

No. 735,500.

PATENTED AUG. 4, 1903.

W. S. HAMM.
SIGNAL LANTERN.

APPLICATION FILED MAR. 5, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 2.

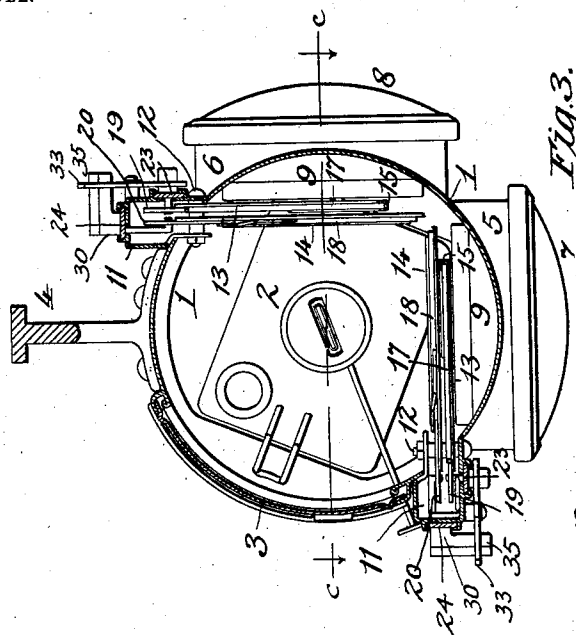


Fig. 3.

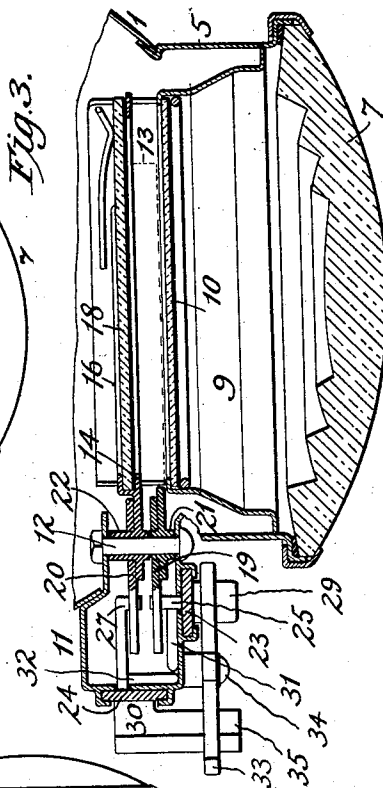
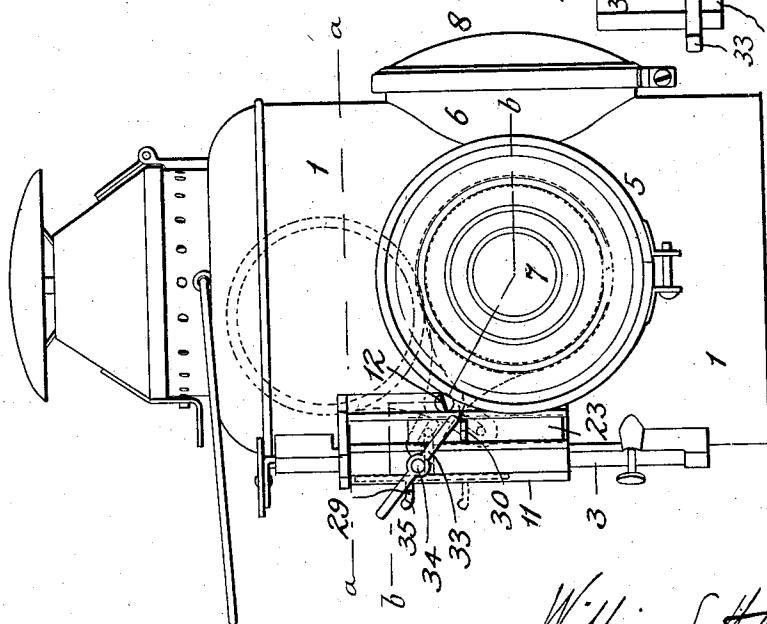


Fig. 1.



