(No Model.) 2 Sheets—Sheet 1.

T. S. EASTERBROOK.

SIGNAL LANTERN.

No. 445,606. Patented Feb. 3, 1891.

Fig. 1.

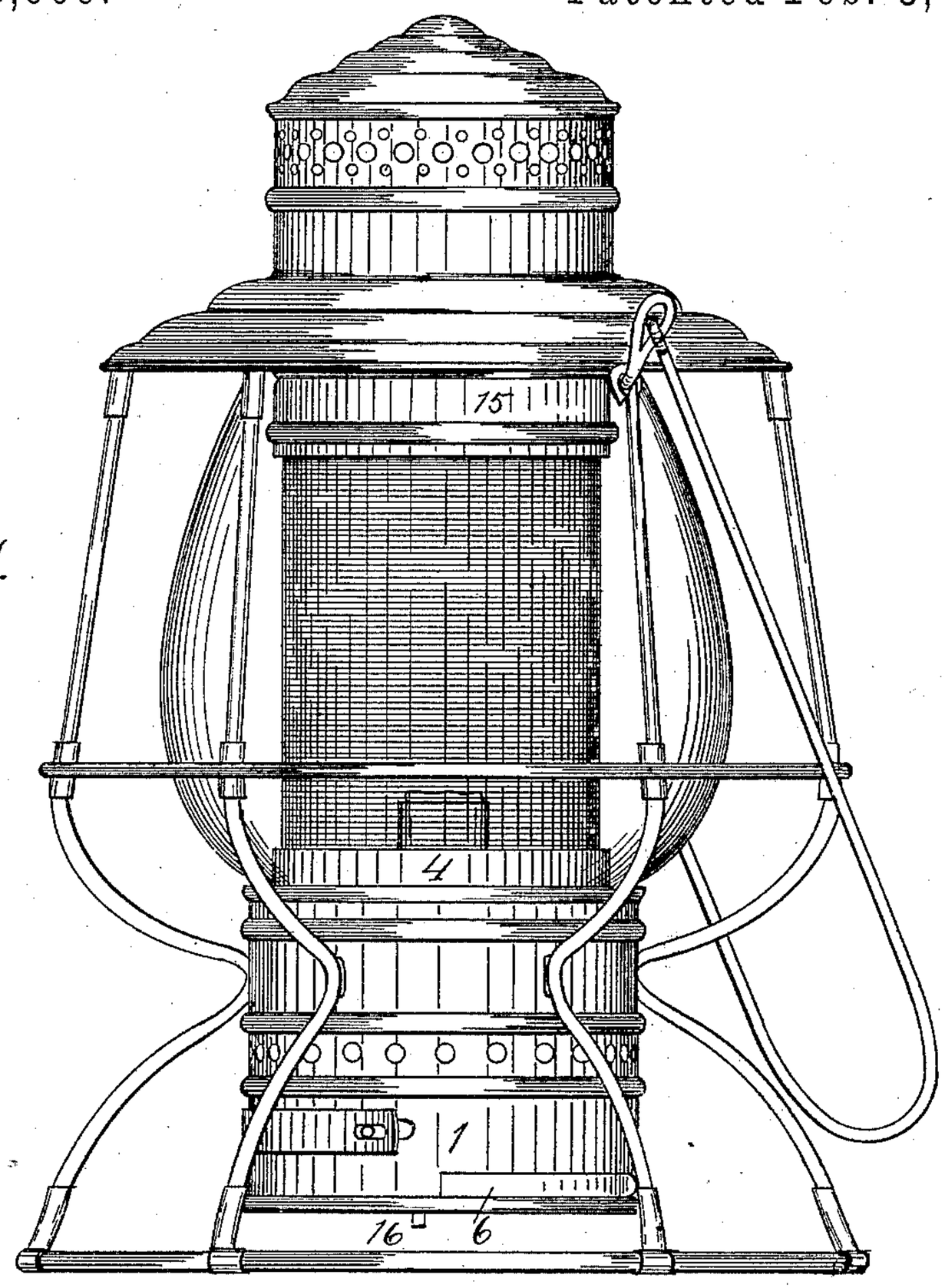
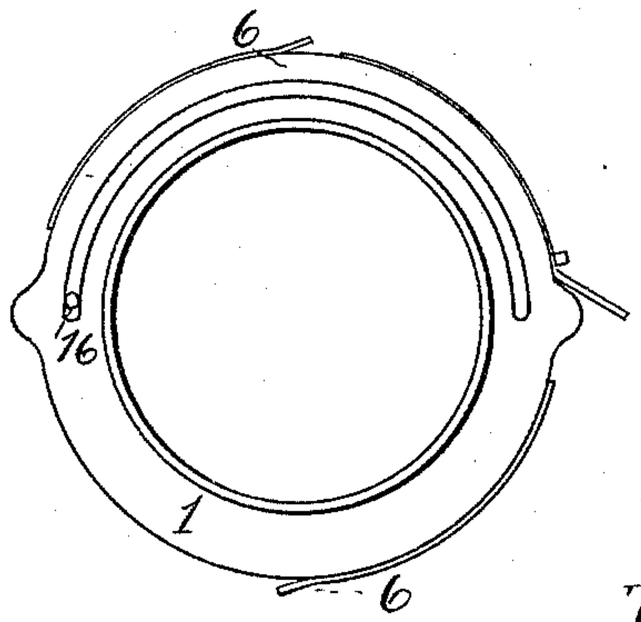


