

No. 721,657.

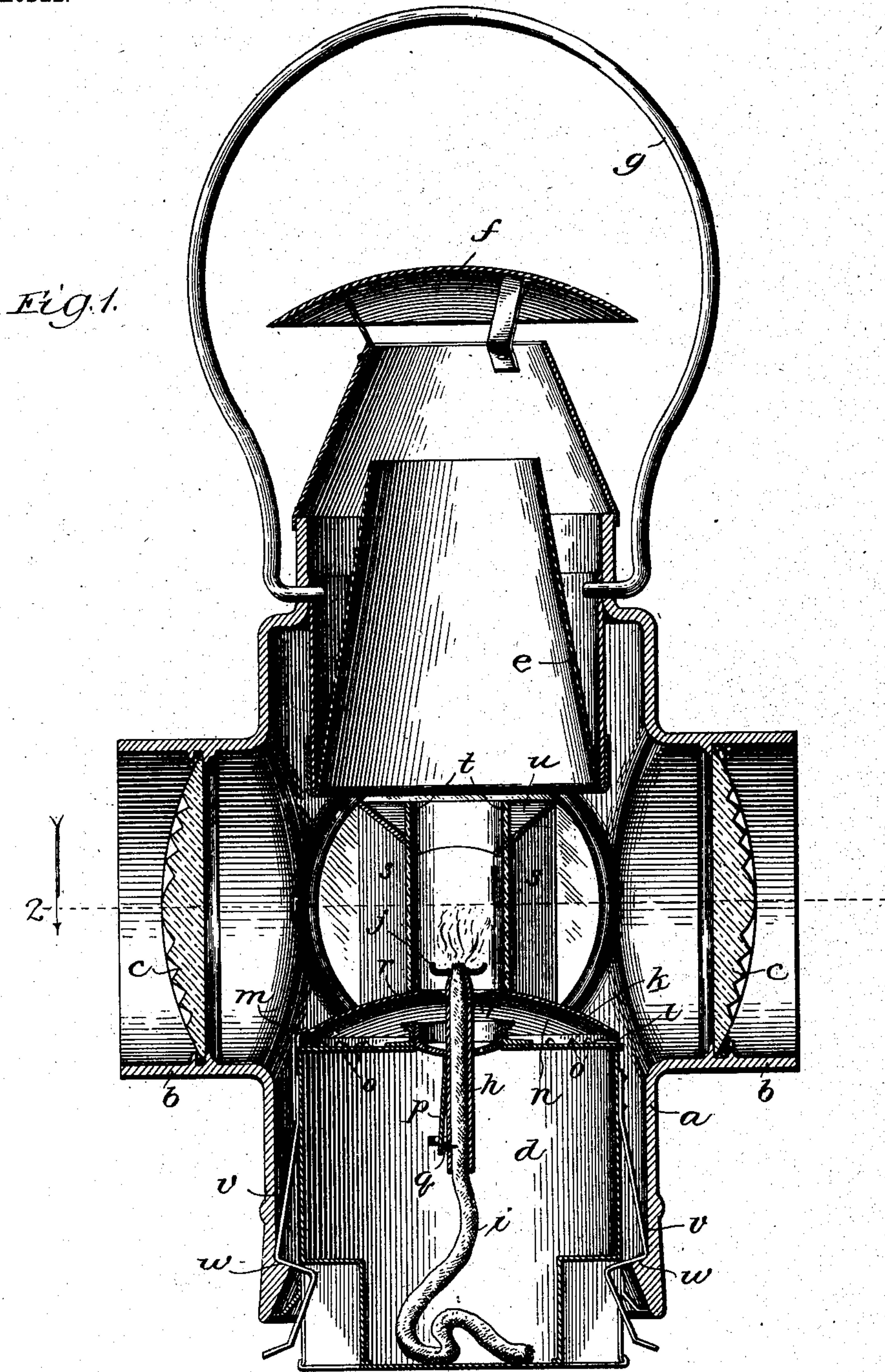
PATENTED MAR. 3, 1903.

F. V. BENSON.
SIGNAL LANTERN.

APPLICATION FILED MAR. 23, 1901.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

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John Enders, Jr.