Witnesses

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3 SHEETS—SHEET 2.

Fig. 5.

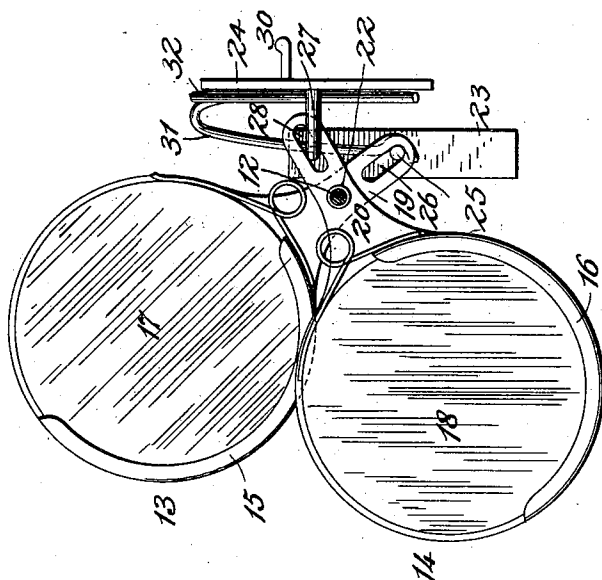
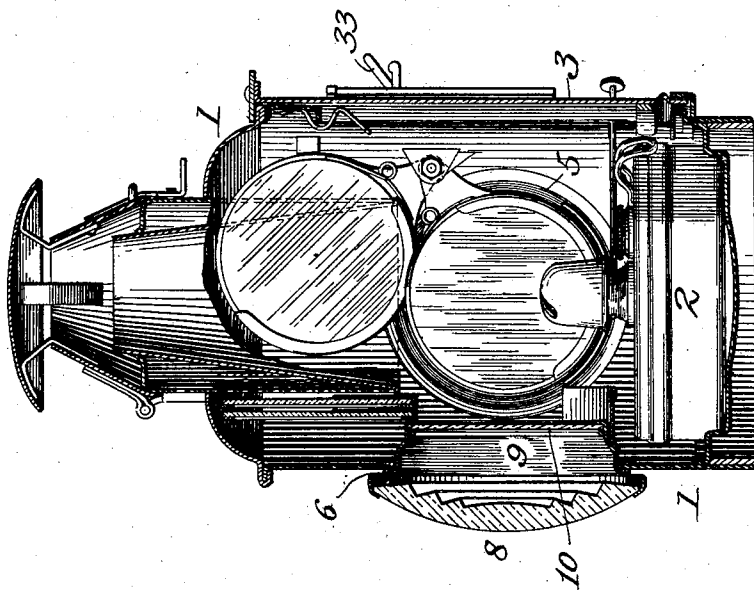


Fig. 4.



Witnesses

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NO MODEL.