Fig. 2.



Witnesses:
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Inventor:
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By Church & Church Attorney.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

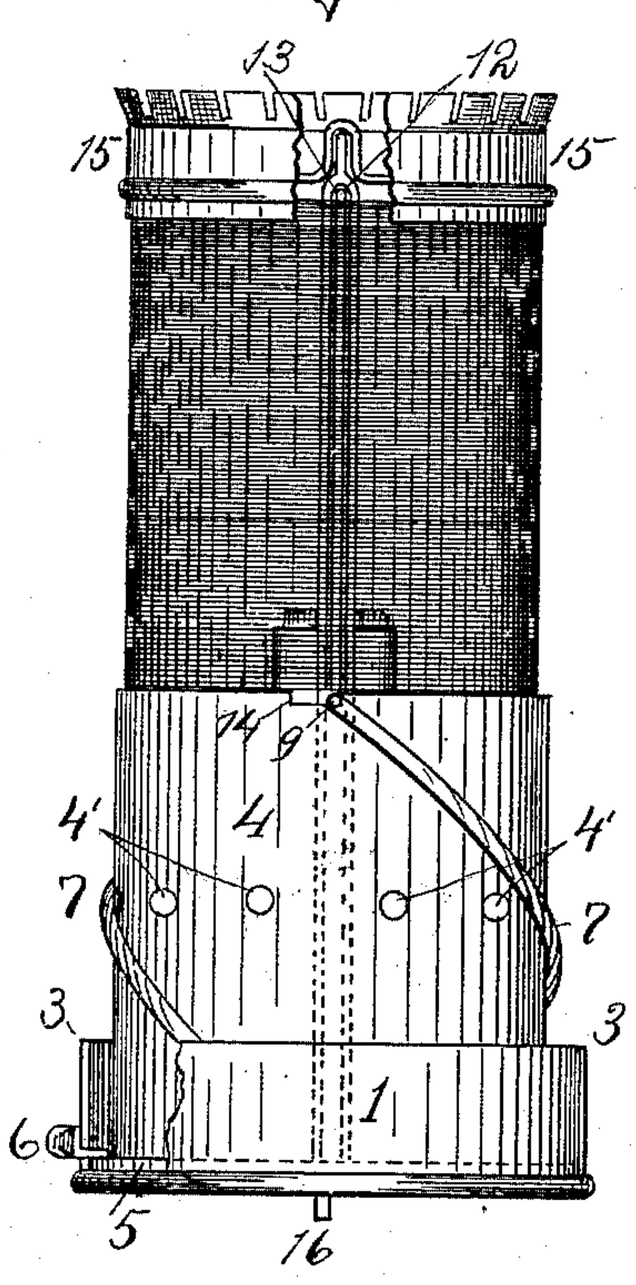


Fig. 4.

