

No. 618,344.

Patented Jan. 24, 1899.

W. S. HAMM.  
SIGNAL LANTERN.

(Application filed May 27, 1897.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 2.

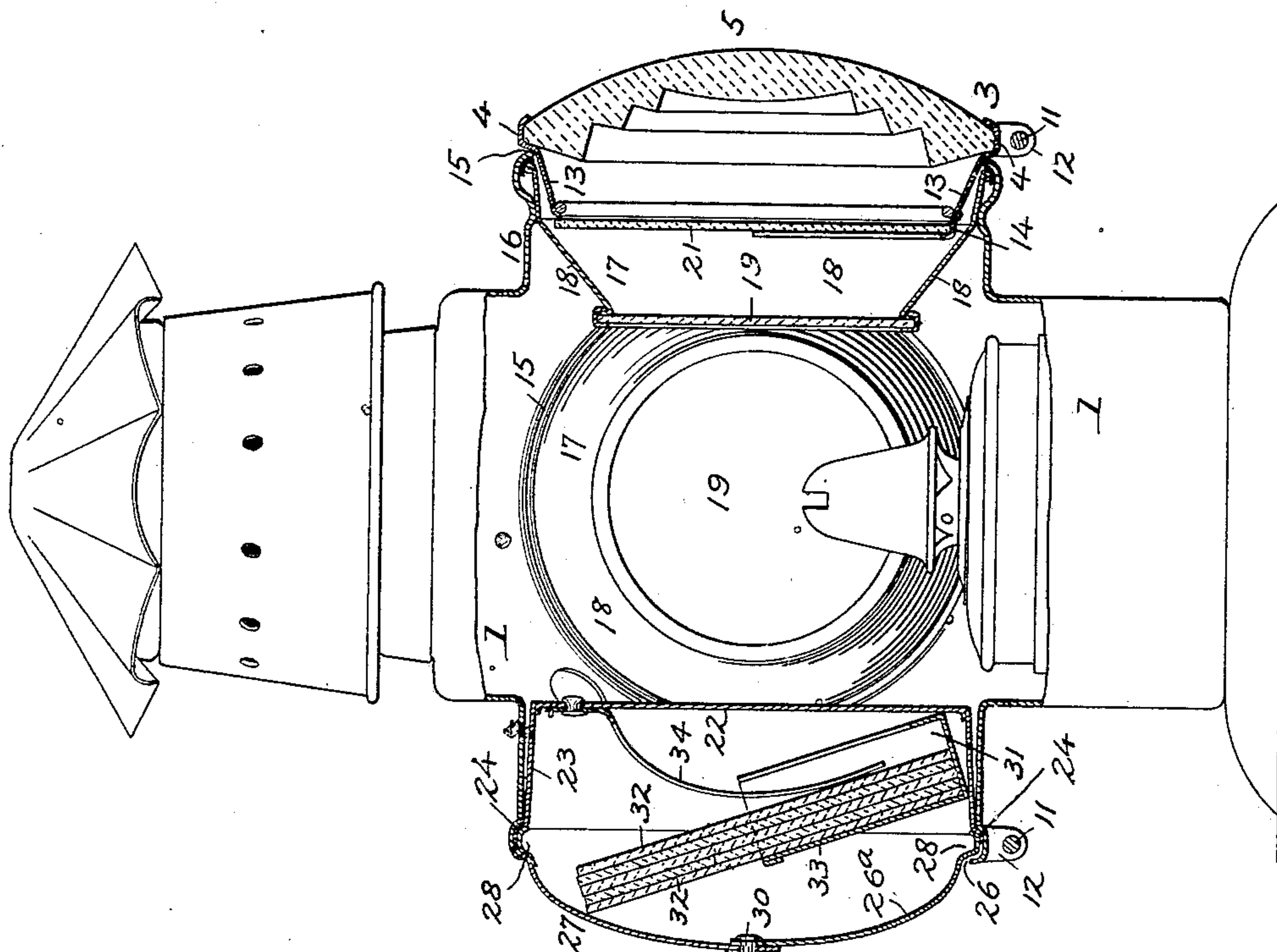
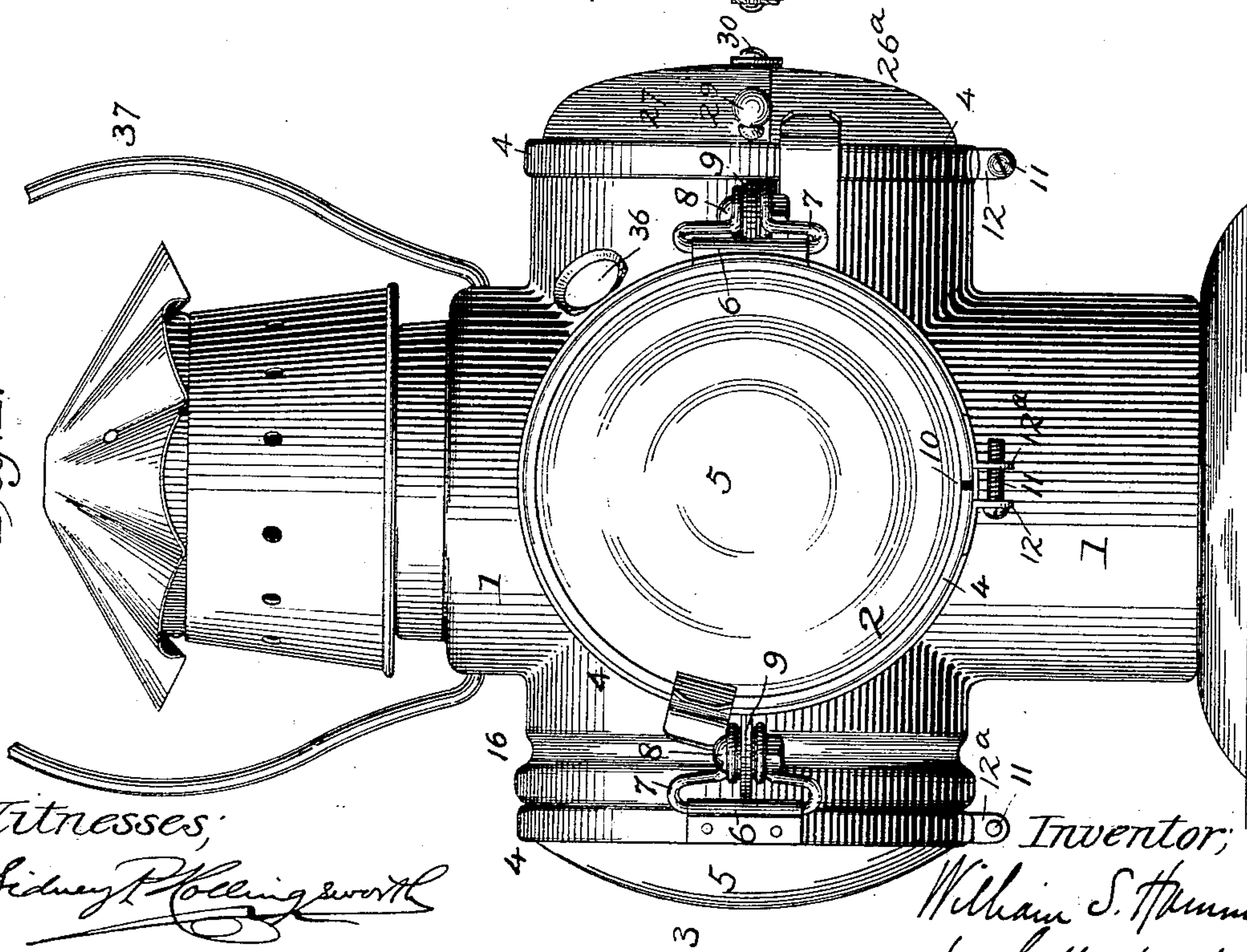