3 SHEETS—SHEET 3.

Fig. 9

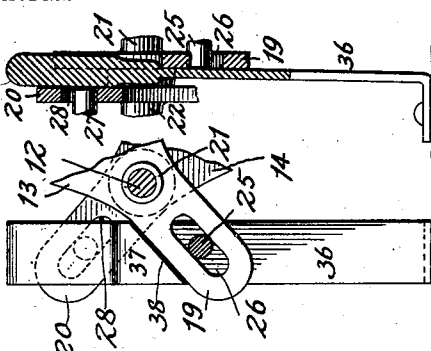


Fig. 10

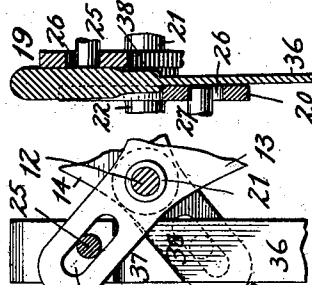


Fig. 11



Fig. 12

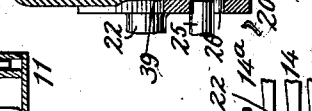


Fig. 8

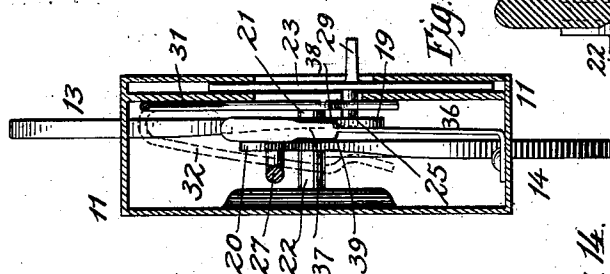


Fig. 13

Fig. 14

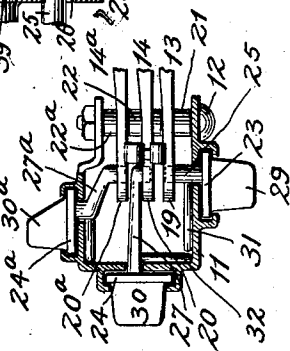


Fig. 6

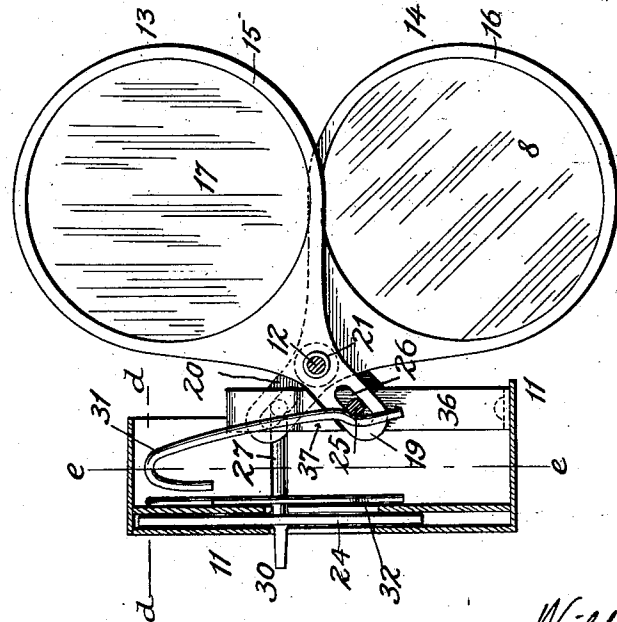
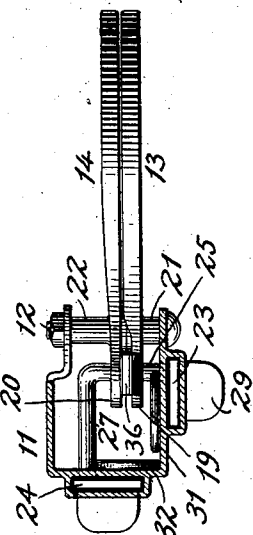


Fig. 7



Inventor

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UNITED STATES PATENT OFFICE.

WILLIAM S. HAMM, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE ADAMS AND WESTLAKE COMPANY, OF ILLINOIS.

SIGNAL-LANTERN.

SPECIFICATION forming part of Letters Patent No. 735,500, dated August 4, 1903.

Application filed March 5, 1903. Serial No. 146,316. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. HAMM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Signal-Lanterns, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

This invention relates to a signal-lantern for use on railroads, it being especially designed for use at the front of locomotives for projecting forwardly and on each side clear or colored lights intended to convey to railroad employees along the line certain definite information. These signal-lanterns are preferably employed in pairs, one lantern on each side of the locomotive, and have therefore each two openings through which the light-rays of a lamp pass and are projected, by means of lenses covering the openings, in advance of and to each side of the locomotive. Behind each lens are pivoted two frames, each carrying a colored glass, one of which is preferably red and the other green. Suitable mechanism operated externally of the lantern-body is provided, by means of which one or the other of the colored glasses may be interposed between the light and the lens or both colored glasses removed, so as to display a "clear" or "safety" light. A locking device also forms a feature of my improvement, by the use of which the act of moving one of the colored glasses between the light and the lens locks the other glass in inoperative position and so holds it until the first-mentioned glass has been moved from the signaling position. It is to be understood that while this signal-lantern is particularly applicable to locomotives its use will not be so confined, but may be employed wherever a lantern of this character can be advantageously applied.