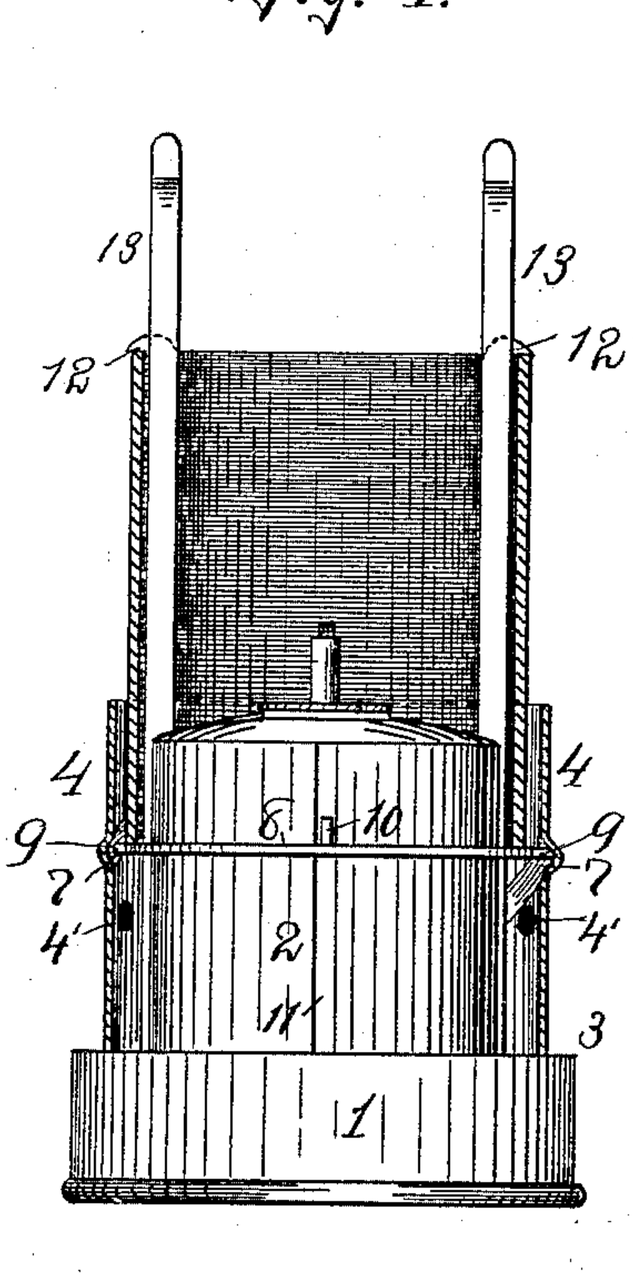
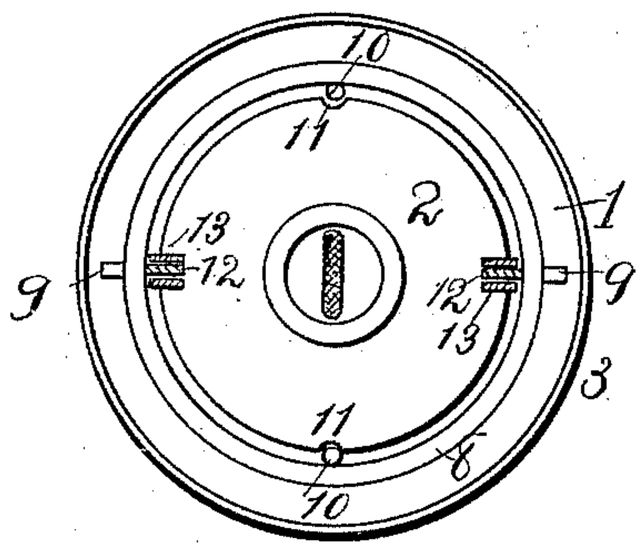


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS S. EASTERBROOK, OF ST. PAUL, MINNESOTA.

SIGNAL-LANTERN.

SPECIFICATION forming part of Letters Patent No. 445,606, dated February 3, 1891.

Application filed February 12, 1890. Serial No. 340,205. (No model.)

