

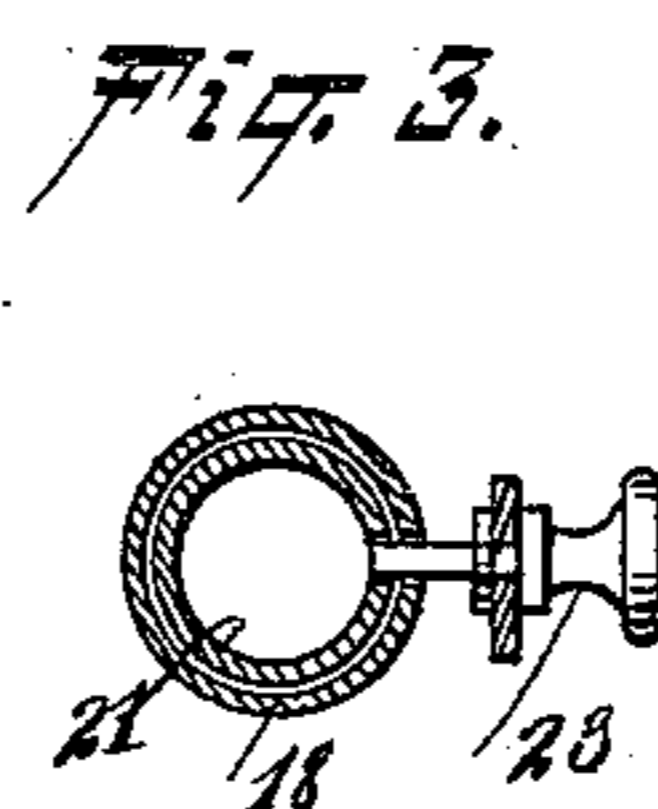
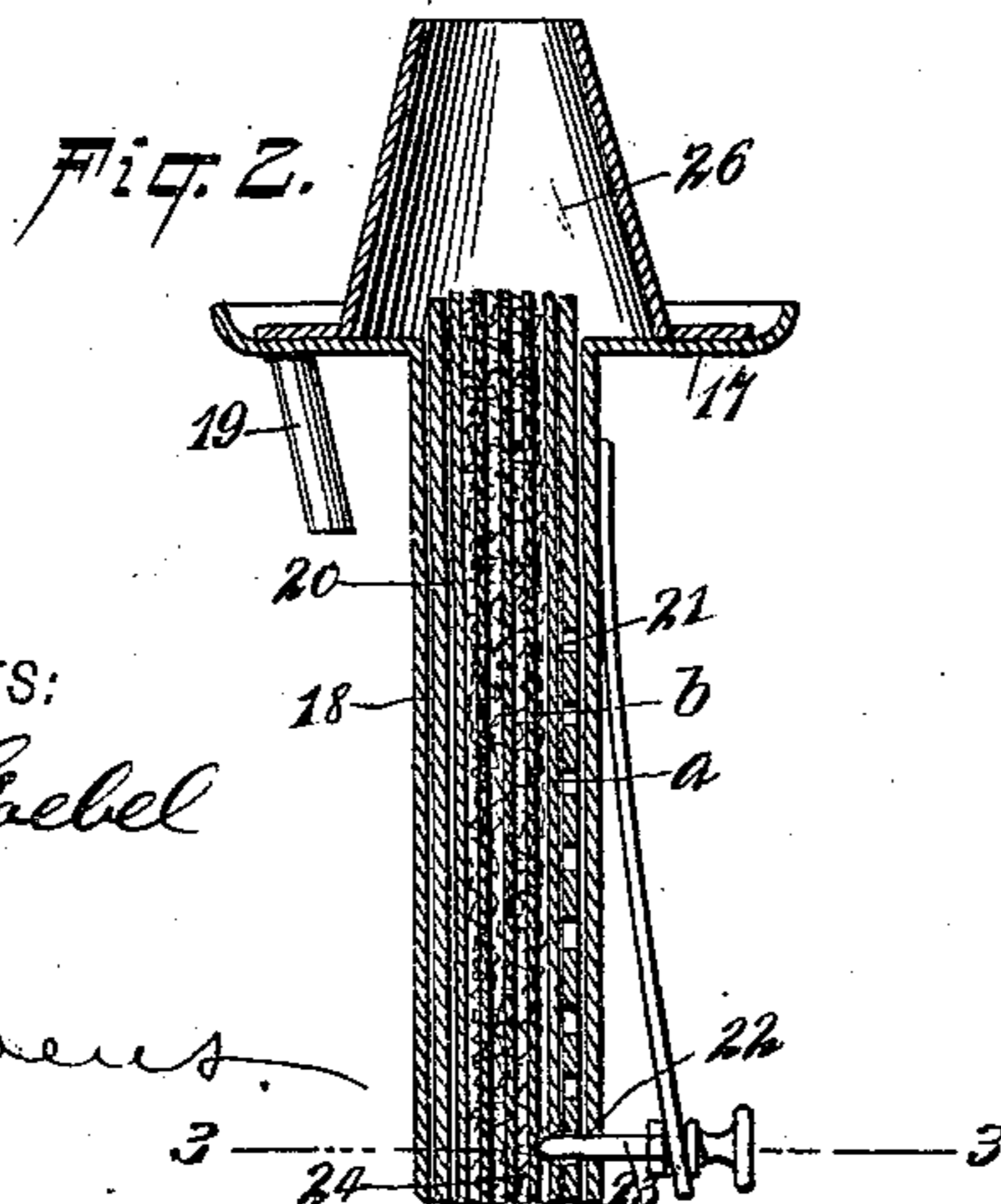
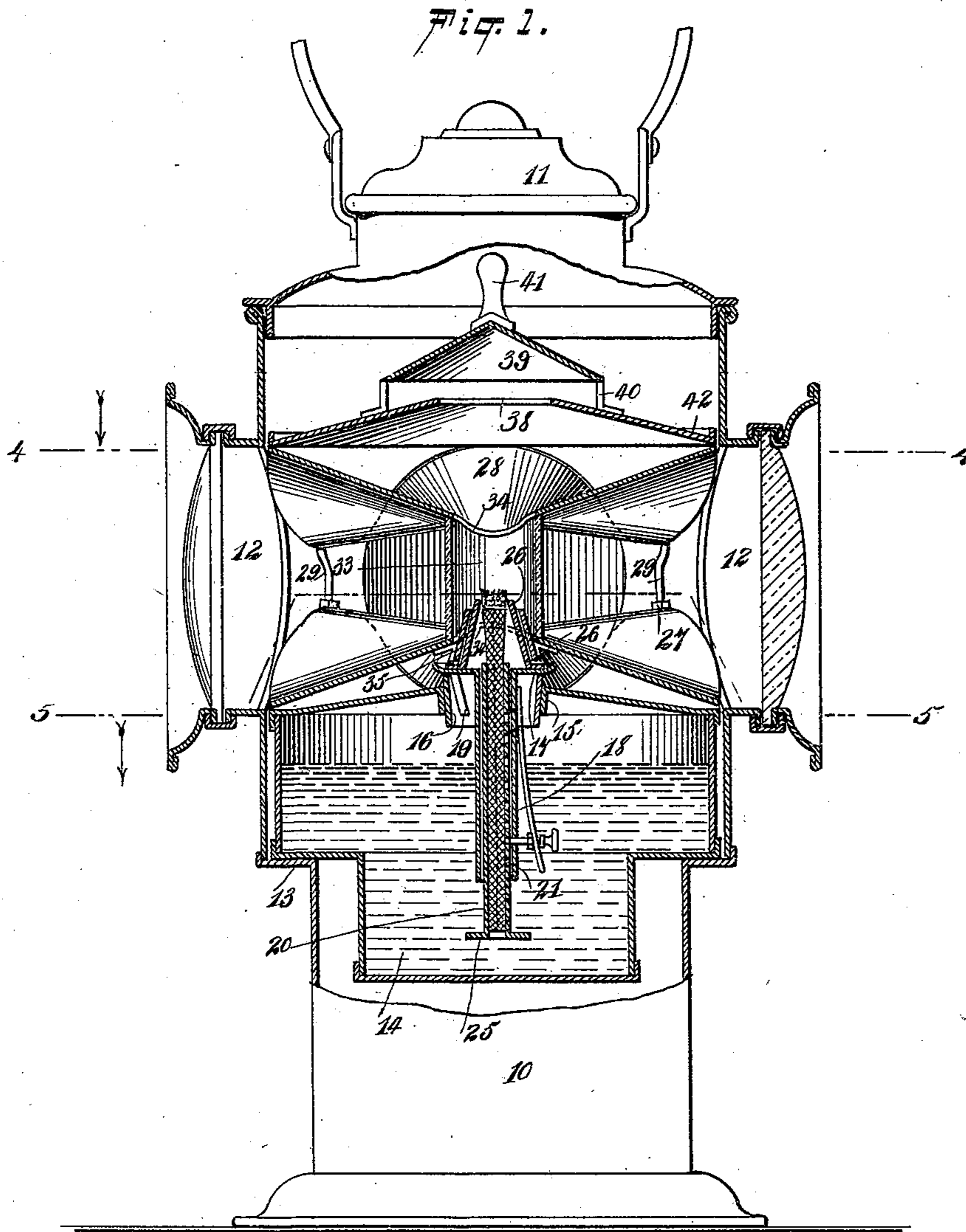
(No Model.)