Inventor:

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By Thomas F. Sheridan,
Att'y.

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2 SHEETS—SHEET 2.

Fig. 2.

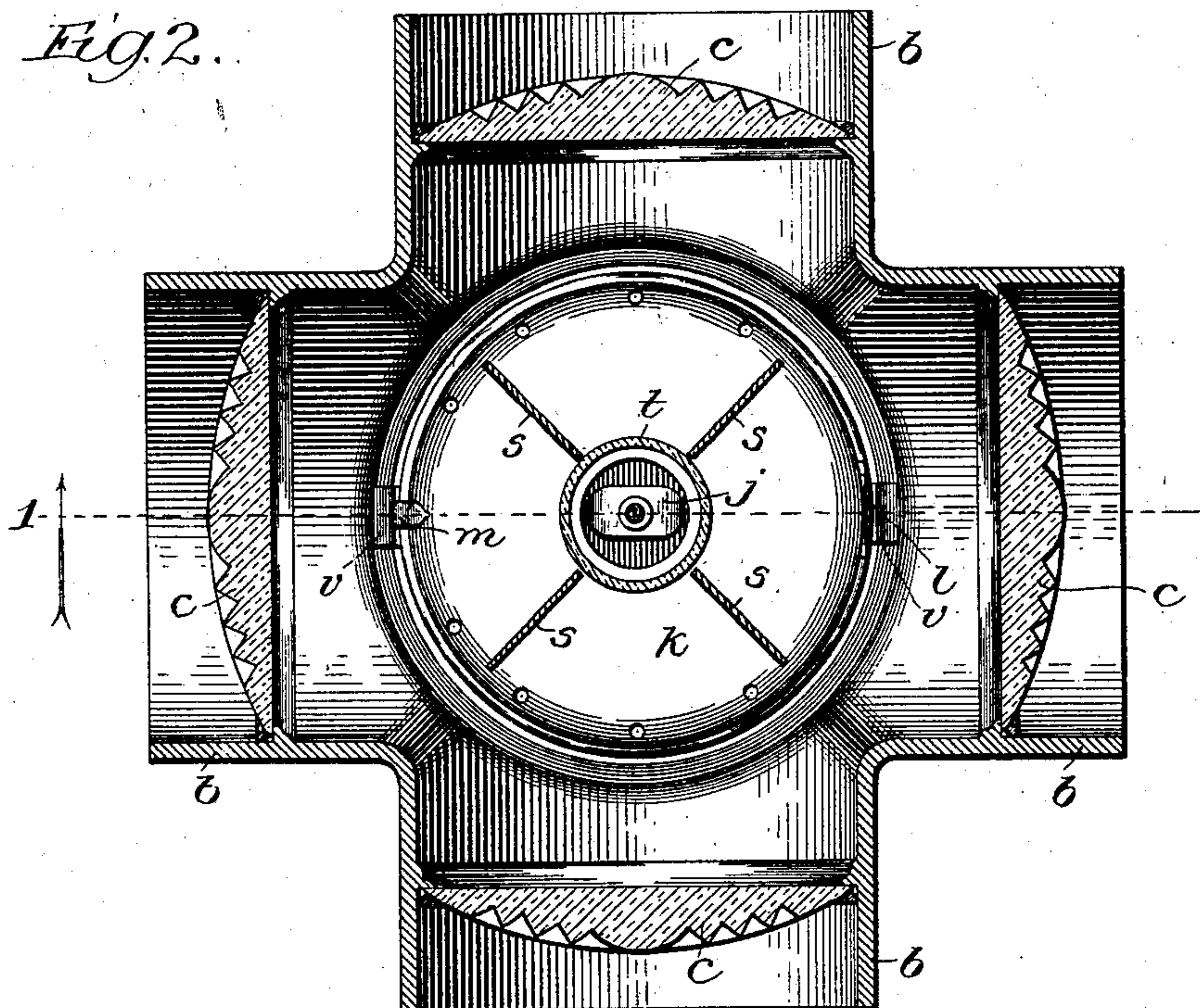
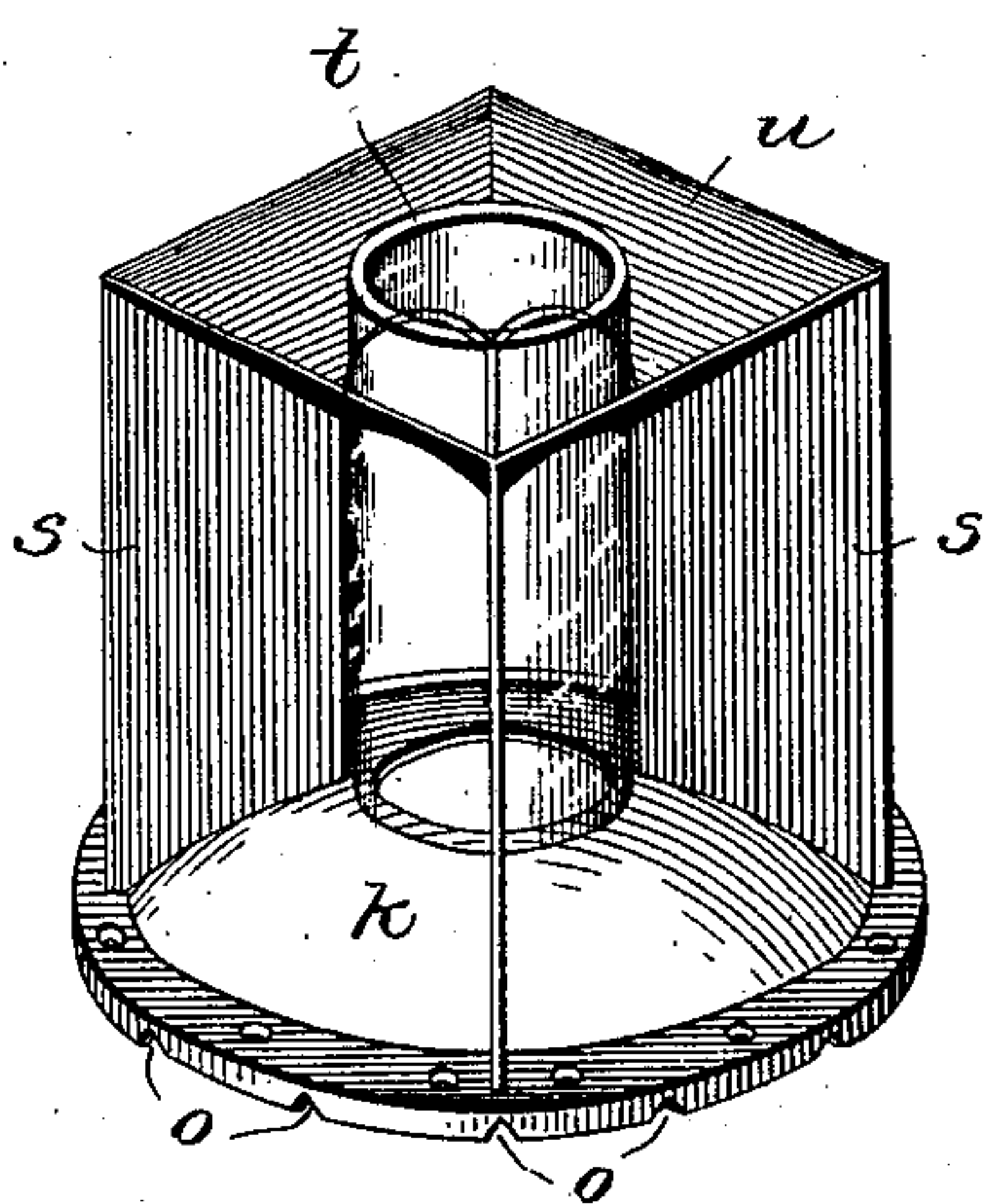