Fig. 1.



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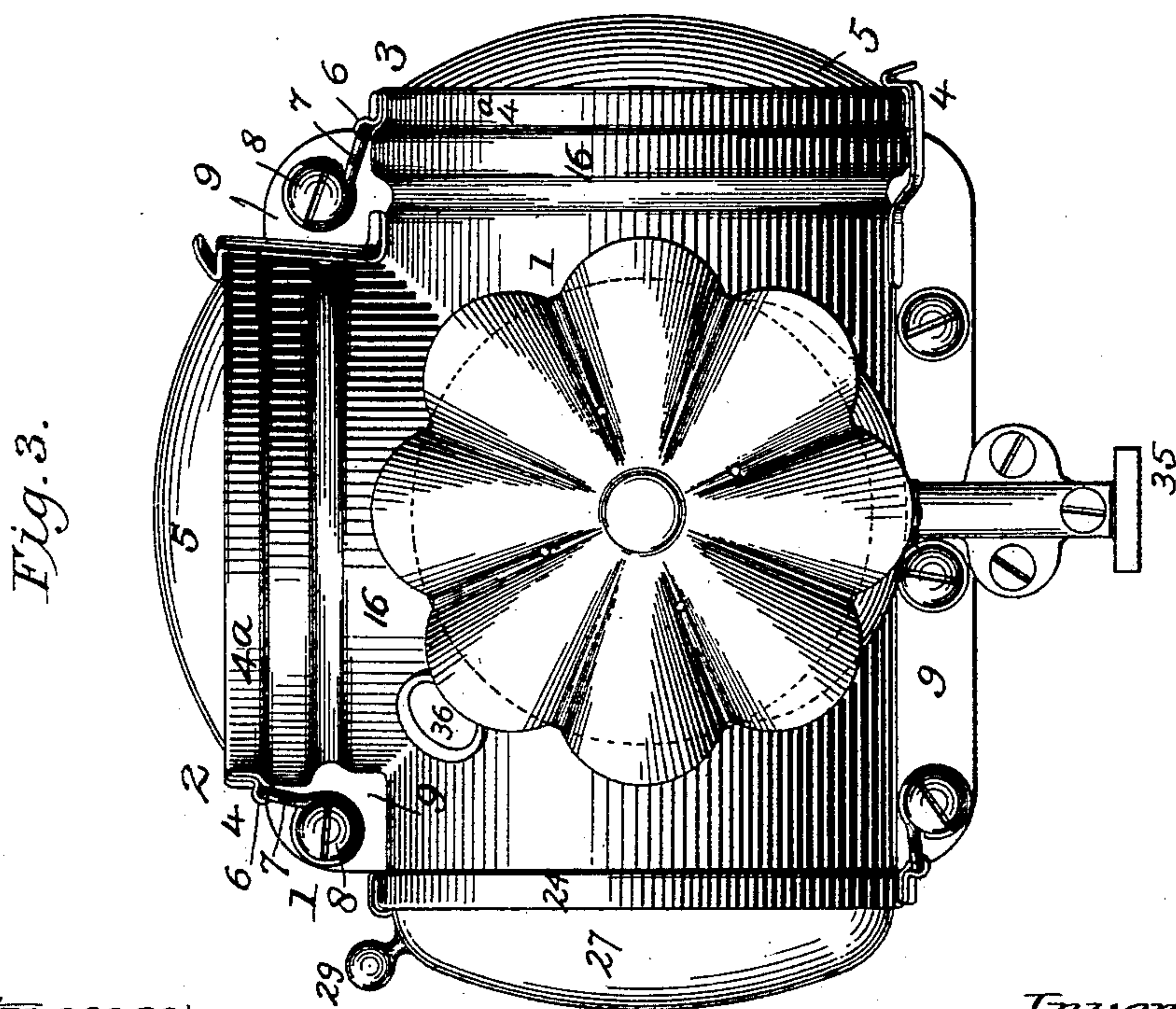
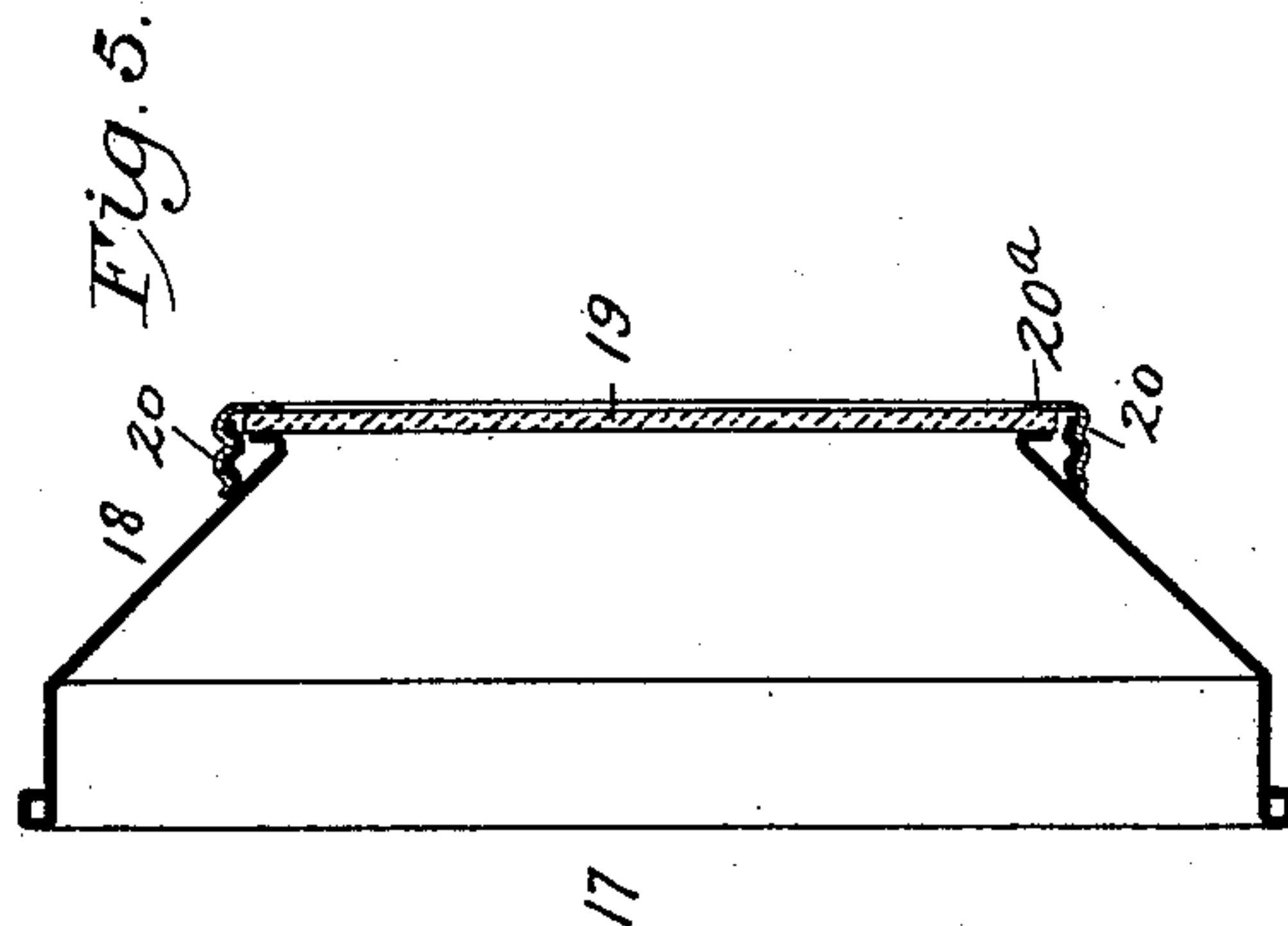