2 Sheets—Sheet 1.

W. R. DODSON.
SIGNAL LANTERN.

No. 556,259.

Patented Mar. 10, 1896.



WITNESSES:
William P. Gaebel

J. B. Owens

INVENTOR
W. R. Dodson

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ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

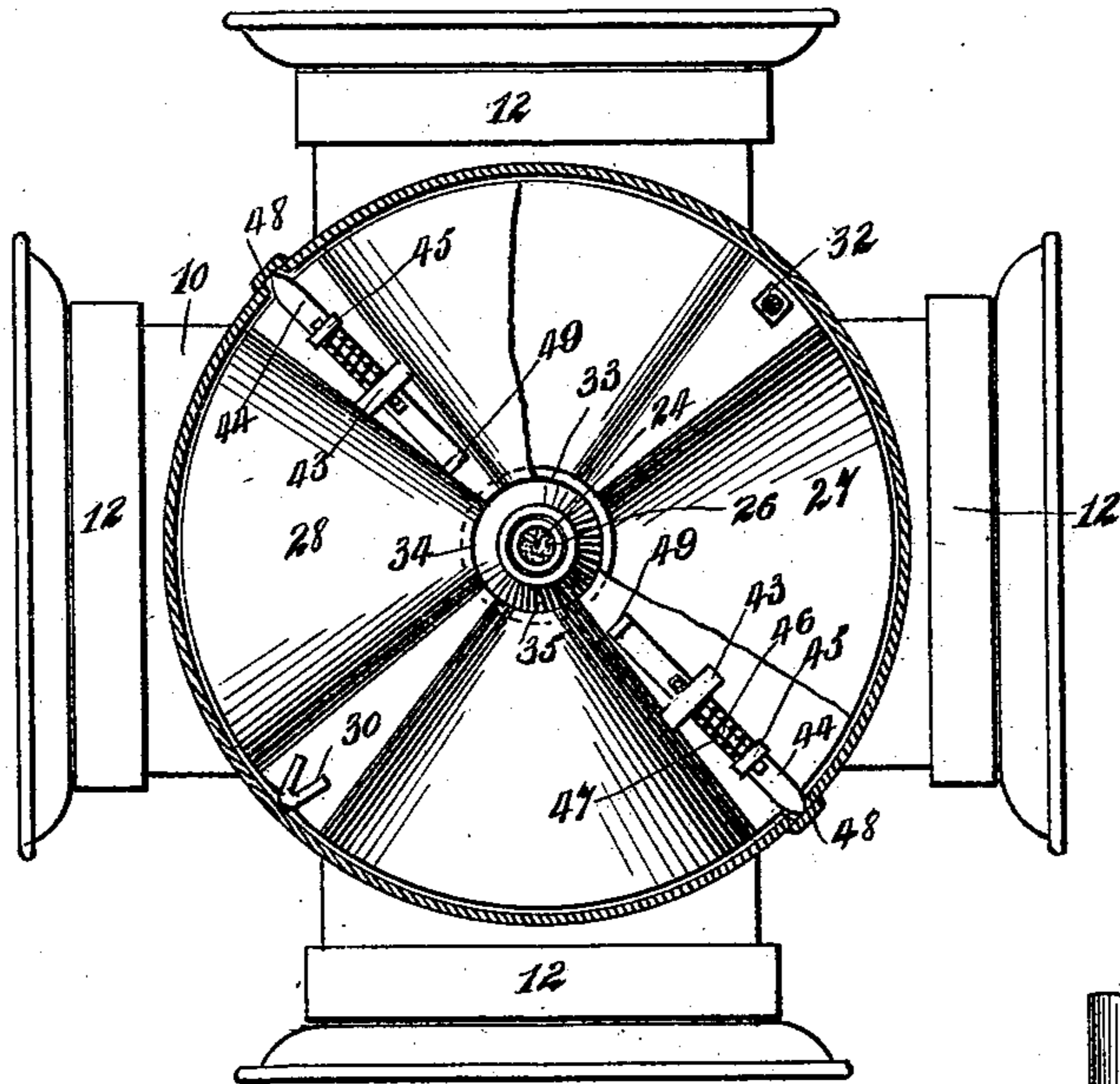


Fig. 6.