For a more detailed description of this invention attention is directed to the following specification and to the drawings forming a part thereof, in which—

Figure 1 represents an elevation of my improved signal-lantern; Fig. 2, a horizontal section thereof on the line *a a*; Fig. 3, a similar section, on an enlarged scale, of a portion

of the lantern, taken on the line *b b*; Fig. 4, a vertical section on the line *c c* of Fig. 2, and Fig. 5 a view of the signal disks or glasses and their mountings detached from the lantern-body. Fig. 6 shows the signal disks or glasses with a modified form of locking mechanism. Figs. 7 and 8 are sections on the lines *d d* and *e e*, respectively, of Fig. 6. Figs. 9 to 13, both inclusive, show the operation of the modified locking mechanism. Fig. 14 shows a further modification.

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

The lantern-body (indicated by the numeral 1) contains a lamp 2, adapted to be inserted to and withdrawn from the casing 1 through an opening in the side, preferably closed by a vertically-sliding door 3. A bracket 4 is riveted to one side of the body for the purpose of holding the lantern in position on a locomotive or wherever it is to be attached.

Projecting outwardly from the lantern-body at right angles thereto and to each other are two cylindrical lens-holders 5 6, opening into the lantern-body 1, as represented in Figs. 3 and 4, each lens-holder carrying at its outer end a lens 7 or 8. Within each lens-holder is fixed a conically-shaped thimble 9, the inner or smaller end of which is closed by a disk 10 of clear glass. The lens-holders 5 6, shown cylindrical, may be of conical shape and support the disks 10, thus dispensing with the thimbles 9. The construction shown and described is, however, preferred.

The signal-operating mechanism being the same for both lenses, a description of one will suffice for both, the same numerals of reference being used for each.

Secured to the lantern-body 1, at one side of the cylindrical lens-holder 6 or 7, is a box-like casing 11, to which a pivot-bolt 12 is secured and on which the signal-glass carriers 13 and 14 are adapted to rock. The signal-glass carriers are so disposed within the body 1 that when they are raised a clear light is visible; but when one or the other is lowered a colored light, such as red or green, is displayed. Each signal-glass carrier consists of a circular frame 15 or 16, in which a colored glass 17 or 18 is supported, and an arm 19 or

20, said arms projecting from the frames 15 16. Sleeves 21 22, attached to the respective arms 19 20, surround the pivot-bolt 12 and rock thereon. Slides 23 24, mounted in guides 5 on the front and side, respectively, of the box-like casing 11, are each provided with a pin arranged to enter a slot formed in one of the arms 19 or 20. The slide 23 carries a pin 25, projecting into the slot 26 of the arm 19, while a pin 27 on the slide 24 coacts with the slot 28 in the arm 20. Finger-pieces 29 30 are formed on the outer sides of the respective slides 23 24, by means of which the signal-glasses 17 18 are raised and lowered. 15 To retain the signal-glasses in elevated position when a clear signal is to be displayed and prevent them from being accidentally lowered by shaking, rocking, or otherwise, springs 31 32, secured within the casing 11, are provided, the free ends of which are hook-shaped and engage the respective pins 25 27 when the signal-glasses are raised and hold them securely in that position.