To all whom it may concern:

Be it known that I, THOMAS S. EASTERBROOK, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Signal-Lanterns; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in that class of lanterns commonly used for railroad purposes and of that particular variety of such lanterns which have a signaling attachment, consisting, generally, of a colored globe or shade adapted to be raised to surround the light when the lantern is to be used for signaling purposes and to be lowered away from the light when only the white light is required. The lantern is thus adapted to serve the double purpose of the ordinary lantern and the red light commonly used for signaling.

The invention consists, particularly, in the construction and arrangement of the means employed for manipulating the colored shade, whereby the same may be instantly raised or lowered in the devices employed for guiding the movement of the shade and for the locking of the same when in raised position, together with other features which will be hereinafter more fully set forth.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents in elevation an ordinary railroad-lantern as provided with my attachments; Fig. 2, an under side view of the same; Fig. 3, an elevation of the base of the lantern provided with my attachment, showing the colored shade raised; Fig. 4, a similar view, partially in section, showing the shade partially raised; and Fig. 5, a plan view, partly in section, of the shade-support and guides for the same.

In the drawings, 1 is the base of the lantern, in which the oil reservoir or can 2 is situated. Within the surrounding wall 3 of the base is mounted a cylinder 4, provided with an outwardly-extending flange 5 at its base, which is adapted to fit just inside the wall 3 of the base, so as to turn freely therein, leaving a considerable space between the cylinder and the can for the purpose of allowing free circulation of air. The cylinder is retained in place and prevented from rising by means of a spring catch or catches 6, extending through a slot in the wall of the base just over the flange 5.

The cylinder 4 is provided with grooves or channels 7, swaged therein from the inside in the form of a screw-thread, consisting, preferably, of two half-turns of a spiral, each running from the upper edge of the cylinder halfway around the same to a point diametrically opposite at the bottom of the cylinder. Within the cylinder and in the space between the same and the can is the annular shade-support 8, having studs 9 9 upon its outer circumference which set into the spiral grooves or channels 7 in the cylinder in such a manner that when the latter is turned the support is raised or lowered in the manner of a a screw, according to the direction in which the cylinder is turned. If required, the support may be guided by means of inner lugs 10 10, secured thereto or formed thereupon, adapted to slide in channels 11, formed in or upon the sides of the can, in addition to the guides hereinafter mentioned.

Upon opposite sides of the shade-support, and preferably at the points where the studs 9 are located, are attached upright bars 12 12, preferably consisting of a flat piece of metal extending upwardly from the support to a distance equal to the height of the colored shade, where they terminate in outwardly-extending hooks adapted to take over the upper edge of the shade and clasp the same firmly. The bars 12 are set back far enough from the outer edge of the support to allow for the thickness of the shade, so that the latter may rest firmly upon it.

To the sides of the can or to the base close against the side of the can are located the guides 13 13, consisting of a grooved strip of metal or of two strips of metal with a space between them, in which the bars 12 slide. These guides 13 are of a length about equal

to the combined height of the cylinder and the shade to admit of the latter being raised to the top of the cylinder or lowered wholly within the same. In the drawings I have shown these guides as set into channels or depressions swaged or otherwise formed in the sides of the can for the purpose of affording a firm support, as well as serving the additional purpose of assisting in keeping the oil in the can warm in cold weather by reason of the heat received from extending upwardly alongside the flame.

For the purpose of retaining the shade in place against any accidental jar or displacement by which it might be caused to gradually run down the threads or grooves to its lower position, a notch 14 is formed at the upper edge of the cylinder at the termination of one of the grooves, into which the stud 9 slides upon a slight additional turn of the cylinder. This is clearly shown in Fig. 3, in which the shade is shown at its upper limit and the stud 9 is about to enter upon the rest formed by the notch 14. When so turned, the stud 9 has a horizontal support, and no amount of jarring or any movement short of reversing the cylinder can displace it. The shade is thus securely locked in its raised position, and is as firmly secured as the main globe of the lantern.