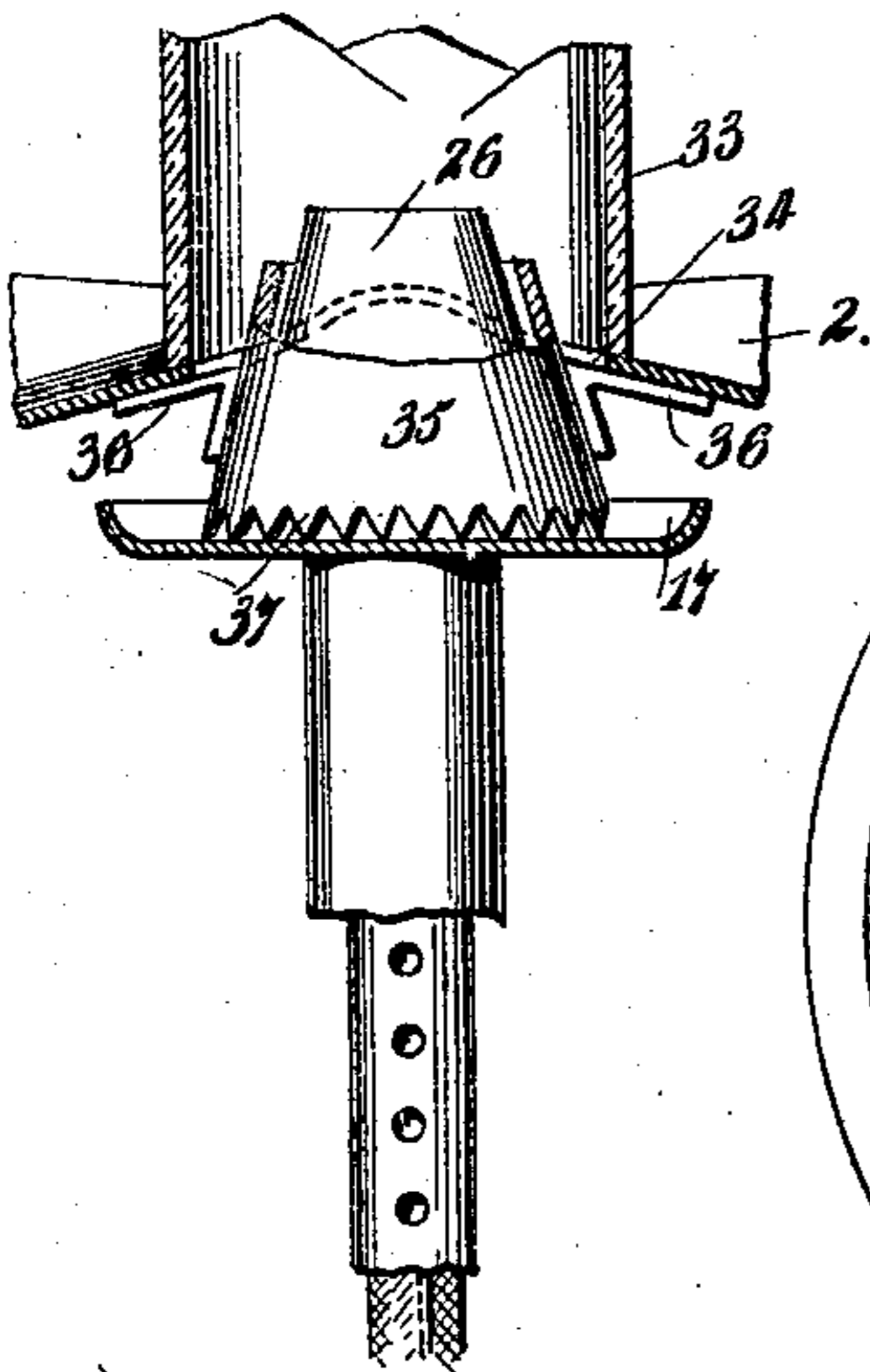


Fig. 5.

