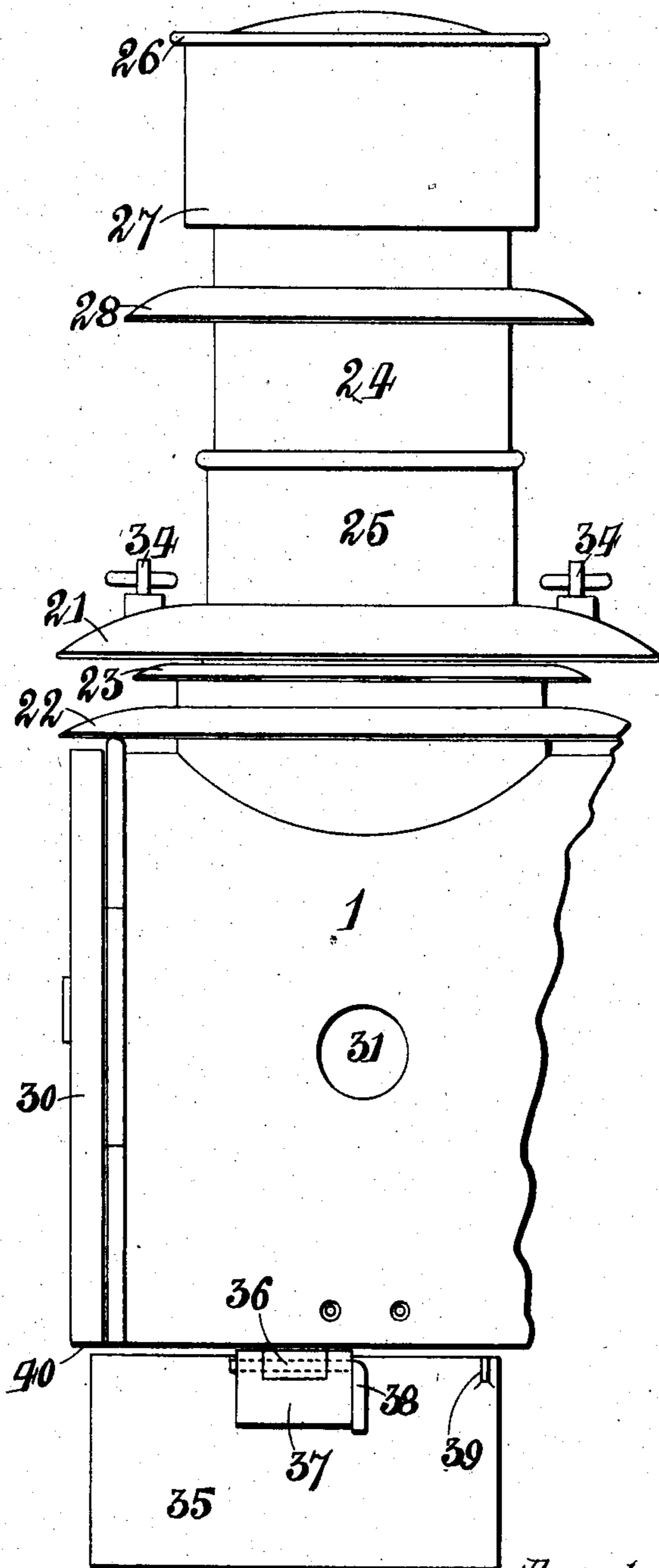
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3 SHEETS—SHEET 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

AUGUSTUS ROSENBERG, OF LONDON, ENGLAND, ASSIGNOR TO THE
INTERNATIONAL OXY-GENERATOR SYNDICATE LIMITED, OF LON-
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LANTERN.

No. 834,850.

Specification of Letters Patent.

Patented Oct. 30, 1906.

Original application filed December 20, 1904, Serial No. 237,664. Divided and this application filed August 28, 1905.
Serial No. 276,056.

To all whom it may concern:

Be it known that I, AUGUSTUS ROSENBERG, engineer, a subject of the King of Great Britain, and a resident of 259 High Holborn, London, England, have invented certain new and useful Improvements in Lanterns, of which the following is a specification.

This invention relates to improvements in lanterns used for optical signaling and searchlight operations, and is especially designed for use in connection with the signaling apparatus for which I made application for Letters Patent on December 20, 1904, Serial No. 237,664, and of which this application is a division.