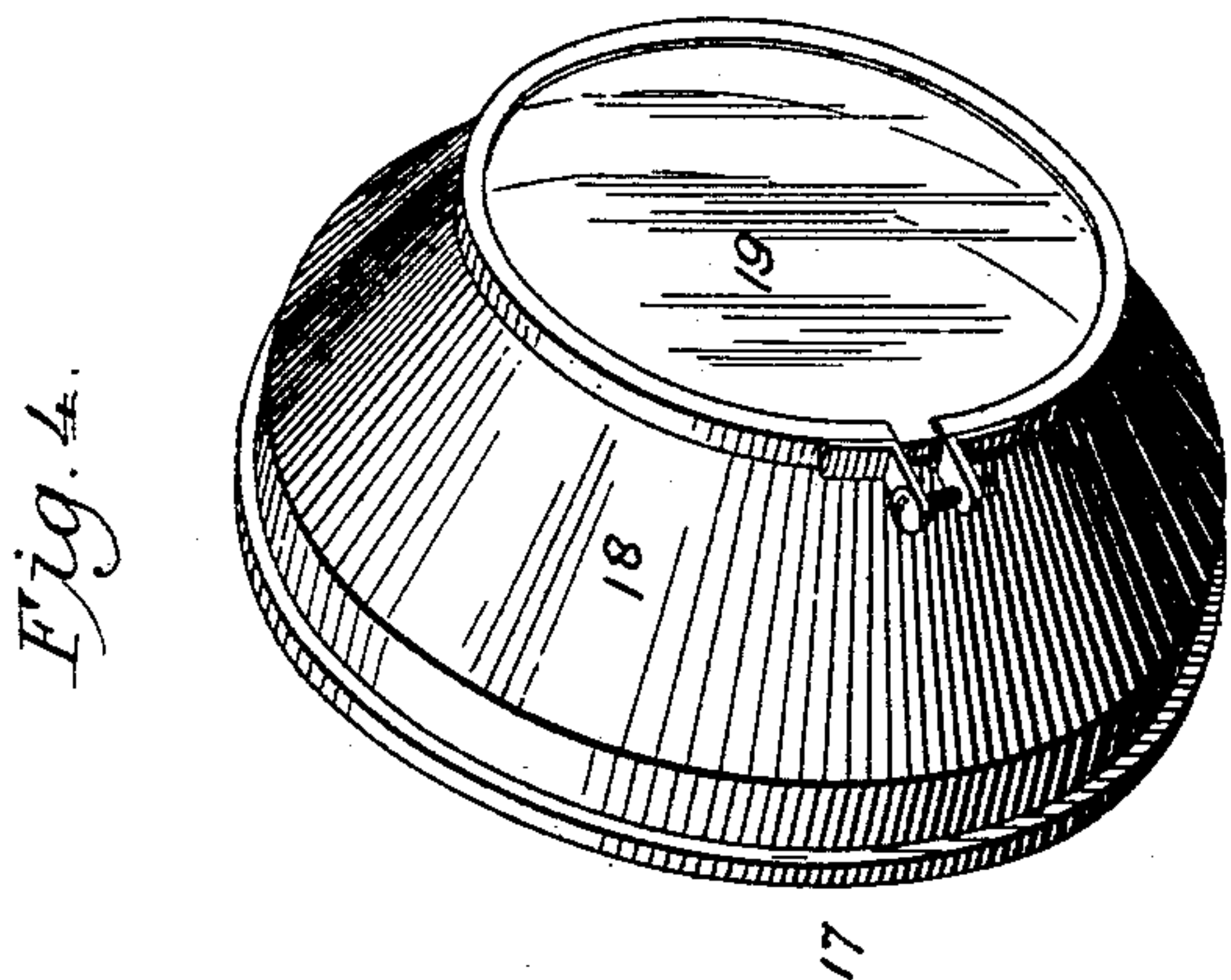
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# UNITED STATES PATENT OFFICE.