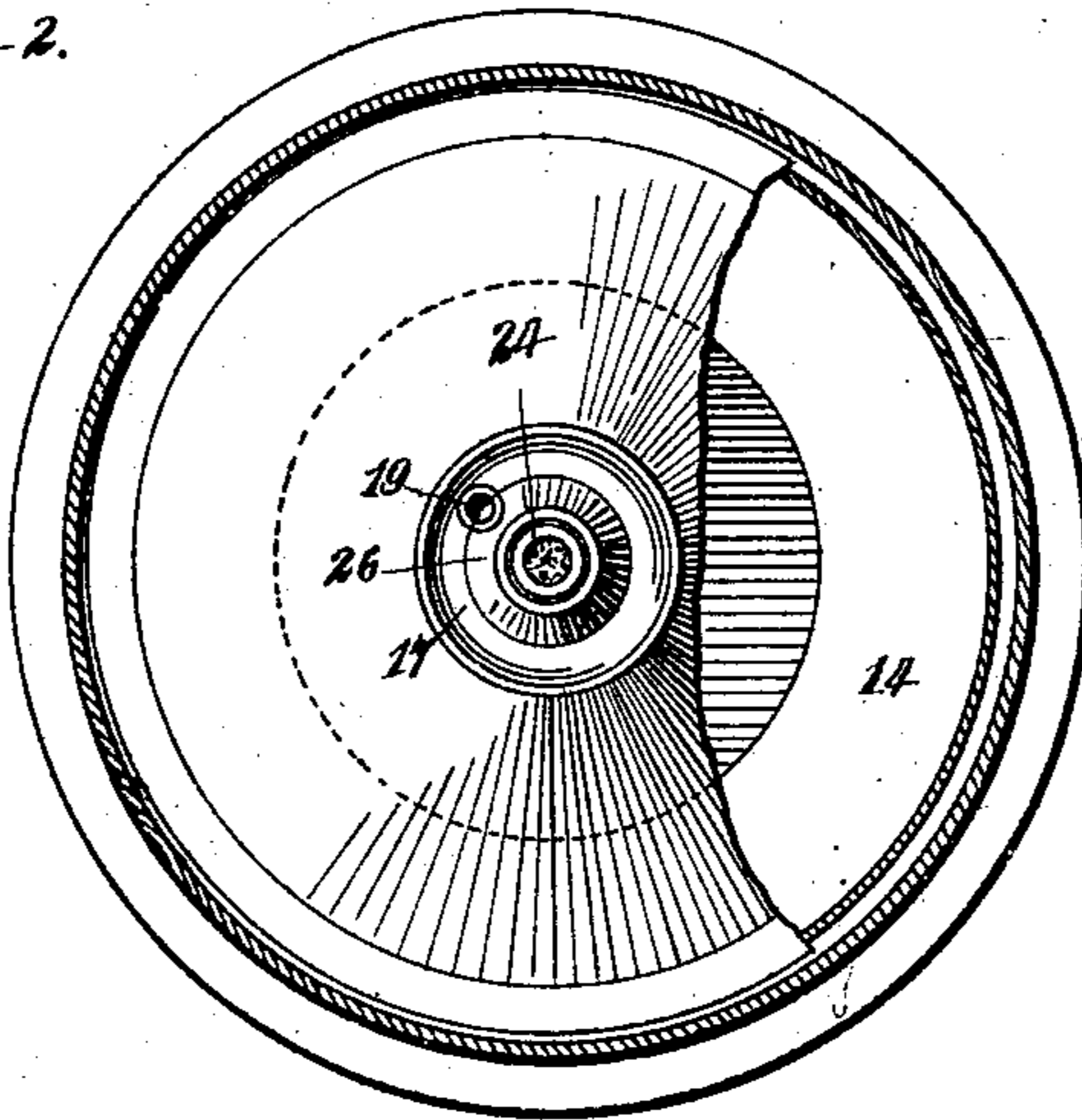


Fig. 7.