The invention will be described with reference to the accompanying drawings, wherein—

Figure 1 is a central vertical transverse section of the lantern fitted with a paraffin-oil lamp. Fig. 2 is an inverted plan of the bottom of the lantern, showing the mode of attaching a gas-burner. Fig. 3 is a part transverse section of the lantern, showing such a gas-burner in elevation; and Fig. 4 is a part side elevation of the lantern.

The same reference-numerals denote like parts in all the figures.

1 is the body of the lantern, which is closed and is preferably supplied with air through a so-called "top-feed" arrangement, whereby the air is heated before reaching the point of combustion and the temperature of the flame is maintained as high as practicable. For this purpose the sides, top, and bottom of the lantern-body are constructed with a double wall, the inner wall 12 of the sides and top being separated from the outer wall 1 by an air-space 13 and the inner bottom plate 14 being separated from the outer bottom plate 15 by an air-space 16, the spaces 13 and 16 communicating with one another at each side of the lantern through a screen 17, of wire-gauze, whereby the current of air passing through the spaces on its way to the point of combustion is caused to distribute itself equally over the whole cross-sectional area of the passage constituted by the spaces 13 and 16, and thus to become equally heated by being spread evenly over the surface of the inner wall of the lantern. The air-sup-

ply reaches the top of the space 13 by way of an annular passage 18, surrounding the lantern-chimney, the inner and outer walls of said passage being formed by tubes 19 and 20, rising from corresponding apertures in the top of the inner and outer walls 12 and 1 of the lantern. The upper end of the inner tube 19 carries a wide flange 21, adapted to exclude rain and direct downdrafts from the passage 18, and in order to also exclude fluctuating drafts caused by gusts of wind which after glancing off the rounded top of the lantern in an upward direction might be diverted downward by the flange 21 into the annular passage 18 a wide flange 22, similar to 21, surrounds the outer tube 20 at a convenient distance below the level of flange 21, another and narrower auxiliary flange 23 being preferably provided around the lip of the tube 20.

The chimney 24 is made telescopic, so as to be capable of being collapsed as far as practicable within the lantern-body when not in use, the lower section 25 being fitted to slide through the tube 19. The chimney-cowl 26 may be constructed in any usual manner for preventing the access of direct downdraft to the interior of the lantern, and in order as far as possible to prevent the admission of fluctuating drafts caused by gusts of wind glancing upward from the sides of the chimney, and so gaining entrance beneath the depending outer skirt 27 of the cowl, a flange 28 is provided on the upper section of the chimney at a convenient level beneath the edge of the skirt 27.

The lantern-body is closed at rear by a hinged door 30, and at each side of the lantern small apertures 31, registering with one another and connected by a tube 32, as shown, are provided in the inner and outer walls opposite to the flame for the purpose both of enabling the latter to be inspected and also of affording light at night-time for the respective attendants whose duty it is to read out to the signaler the message to be transmitted and to record the signals received from the distant station.

To enable the apparatus to be conveniently carried, a bail-handle 33 is pivoted, preferably, to the flange 21, as at 34, the arrangement being such that when the chim-

ney is collapsed the handle can be raised so as to straddle over the chimney-top.

Fig. 4 shows the details of the preferred construction of a chimneyless lamp for burning paraffin-oil and the like, this lamp being preferably provided with more than one flat wick arranged one behind the other.

In order that the oil-reservoir 35 may be kept cool, it is supported at a distance beneath the outer bottom plate 15 of the lamp-body by lugs 36 on the outer wall 1, (which extends below the plate 15,) which enter sockets 37 on the reservoir and are locked therein by dowel-pins 38. 39 are stops (see Fig. 4) on the reservoir for preventing the complete withdrawal of the pins. The lugs 36 hold the reservoir clear of the lower edge of the wall 1 of the lantern, so that not only is a clear air-space 40 maintained between the bottom of the lantern and the reservoir, but conduction of heat from the former to the latter is as far as possible obviated. The plate 15 where it is supported at each side of the lantern by the plate 1 is separated from the latter by a strip 41 of non-conductive material interposed between them, the lugs 36 being preferably fixed in said strip, as shown, so as to be themselves insulated from the lantern-body.