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## SIGNAL-LANTERN.

SPECIFICATION forming part of Letters Patent No. 618,344, dated January 24, 1899.

Application filed May 27, 1897. Serial No. 638,408. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM S. HAMM, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful  
5 Improvements in Signal-Lanterns, of which the following is a specification, reference being had to the accompanying drawings, and to the numerals of reference marked thereon.

My invention is intended more particularly  
10 as a signal-lantern to be used in front of a locomotive to designate whether the train drawn by it is carrying orders or not. The character of the orders is in such lanterns indicated by the color of the light displayed, this  
15 being varied by placing plates of glass of different colors between the light and the lens. Those in ordinary use on railroads are white, red, and green, the white light being normally displayed. Heretofore different types  
20 of lanterns have been used for this purpose and various means employed for changing the colored glasses for giving the various designations for orders or signals. An objection to lanterns of this class heretofore in use is  
25 the liability of the extinguishment of the light when the lamp is opened for the placing in position of the plate of glass of the required color to indicate or change the signal. Another objection is that when the colored plate of  
30 glass is not in position behind the lens the inner face of the lens is apt to become covered with soot, dust, or dirt, so that the effectiveness of the lens as a signal is impaired. It has also been found difficult when the soot,  
35 dust, or dirt gets into the corners of the corrugations to clean it out without thoroughly washing the lens. Another objection in lamps or lanterns of this class is that no provision is made for safely carrying the different signal-plates and so that they may be readily  
40 reached by the train-hands when desired and at all times be convenient of access.

My invention is designed to simplify and improve the character and general operation  
45 of the lantern; and it consists in the construction, combination, and arrangement of parts hereinafter more fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is  
50 a side elevation of a signal-lantern embody-

ing my invention. Fig. 2 is a central vertical section. Fig. 3 is a plan view. Figs. 4 and 5 are details.

Similar numerals of reference indicate similar parts in the respective figures. 55

1 is the body of the lantern, which, except as hereinafter described, may be of any approved form or make. I prefer to form the upper and lower portions of the lantern-body of plates of metal stamped out in suitable  
60 dies, the two portions being united by flanges integral with the said parts and lying in a horizontal plane at or near the axes of the lenses; but I do not confine myself to this formation of lamp-body, as any other adapted  
65 to the present purpose may be employed.