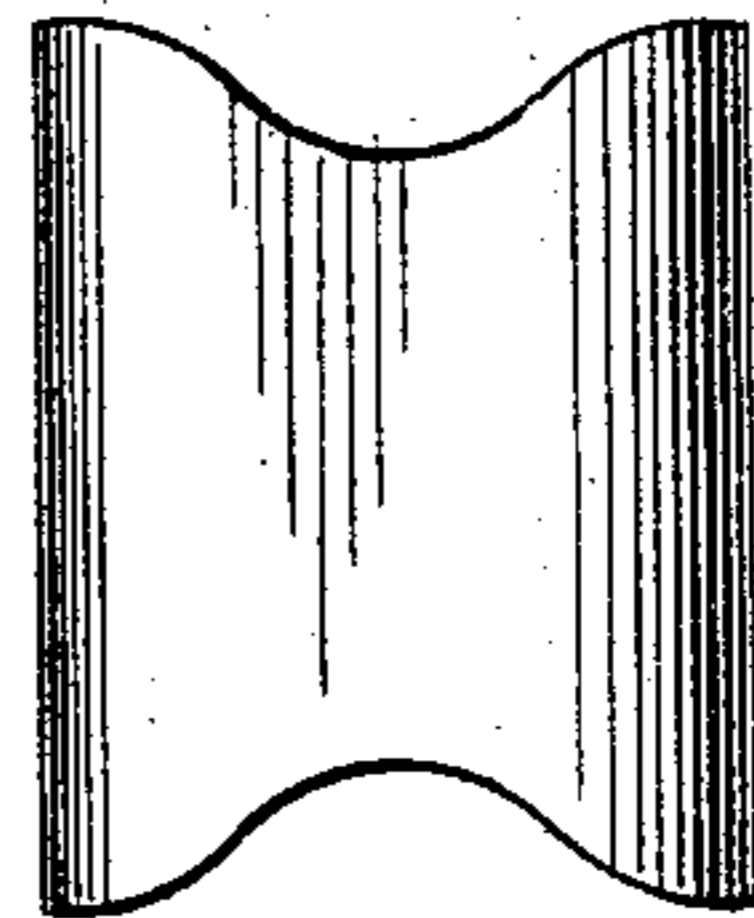
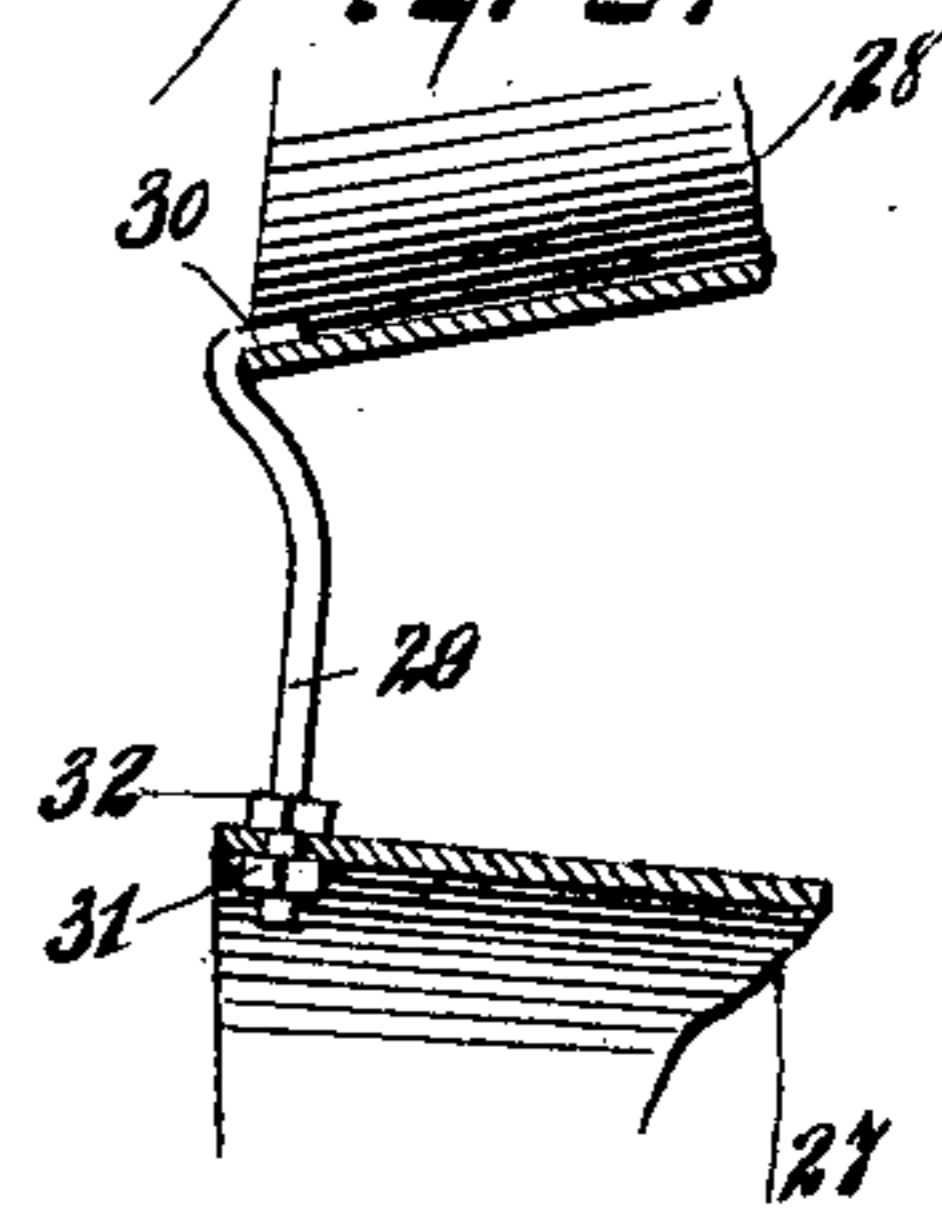