The inner and outer bottom plates 14 15 are apertured to give passage to the lamp-burner, the shoulder or rim 42 of whose outer cone 43 is adapted to fit against and so close the aperture in the upper plate 14, while a coaming 44, upstanding from the reservoir, encircles and closes the aperture in the lower plate 15. By this arrangement the only air-supply to the lamp (except as hereinafter mentioned) is that derived from the space 16, separating the plates 14 and 15, which air has already become highly heated by traversing the passages 18 and 13 already described. The heated air passes from the space 16 through the usual apertured support 45 of the burner-cone 43 into the space within said cone surrounding the wick tube or tubes 46, and in order to so subdivide the stream of air which rises around the wick-tubes as to guard against sudden fluctuations in the pressure of the current a perforated diaphragm 47 is provided within the cone 43, so as to extend over the whole area of the air-feed passage therein.

In order to prevent the burner from becoming overheated, a row of perforations 48 is provided around the upper part of the cone 43, the diaphragm 47 also serving to enable the current of air passing to the burner to abstract a considerable amount of heat from the cone 43 and wick tube or tubes 46.

In order to prevent as far as possible transmission of heat from the burner to the oil-reservoir, there is interposed between the reservoir-top and the shoulder surrounding the lower part of the burner, and upon which the

latter rests, a thick washer 50, of non-conductive material, wherein is formed the bayonet-joint slot for securing the burner in position, so that no direct conduction of heat can take place at this point from the metal burner to the metal top of the reservoir. Moreover, the inner bottom plate 14 of the lantern-body is covered by a layer of asbestos, upon which rests a plate 51 of talc, so that radiant heat falling upon plate 14 is reflected therefrom. This plate 14 may also be insulated by means of non-conductive material from the inner side walls 12 of the lantern, whereby said plate is supported.

To enable the lamp wick or wicks to be adjusted without opening the lantern, a small aperture for the passage of a winding-key for each wick-adjusting spindle 53 is provided, as at 54, in the side of the lantern-body below the level of the bottom plate 15 and a corresponding aperture in the coaming 44.

To prevent the jarring produced by the working of the flash-shutter affecting the height of the wick, each wick-adjusting spindle 53 is braked, preferably by a stiff spring attached to the burner and bearing against the spindle, so as to check its accidental rotation.

When acetylene or other gas is to be employed in place of oil as the illuminant, the lamp and reservoir are removed and a gas-burner 55, Fig. 3, is introduced through the apertures in the bottom plates 14 and 15 and secured to the outer or lower plate 15. For this purpose the burner 55 is supported upon the upper end of a metal tube 56, to the lower end of which the flexible tube conveying the gas from the generator or gas-bag is attached, the tube 56 passing through a socket 57, integral with and extending below a plate 58, which may be perforated and which closes the aperture in the bottom plate 15 and is secured by means of notched lugs 59 on the periphery of the plate 58 engaging with headed studs 60, which project downward from the plate 15. The gas-burner 55 is adjusted for height, so as to enable the brightest part of the flame to be brought into the optical axis of the lantern by sliding the tube 56 through the socket 57, which is provided with a set-screw 61 for clamping the tube in place. Between the tube 56 and burner 55 is preferably interposed a gas-expansion chamber 62, whereby a more equable supply of gas direct to the burner is insured, or a candle might be mounted in a holder provided with means for maintaining the flame at a constant level, as in the candle-lanterns employed on ordinary road-vehicles, the candle-holder being substituted for the gas-burner and its support, as above described.

Other sources of illumination than oil or gas may be used with the lantern—as, for example, the so-called “oxyhydrogen” combustion or lime-light apparatus or electric-

light apparatus—the necessary modifications being of course made in the structure of the lantern.

I claim—

5 1. The combination with a lantern-body provided with lugs projecting below the bottom thereof, of a reservoir provided with sockets to receive the lugs, and means for securing the lugs in the sockets, the lugs being
10 of a length to space the reservoir from the bottom of the lantern-body.

2. The combination with a lantern-body provided with apertured lugs projecting below the bottom of the body and insulated
15 therefrom, of a reservoir provided with sockets to receive the lugs, and pins for locking the lugs in the sockets, the lugs being of a length to space the reservoir from the bottom of the lantern-body.

3. The combination with a lantern-body 20 having an apertured plate spaced from the lower edge thereof, of a reservoir secured to the body and having a coaming projecting from its upper face, said coaming encircling and closing the aperture in the said plate. 25

4. The combination with a lantern-body having spaced apertured plates, the lowermost one being spaced from the lower edge thereof, of a burner closing the aperture in the upper plate, a reservoir secured to the lantern-body and provided with a coaming 30 projecting from its upper face, said coaming encircling and closing the aperture of the lower plate.

AUGUSTUS ROSENBERG.

Witnesses:

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