In lanterns of this class there are usually two or more lenses, and in the present example there are two, 2 and 3, standing at a right angle to each other. The lens-frames 4 are  
70 in the main of any approved construction, with the necessary recess or corrugation to receive the edge of the lens, the lenses in the present invention being indicated by 5. The lens-frames 4 have metallic sleeves 6, which  
75 are hinged to wire bails 7, removably secured by bolts 8 to the flanges mentioned and here indicated by 9. Any other form of hinge may be employed. In the example shown each lens is clamped within the frame 4, which is  
80 separated, as at 10, the free ends of the frame being drawn together by means of a screw clamping-bolt 11, used in connection with the lugs 12 and 12<sup>a</sup>, the latter being threaded to act as a nut for the screw clamping-bolt. By  
85 this device the lens may be tightly clamped and secured within its frame, and upon unscrewing the bolt 11 the frame 4 will be loosened upon the edge of the lens, and the lens may be removed in the event of breakage or  
90 for any other reason. Extending within the lantern-body and secured to the lens-opening 15 in any suitable manner is a metallic frusto-conical ring 13, provided throughout half its diameter with a groove or recess 14 for a pur-  
95 pose hereinafter referred to.

The opening in the lamp-body into which each lens-frame fits when closed is shown by 15, its annular projection 16 being formed integrally with the two halves of the lamp-body, 100



while its inner portion 17 is in the form of a frusto-conical ring 18, at the inner or smaller end of which is set or fixed a transparent white glass plate 19.

5 I do not restrict myself to any special mode of securing the transparent white glass plates 19 within the frusto-conical ring 18. In Fig. 4 the glass plate is shown inclosed within a groove in a divided ring which receives the  
10 edge of the glass, the ring being drawn together by a clamping device similar to that employed for clamping the lens in its frame. In Fig. 5 the inner edge of the ring 18 is provided with a shoulder threaded to receive a  
15 threaded ring 20, having a shoulder 20<sup>a</sup>, against which the end of the transparent glass plate 19 is adapted to fit, so that when the ring 20 is screwed home the plate will be firmly held within the frusto-conical ring 18 and the  
20 shoulder 20<sup>a</sup> of the threaded ring 20.

The object of the semicircular groove or recess 14 at the inner side of the frusto-conical ring 13, forming a part of the lens-frame, is to receive a circular disk or plate of colored  
25 glass 21, which when in position is between the rear face of the lens and the front face of the transparent glass plate 19. It will be seen that the lens-frame may be swung open and the colored glass plate 21 for indicating the  
30 proper signal slipped in and confined behind the lens, while the transparent white glass plate 19, interposed between the lens-opening and the flame from the lamp, will prevent the extinguishment of the flame by wind or rain  
35 or snow beating into the frame-opening. It will be seen that this construction not only effectually prevents the extinguishment of the flame by wind, rain, or snow, but that when a colored signal-glass is not used and  
40 the lens-frame is closed the interposition of the glass plate between the flame and the interior face of the lens keeps the latter, and particularly its corrugations or the corners thereof, from becoming affected by soot or  
45 dirt from the flame, and that the inner face of the lens is always clear and clean and in condition to transmit the light through it in an effective manner. The colored glass plate, when one is used, being behind the lens is  
50 practically within the lamp and protected from breakage, and when the lens-frame is closed there is a dead-air space between the rear face of the lens and the glass plate 19.

As has been pointed out, it is necessary in  
55 lamps or lanterns of this class to use various colored glasses for giving different signals or orders, and it becomes important that these glasses shall always be ready at hand and safely and conveniently carried, so as to be  
60 within immediate reach of the trainmen, and that they shall be protected from breakage incident to jar, shocks, and rough usage to which such lamps are subjected in service. To this end I provide at one side of the lamp-  
65 body, and to close the door-opening, a device which serves as a door and also as a pocket or receptacle for the various colored disks of