Fig. 8.

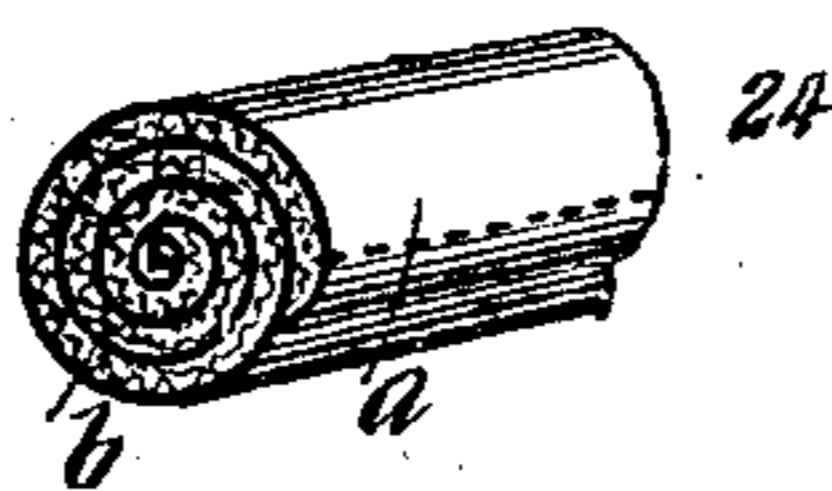


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Fig. 8.



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UNITED STATES PATENT OFFICE.

WILLARD R. DODSON, OF JERMYN, PENNSYLVANIA.

SIGNAL-LANTERN.

SPECIFICATION forming part of Letters Patent No. 556,259, dated March 10, 1896.

Application filed July 23, 1895. Serial No. 556,871. (No model.)

To all whom it may concern:

Be it known that I, WILLARD R. DODSON, of Jermyn, in the county of Lackawanna and State of Pennsylvania, have invented a new and Improved Signal-Lantern, of which the following is a full, clear, and exact description.