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK V. BENSON, OF TOPEKA, KANSAS.

SIGNAL-LANTERN.

SPECIFICATION forming part of Letters Patent No. 721,657, dated March 3, 1903.

Application filed March 23, 1901. Serial No. 52,524. (No model.)

To all whom it may concern:

Be it known that I, FRANK V. BENSON, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Signal-Lanterns, of which the following is a specification.

The invention relates to that class of lanterns which are used for signals on the rear car of railway-trains and in which it is desired to give colored signals, and particularly to the arrangement and construction thereof, all of which will more fully hereinafter appear.

The principal object of the invention is to provide a simple, economical, and efficient signal-lantern; and the invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical central sectional elevation taken through a lantern, showing it as it appears when constructed in accordance with these improvements; Fig. 2, a plan sectional view taken on line 2 of Fig. 1 looking in the direction of the arrow, and Fig. 3 a perspective view of the chimney and reflector removed from the lantern.

In constructing a lantern of this kind it is desirable to provide an inclosing holding portion which not only acts to close and protect the font, burner, and other parts, but also contains a number of lenses of desired colors. In accomplishing this result an inclosing portion *a* is provided, having four radial tubular projections *b*, each of which contains a corrugated lens *c* of the desired size and shape. This inclosing portion is provided with an opening in the bottom tubular part, into which the font *d*, with its burner and other parts, may be inserted. In line with this bottom portion is an upper tubular portion, which carries a cone-shaped shield *e* and above the opening of which is arranged a cowl or hood *f*, so as to protect the hand of the user when holding the lamp by means of the bail *g*. In a signal-lantern of this class it is highly desirable that the burner proper or the tip through which the wick *i* passes be protected as much as possible from the rush or current of air and that the air be supplied to the burner in as efficient a manner as possible. To this end the font is provided with

a burner comprising a tube portion *h*, extending down into the same and which acts to hold the wick in position. The burner-tip is provided with a cup-shaped protector *j*, which prevents the current of air as it enters in the manner hereinafter described from coming directly into contact with the flame, and thereby extinguishing it.

To admit air to the burner in as efficient a manner as possible, the font is provided with a cap *k*, hinged to said font at *l* at one side thereof and held in engagement with the font at the other side by means of a latch *m*. This cap when in operative position in connection with the upper wall of the font provides an air-supplying chamber *n*, into which the air passes through the perforations *o* in the periphery of the cap. The air coming into this chamber passes upwardly, is deflected again by means of the protector *j*, and then allowed to mingle with the distilled gases without tending to extinguish the flame.

To prevent the movement of the wick in one way or another without the manipulations of the user, a spring *p* is provided, secured to the burner-tube and provided with a pin-point *q*, arranged to enter into the wick and hold it in any desired position, at the same time permitting the spring with its pin-point to be withdrawn and allow the readjustment of the wick. The burner-tube is also provided with a number of openings *r*, arranged therein immediately under the cap *k* and in the air-chamber above alluded to, so that the air in a measure may pass through the wick to prevent the oil from clogging and provide for a free passage therefor and also through which any surplus oil from the wick may escape and be fed back to the font.

It is desirable that a lantern of this kind be provided with a set of reflectors which may be removed at any time and which will provide for the deflecting of the rays of light out through each and all of the lenses. To accomplish this result, the cap *k* is provided with a plurality of upwardly and radially extending wings *s*, which assist to support as well as surround the chimney *t*. The chimney, as is usual in such instances, is arranged directly over the burner and in alinement with the burner-tube, so as to confine the gases and oxygen and provide for the desired

illumination. These reflecting-wings *s*, as suggested, extend radially from the chimney and are secured to the cap at their lower ends and to each other at their upper ends by means of inclined metallic pieces *u*, which also form a portion of the reflectors. It will be seen from an examination of the drawings that the side wings converge toward the center of the chimney, while the convex cap *k* and the inclined upper pieces *u* are used to complete the reflectors or what might be termed a "multiple" reflector. These reflectors are arranged as shown in Fig. 2, so that there is one for each lens to guide or reflect the rays of light through such lens. The chimney is held in position, as above suggested, by means of these reflectors, so that when the lantern-cap is moved the multiple reflector and chimney are also moved into or from position over the burner, so as to permit of easy adjustment or repair whenever necessary.

To hold the font in operative engagement with the inclosing holder, it is provided with a pair of bayonet-shaped springs *v*, which are arranged to contact a shoulder *w* upon the holder and lock it firmly in position. The pressing inwardly of these springs by means of the finger and thumb permits the user to remove the font whenever desirable or necessary.