glass used for the purpose mentioned. The door-opening is in the example shown formed in the body of the lamp opposite one of the  
70 lenses, and when the opening is exposed ample opportunity is afforded of reaching the interior of the lamp-body or the lamp for any purpose. The door proper is cup-shaped in form, it having a circular bottom 22 and flaring  
75 sides formed of a frusto-conical ring 23, the outer edge of which has a flange 24 thereon. An outwardly-bulged or convex plate 26<sup>a</sup>, having its upper half cut away, is flanged or beaded on its edge, as indicated at 28,  
80 which bead extends within the flange 24 of the ring 23. These two parts—that is to say, the flange 24 of the ring 23 and the bead 28 of the bulged plate 26<sup>a</sup>—are secured together by a clamping-ring 4<sup>a</sup>, similar in all respects  
85 to the lens-frame 4. Pivoted at 30 to the bulged plate 26<sup>a</sup> is a curved rotative section or cover 27, adapted when rotated to close the cut-away portion of the plate 26<sup>a</sup> or to swing  
90 down outside of the said plate to give access to the interior of the door. The outer edge of the rotative section 27 is flanged to fit the groove 26 between the clamping-ring 4<sup>a</sup> and the bead 28, which guides it in its rotatory  
95 movement. Said rotative section 27 is provided with a handle 29, by means of which it may be turned upon its pivot 30. When the handle 29 is thrown over, so that the rotative section 27 is made to form a continuation  
100 of the bulged or convex plate 26, the opening to the interior of the ring 23 is closed. The interior of the ring 23 is provided with a pocket or receptacle 31, in which the several plates or disks 32 of colored glass  
105 are deposited, and when in position within said pocket or receptacle they are forced against its outer plate 33 by a flat spring 34, being thus held together and kept from shaking or displacement. The convex front of  
110 the ring, consisting of the plate 26<sup>a</sup> and rotative section 27, when the latter is closed, serves (it being clear of the pocket or receptacle) to protect the glass held therein from being injured by any shock to which the front  
115 may be subjected. The ring 4<sup>a</sup>, forming a part of the door-frame, is hinged to a flange 9 in a manner similar to that in which the lens-frames are hinged, the ring being provided with a screw clamping device resembling those employed with the lens-frames.  
120

A suitable hanger for attaching the lamp-body to the locomotive or other object is shown as a whole by 35. This will be varied to suit the use to which the lamp or lantern is put.  
125

The upper portion of the lamp-body, including the dome or cap, may be of any desired type, and the fastenings for the lenses and frames and other details may be of any accepted character.  
130

A peep-hole 36, covered by white glass, is provided in the lamp-body, its object being to enable the trainmen and others to see the condition of the flame without opening the door.



The lamp or lantern is furnished with a bail or handle 37, by means of which it may be carried about or shifted to place.

It will be seen that this invention allows the engineer to rapidly change his signals while running between stations without danger of extinguishing his light and that the number of changes of which the lamp is susceptible is not limited.

This improvement is not intended to be restricted to engine-lamps, but may be applied to lamps or lanterns for other uses.

It is obvious that the transparent white glasses 19 are intended to include any suitable transparent body which will answer the purpose of glass and that the colored disks for signaling purposes may be of a substance other than glass.

The use of the term "lamp" indiscriminately in the foregoing specification for the entire device and the oil-pot or light-producer will be readily understood from the context.

Having described my invention, I claim—

1. In a lantern of the character described, the combination of a swinging lens, a transparent medium, secured to the body of the lantern, between the closed lens and the source of light, and a signal glass or plate removably interposed between the rear of the lens and the front of the said transparent medium, substantially as described.

2. In a lantern having a lens-opening, the combination of a transparent medium secured within the lantern, and closing the said open-

ing against the entrance of air, a lens and its mount pivoted to the frame at the said opening, and a signal glass or plate removably placed between the lens and transparent medium, substantially as described.

3. In a lantern having an open lens-tube, a transparent medium secured to a frame and arranged within the lantern to close the said lens-tube against the access of air to the lantern, a lens mounted in a swinging frame and arranged to close the outer end of the lens-tube, and a support on the lens-frame, adapted to hold a signal glass or plate, substantially as described.

4. In a lamp of the character described, the combination of a lens mounted in a swinging frame, a support adapted to hold signal-glasses secured to the swinging frame behind the lens, and a transparent body placed between the lens and the source of light, substantially as set forth.

5. In a lamp of the character described, the combination of a lens mounted in a swinging frame, a support secured to the swinging frame behind the lens and adapted to removably hold signal-glasses, and a transparent body placed between the lens and the source of light, substantially as set forth.

In testimony whereof I hereto set my hand and seal.

WILLIAM S. HAMM. [L. S.]

Witnesses:

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