The object of this invention is to provide a lantern which will be capable of use for all purposes connected with signaling, and particularly one which will be especially adapted for use on railroads, such as in the capacity of a switch light or signal.

Another object of the invention is to provide a lamp in which the light will not need trimming so often as heretofore, and, further, one in which a maximum degree of radiation will be obtained from a minimum size of the flame.

Still further it is an object of my invention to provide various improved details, all tending to increase the commercial efficiency and durability of the invention, and the full attainment of every object will be apparent as this specification progresses.

The invention consists in various features of construction and combinations and arrangements of parts, as will be fully described hereinafter and finally embodied in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical section of a lantern embodying the essential features of my invention. Fig. 2 is a detail section taken through the burner and its tubes. Fig. 3 is a detail section on the line 3 3 of Fig. 2. Fig. 4 is a section on the line 4 4 of Fig. 1. Fig. 5 is a similar view on the line 5 5 of Fig. 1. Fig. 6 is a partial section further illustrating the burner mechanism and the shade therefor. Fig. 7 is an elevation in further illustration of the shade. Fig. 8 is a detail view of the burner-wick; and Fig. 9 is a detail section showing the means for holding the sections of the reflector together.

In carrying out my invention I provide an outer casing 10, which may be of the usual construction, and which is preferably provided with a dome 11 and with lens-holding extensions 12.

Seated upon an interior shoulder 13 of the lantern-casing is the oil-receptacle 14, which has a reduced lower portion fitting within the corresponding lower portion of the casing, and which has an inclined upper side formed with a central opening therein, to which is connected a downwardly-extending boss or tube 15. Through this boss or tube 15 is extended a tube or sleeve 16, the same being slightly tapered, so as to fit securely therein, and being provided to receive the flange 17 of the tube 18, and said flange is circular in form and provided at its periphery with an upturned edge which forms a gutter or receptacle for waste oil, and this waste oil may have escape through the tube 19, which is passed through the flange 17.

The tube 18 extends centrally through the tube 16 and has slidably mounted therein a second tube, 20, the said tube 20 being formed with a series of longitudinally-aligned perforations 21, which are each capable of matching with the perforation 22 formed in the outer tube, 18, and through this perforation 22 the needle 23 is extended, the said needle being adapted to pass through any of the openings 21 and to pierce the wick 24, as shown in Fig. 2. A leaf-spring is connected to the needle 23 and to the tube 18 and arranged to give the needle a tendency inward. By these means the tube 20 is adjustably held in the tube 18, and, further, the wick 24 is held at the necessary elevation and prevented from independent movement.

The adjustment of the wick is effected by sliding the tube 20 in the tube 18 so as to raise the wick to the necessary elevation, and to facilitate this operation the tube 20 has a flange 25 at its lower end, furnishing convenient means for grasping the tube.

Rigidly secured to the flange 17, by soldering or otherwise, is a sheet-metal shield 26, which is frusto-conical in shape and which has its upper end aligned with the wick, and through which upper end the wick is adapted to project, as shown in Fig. 1.

The wick of the lantern is constructed of a sheet of cloth *a* and a sheet of asbestos-paper *b*, the two elements being laid one upon the other and rolled together, and the outer edge of the cloth is allowed to overlap the asbestos and is sewed in place, as shown in Fig. 8,

so as to produce a clean, clear wick. Such a wick is practically imperishable and only needs the removing of the soot or carbon accumulation which is formed thereon by the burning of the oil, a very slight adjustment being necessary at long intervals.

Rested upon the upper side of the oil-receptacle 14 are the two reflectors 27 and 28, and these reflectors are formed of sheet metal and shaped to have four waving curved portions which are raised opposite each other in each reflector, and which thereby form substantially four flaring reflector-passages radiating from the center of the wick and opening into the lens-holders 12, as shown in Figs. 1 and 4.

The reflector-sections 27 and 28 are held together by means of the bolts 29, which are four in number and which have a forked upper end 30, respectively secured by soldering in the valleys between each curved portion of the section 28. The lower ends of the bolts 29 are projected through openings in the section 27 at a point directly below, and are provided with nuts 31 and 32 which lie one on each side of the section 27 and by their joint operation rigidly secure the bolt 29 to the said section. The lower nut 31 may be removed at will, so as to disconnect the section 27 from the bolt 29, and this is necessary when it is desired to clean the reflector-sections.

Arranged between the sections 27 and 28 and at the center thereof is a shade 33 which is formed with waving ends matching with the waving contour of the sections 27 and 28. By means of this construction the shade 33 is clamped securely and snugly between the two sections. The sections of the reflector are each formed with central openings 34, which are commensurate with the interior diameter of the shade 33, and the shield 26 is projected through the opening in the lower shade, 27.

Rigidly secured to the lower shade, 27, and projecting partly through the opening therein is a second shield, 35, which is also frusto-conical in form and the sides of which are of the same angle as the sides of the shield 26, the said shield 35 being held in place by means of angle-irons or brackets 36 secured to the shield and to the under side of the reflector-section 27. The lower edge of the shield 35 is serrated, as shown at 37, and this lower edge is adapted to rest upon the flange 17 of the tube 18 and to receive the shield 27, as shown in Figs. 1 and 6.