I claim—

1. A lamp of the character described, comprising an inclosing holder provided with a suitable lens, a font secured to said holder, a burner associated with the font, and a removable reflector for the lens comprising a supporting device *k* having an inclined upper surface constituting the lower portion of the reflector, vertically-disposed outwardly-inclined wings *s* carried by said supporting device, and a horizontally-disposed correspondingly-inclined upper connecting member *u*; substantially as described.

2. A lamp of the character described, comprising an inclosing holder provided with a plurality of lenses, a font secured to said holder, a burner associated with the font, and a removable reflector for all of the lenses comprising a convexed supporting device *k* constituting the lower portion of the reflector, separated vertically-disposed outwardly-inclined wings *s* for each lens carried by said supporting device, and horizontally-disposed correspondingly-inclined upper connecting members *u* united at their adjacent edges and secured to the upper portions of the adjacent vertically-disposed wings, substantially as described.

3. In a lantern of the character described, the combination of an inclosing holder provided with a plurality of lenses, a font removably associated with the holder and provided with a burner, and vertically-disposed reflector-wings for each lens supported independently of the holder, substantially as described.

4. In a lantern of the character described,

the combination of an inclosing holder provided with a plurality of lenses, arranged substantially at right angles to each other, a font removably associated with said holder and provided with a burner, a cap on the font, and a vertically-disposed reflector-wing secured at its lower end to the cap and projecting upwardly therefrom and supported independently of the holder, substantially as described.

5. In a lantern of the character described, the combination of an inclosing holder provided with a lens, a font removably secured in said holder and provided with a burner, a cap disassociated with the holder and supported by the font, and a vertically-disposed reflector-wing secured at its lower end to the cap, substantially as described.

6. In combination with a burner and its inclosing casing, a removable reflector comprising a cap *k*, and radially-disposed vertically-arranged wings *s* secured at their lower ends to the cap, substantially as described.

7. In combination with a burner and its inclosing casing, a removable reflector comprising a cap *k*, and two opposite radially-disposed vertically-arranged wings *s* secured at their lower ends to the cap, substantially as described.

8. In combination with a burner and its inclosing casing, a removable reflector comprising a cap *k*, two opposite radially-disposed vertically-arranged wings *s* secured at their lower ends to the cap, and a member *u* connected at its ends to the upper ends of the wings, substantially as described.

9. A removable reflector for lamps provided with lenses, comprising a cap *k*, and radially-disposed vertically-arranged wings *s* secured at their lower ends to the cap, substantially as described.

10. A removable reflector for lamps provided with lenses, comprising a lower supporting member or base, and radially-disposed vertically-arranged wings secured at their lower ends to said lower supporting member or base, substantially as described.

11. In combination with a burner and its inclosing casing, a reflector supported independently of the casing and comprising a cap *k*, two opposite radially-disposed vertically-arranged wings *s* secured at their lower ends to the cap, and a member *u* connected at its ends to the upper ends of the wings, substantially as described.

12. A lamp of the character described comprising an inclosing holder provided with a suitable lens, a font supported within said holder, a burner associated with the font, a hollow cap arranged below the burner and resting upon the top of the font to form an air-chamber between the cap and the font, said cap being perforated around its edges to provide air-inlets, an outlet from the air-chamber at a point adjacent to the burner, a chimney supported at the central portion of the cap directly over said outlet, and verti-

cally-disposed reflectors supported by the cap with their inner edges terminating at a point adjacent to the chimney, substantially as described.

5 13. In a lamp of the character described, the combination of an inclosing holder having a suitable lens, a font supported within said holder, a burner associated with said font, a removable cap concaved on its interior and having openings at its edge resting on said font to provide an air-space between it and the font and having an outlet at its central portion through which air is admitted to the burner, a chimney supported at the 10 central portion of the cap directly over said outlet, and vertically-disposed reflectors supported by the cap with their inner edges terminating at a point adjacent to the chimney, substantially as described.

20 14. In a lamp of the character described, the combination of an inclosing holder having a suitable lens, a font supported within said holder, a burner associated with the font, a cap perforated around its periphery and arranged to provide an air-space between the same and the top of the font through which air is admitted to the burner, a chimney supported by the cap, and vertically-disposed reflectors on the cap between the inner edges 25 of which the chimney is supported substantially as described.