To avoid the possibility of any rocking movement of the shade upon its support, a ring 15 may be mounted upon the upper extremities of the guides 13, into which the upper end of the shade is received when elevated. This ring preferably sets loosely upon the top of the guides and has its upper edge extending outwardly or flared, so as to touch the inside of the globe. The ring is preferably of light material, such as tin, and its outer and upper edge is notched or serrated, in order to permit of sufficient flexibility to adapt itself to the form of the interior of the globe. A firm support is thus afforded for the top of the shade, and displacement in any direction is impossible in any position of the lantern.

The cylinder is operated by means of a stud or pin 16, extending through a semicircular slot in the base of the lantern. By moving the stud from one end of the slot to the other the cylinder is turned a half-revolution and the support elevated from the lower to the upper end of the groove or channel in the cylinder. The guides are preferably so located as to leave a little space between the same and the sides of the shade to prevent any possibility of injury to the shade from the guides becoming heated. The cylinder 4 is perforated or provided with several apertures 4′ for the purpose of admitting air from below to the flame, the construction herein described providing for a sufficient space between the cylinder and the lamp for a free circulation of air.

Lanterns of this class have heretofore been constructed in which the cylinder fits closely upon the periphery of the can, in which case when the shade is raised there is no opportunity afforded for draft from below, for which reason such lanterns have been found unsatisfactory, in that the light will not burn with sufficient brilliancy when the shade is elevated. It will be observed that in this construction the draft may be as free as if the attachment were not used.

The attachment may be fitted to a lantern of ordinary construction of the kind commonly used for railroad purposes at a slight expense. The whole is capable of easy and rapid adjustment, and by reason of the method of supporting the shade herein described the latter is firmly held in either position and as little liable to displacement or breakage as the globe of the lantern itself. When the shade is lowered, it is completely protected upon all sides by the inclosing cylinder.

I am aware that various devices for this purpose in which a colored-glass shade adapted to be moved vertically within the globe is employed for signaling purposes have been the subject of previous patents; but the present construction is designed to obviate certain difficulties found therein and to furnish a more effective and economical construction.

I claim as my invention—

1. The combination, with the base of a lantern having a circular wall surrounding the same and a lamp mounted upon said base, of a cylinder having an outwardly-extending annular flange at its base fitting within said wall and interior spiral grooves formed therein, the annular shade-support surrounding the lamp within the cylinder, studs upon the outer circumference of said shade-support, a pin or knob secured to said cylinder and extending through a semicircular slot in the base of the lantern, and a spring-catch upon said circular wall for preventing the upward movement of said cylinder, substantially as specified.

2. The combination, with the base of a lantern having a circular surrounding wall and lamp mounted in the center thereof, of a cylinder having a bearing within said wall and spiral grooves formed in the interior thereof, means for rotating said cylinder, studs upon said shade-support engaging with said grooves, grooved guides extending upwardly from said base upon each side within said support, the shade, and vertical bars secured to said support having hooks at their upper extremities adapted to grasp the upper edge of the shade, the said bars lying in the grooves of said guides and adapted to slide therein, substantially as specified.

3. The combination, with the base of a lantern having a circular surrounding wall and lamp mounted in the center thereof, of a cylinder having a bearing within said wall and spiral grooves formed in the interior thereof, means for rotating said cylinder, an annular shade-support mounted between the said lamp

and cylinder, studs upon said support engaging with said grooves, guides between which said support is mounted extending upwardly upon opposite sides of the same, a cylindrical shade resting upon said support, and a ring resting upon the top of said guides in position to receive and support the upper edge of said shade, substantially as and for the purpose herein specified.

4. The combination, with the globe and frame of the lantern, the lamp having a projecting base and circular surrounding wall, of a cylinder having a bearing within said wall and spiral grooves formed in the interior thereof, means for rotating said cylinder, an annular shade-support mounted between said lamp and cylinder, studs upon said support engaging with said grooves, guides between which said support is mounted extending upwardly upon each side of the lamp, a cylindrical shade resting upon said support, and a ring mounted at the upper extremities of said guides in position to receive and support the upper edge of the shade, and yielding points or projections upon the said ring adapted to rest against the interior of the globe, substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS S. EASTERBROOK.

Witnesses:
WALTER HOLCOMB,
F. W. LANE.