Fig. 1 shows how the reflector-sections are mounted upon the flange 17 through the medium of the shield 35, and the serrations at the base of said shield are provided to permit the air to be fed into the shade 33 and combined with the flame at the burner, so as to facilitate proper combustion.

By means of the peculiar construction which I give the sections of the reflector it is made capable of increasing the radiation of the light resulting from the burner and of enlarg-

ing the same to the force of the usual and very much enlarged wick.

Seated upon the burner-section 28 and within the casing 10 is a shield 38, which is dished slightly and has a central opening over which a dome-plate 39 is secured by means of suitable feet 40. The dome-plate 39 is provided with a lifting-knob 41, by which the two plates 38 and 40 may be manipulated. The periphery of the circular shield 38 is turned up or formed with a flange 42, which makes substantially a gutter around the edge of the shield, and this gutter is pierced at one or two points, the same being necessarily directly over one of the bolts 29, so that water which may leak through the dome-cap 11 of the casing will be guided past the reflector and down into the space below the oil reservoir or receptacle 14.

Slidably mounted in bearings 43, secured to the reflector-section 28, are the two bolts 44, and the bearings 43 are two in number and located on opposite sides of the opening in the reflector-section 28. Rising from each of the bolts 44 is a stud 45, which carries a pin 46, and the said pin projects through an opening in the bearing 43 and has a spiral spring 47 embracing it, the tendency of the said spring being to push the bolts outwardly, as shown in Fig. 4, and into the recesses 48 in the casing 10. The inner ends of the bolts 44 are provided with finger-grasps 49, and these finger-grasps are provided to furnish means for moving the bolts 44 inwardly and also for lifting the radiator out of the casing. By means of the bolts 44 the reflector is held rigidly in place and prevented from upward movement; also this construction furnishes a means for preventing the displacement of the reservoir 14.

From the foregoing description the use and operation of my invention will be apparent, and it will be seen that a single light is provided, which may be used for the purposes of all signaling, and one which produces—as it is one object of the invention to produce—a large degree of radiation from a very small burner, thus requiring infrequent filling of the lantern and an equally infrequent trimming of the wick, all of which is obviously of great advantage.

Furthermore, this lantern will burn both day and night for a week, consuming only one quart of oil in that time, one gallon of oil a month and four attentions being required, as against about three gallons of oil and sixty attentions in the case of lanterns now in use and which are burned only at night.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a signal-lantern, a casing, an oil-receptacle within the casing, a burner having a conical shield, a transparent chimney-tube, two horizontal disk-like reflector-sections cen-

trally orificed and having the chimney-tube located between them and aligned with the orifices, and a second shield rigidly secured to the lower reflector-section and embracing the first shield, substantially as described.

2. In a signal-lantern, an oil-receptacle, the same having an opening in its upper side, a tube having a flange, the tube being passed through the opening and supported on the oil-receptacle through the medium of the flange, a conical shield on the flange, a second tube movable within the first tube, a needle passing through the first tube and into the second tube and capable of locking the latter, and a wick passed through the second tube and conical shield, substantially as described.

3. In a signal-lantern, a casing, an oil-receptacle within the casing, a burner, horizontally-disposed reflector-sections, and spring-pressed bolts carried by the reflector-sections and locking with the casing, substantially as described.

4. In a lantern, an oil-receptacle having an opening therein, a tube projected through the opening and held with its upper end out of the receptacle, a spring-arm fixed to the tube, a needle movable transversely through the tube and actuated by the arm, a second tube reciprocated through the first tube, the second tube being longitudinally perforated, and a wick held in the second tube, substantially as specified.

5. In a lamp, the combination of two disk-like reflector-sections, the same being extend-

ed in approximately parallel planes and having central openings therein, a transparent chimney-tube engaging at its respective ends the reflector-sections, and fastening devices at the outer portions of the sections, said devices tending to draw the sections together and to forcibly hold them against the chimney-tube, substantially as described.

6. In a lamp, the combination of two disk-like reflector-sections extending in approximately parallel planes, the sections having matched waved portions forming outwardly-flaring light-radiating passages and being centrally perforated, a transparent chimney-tube engaging at its respective ends the reflector-sections and held between the same, and fastening devices at the outer portions of the reflector-sections whereby the sections are moved together and forced against the chimney-tube, substantially as described.

7. In a lantern, the combination with a casing and its oil-receptacle, of a burner, two horizontal reflector-sections centrally perforated, a chimney-tube held between the sections, and a shield superposed on the upper reflector-section and contained within the casing, the said shield being centrally orificed and having a dome-plate held to cover said orifice, substantially as described.

WILLARD R. DODSON.

Witnesses:

W. C. NICHOLSON,
WM. WALKER.