30 15. In a lamp of the character described, the combination of an inclosing holder having a suitable lens, a font supported within the holder, a burner associated with said font, a convexed cap perforated around its periphery and resting directly upon the top of the font to provide an air-space between the cap and the top of the font and having an outlet through which air is admitted to the burner, a chimney supported at the central portion of the cap directly over said outlet and vertically-disposed reflectors supported by the cap with their inner edges terminating at a point adjacent to the chimney, substantially as described. 35 40 45

16. In a lamp of the character described, the combination of an inclosing holder having a suitable lens, a font supported within said holder, a burner having a depending tubular portion provided with a wick and associated with said font, a cap resting upon the top of the font to provide an air-chamber between the cap and said top, an air-inlet to said chamber, an outlet at the center thereof to the burner, said tubular burner being perforated at a point within said air-chamber, a chimney supported at the central portion of the cap directly over said outlet, and vertically-disposed reflectors supported by the cap with their inner edges terminating at a point adjacent to the chimney, substantially as described. 50 55 60

17. In a lamp of the character described, the combination of a holder, a font supported therein, a burner associated with the font, a

hollow cap having openings at its edge and resting on the font to provide an air-space between it and the font from which air is admitted to the burner, a chimney above the cap, and vertically-disposed reflectors between the inner edges of which the chimney is supported substantially as described. 70 75

18. In a lamp of the character described, the combination of a holder, a font supported therein, a burner associated with the font, a removable hollow cap having openings at its edge and resting on the font to provide an air-space between it and the font and having an outlet from which air is admitted to the burner, a chimney supported at the central portion of the cap directly over said outlet, and vertically-disposed reflectors supported by the cap with their inner edges terminating at a point adjacent to the chimney, substantially as described. 80 85

19. In a lamp of the character described, the combination of an inclosing holder, a font supported therein, a burner associated with the font and having a depending tubular portion provided with a wick extending into the font, a cap located below the top of the burner and supported by the font to constitute with the top of the font an air-chamber, said chamber having an outlet adjacent to the burner, a flange at the tip of said tubular portion of the burner and above the cap to prevent direct contact of the air with the burner-flame, a chimney within the holder and supported at the central portion of the cap directly over said outlet and vertically-disposed reflectors supported by the cap with their inner edges terminating at a point adjacent to the chimney, substantially as described. 90 95 100 105

20. In a lamp of the character described, the combination of a font, a burner having a depending tubular portion provided with a wick and associated with the font, a cap located below the top of the burner and supported by the font to constitute with the top of the font an air-chamber, said chamber having an outlet adjacent to the burner, a chimney at the central portion of the cap directly over the outlet therefrom and vertically-disposed reflectors on the cap between the inner edges of which the chimney is supported, substantially as described. 110 115

21. A lamp of the character described, provided with a font, a burner having a depending tubular portion provided with a wick and associated with the font, said tubular portion being perforated, a hollow cap located between the top of the burner and the upper portion of the font to constitute an air-chamber, said chamber having an outlet adjacent to the burner, a flange at the tip of said tubular portion and above the cap to prevent direct contact of the air with the burner-flame, a chimney supported upon the central portion of the cap directly over the outlet-opening therefrom, and vertically-disposed re- 120 125 130

flectors supported by the cap with their inner edges terminating at a point adjacent to the chimney, substantially as described.

22. A reflector for lamps comprising a lower supporting part or base, and vertically-disposed reflectors secured thereto arranged with their inner edges spaced apart and adapted to support a chimney therebetween, substantially as described.

23. In combination with a burner and its inclosing casing, a removable reflector comprising a cap *k* curved upon its upper surface, and radially-disposed vertically-arranged wings *s* secured at their lower ends to the cap and supported thereby independently of the

casing, said curved upper surface of the cap constituting the lower reflecting-surface; substantially as described.

24. In a lantern of the character described, the combination of an inclosing holder provided with a suitable lens, a font secured to the holder and provided with a burner, vertically-disposed reflector-wings, and means for supporting said wings upon the font and independently of the holder, substantially as described.

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