In the use of signal-lanterns having movable glasses it is important that while a signal of one color is displayed means may be provided for securely locking the other signal-glass carrier in inoperative position until the first-named signal has been carried out 30 of range of the light from the lamp. Two equivalent forms of devices for performing this operation are shown, one being on the outside of the lantern and illustrated in Figs. 1 to 5, both inclusive, while the other is seen in 35 Figs. 6 to 13, both inclusive, the locking mechanism here being inclosed by the box-like casing 11. In the first form a bar 33, centrally pivoted to the outside of the casing 11, swings freely on a pin 34 when both signal-glass 40 carriers are in elevated or inoperative position, the finger-pieces 29 30 being substantially in the same horizontal plane beneath the bar 33. An extension 35 is formed on the finger-piece 30 to cooperate with the bar. 45 (See Figs. 2 and 3.) When either finger-piece is grasped and its attached slide raised to lower the signal-glass connected therewith into operative position, such finger-piece engages with and raises the end of the bar 33 50 above it, depressing its other end into contact with the other finger-piece, holding it in depressed position, as shown in full lines in Fig. 1. Any attempt to raise the depressed slide is prevented by the bearing of the bar 55 33 against the elevated finger-piece. Before the signals can be changed the raised finger-piece and its slide must be lowered, after which the other slide may be elevated, the effect of which is the bringing of a different 60 colored glass in front of the light and the tilting of the bar 33 in the opposite direction.

In the second form of lock (see Figs. 6 to 13, both inclusive) an upright spring-bar 36, secured to the floor of the casing 11, stands 65 between the arms 19 and 20. The upper end of the spring-bar is thickened at 37, two inclined shoulders 38 39 being thus formed,

which when the spring-bar is moved to one side or the other passes over the arm 19 or 20 and holds it in depressed position. When 70 both signal-glass holders are in the raised or inoperative position, both of the arms 19 and 20 lie just below the shoulders, as indicated in Fig. 13. When a slide—as, for instance, 75 24—is raised, it lifts the arm 20 of the signal-glass holder 16 and causes the latter to bear against the upper thickened end 37 of the spring-bar 36 and press it to one side, thus carrying the shoulder 38 over the arm 19. (See Figs. 9 and 10.) In such position the 80 signal-glass carrier 15 is securely locked against any effort to lower it until the carrier 16 is raised to its full height, thus releasing the arm 19 from engagement with the shoulder 37. The raising of the slide 23 to lower 85 the signal-glass 17 acts to move the spring-bar in the opposite direction and lock the signal-holder 16 against movement. Thus it will be seen that whenever a signal of one color is displayed it is impossible to eclipse 90 it by one of another color. The signal-holders and locking mechanism herein described are, I believe, broadly new, and I wish to claim them irrespective of the selected form of lock, which may be variously modified 95 without departing from my invention.

The operation of the signal-lantern herein described will be fully understood from the foregoing description of its several parts. My invention is simple and effective in action, 100 not liable to breakage or disarrangement by rough or careless usage, and in its employment errors known to be frequent in the use of other classes of lanterns designed for similar purposes are necessarily avoided. 105

I do not restrict myself to the exact details of construction, combination, and arrangement herein set forth, it being obvious that minor variations thereof not involving the exercise of invention may be made by the 110 skilled mechanic, and such departures from what is herein described and claimed not involving invention I consider as within the scope and terms of my claims. Thus in Fig. 14 means are shown for operating three signal-glass carriers 13, 14, and 14^a by means of 115 finger-pieces 29, 30, and 30^a, respectively, and their individual pins 25, 27, and 27^a. An additional slide corresponding with those, 23 and 24, previously described is here shown by 24^a 120 and an additional sleeve by 22^a, the arm of the signal-glass carrier 14^a being indicated by 20^a.

Having thus described my invention, I claim— 125

1. Combined in a lantern, a plurality of signal-glass holders having arms independently mounted upon a common pivot, and means, associated with said arms, whereby the movement of a signal-glass holder to operative position shall lock the other signal-glass holders 130 in inoperative position, substantially as set forth.

2. Combined in a lantern, a plurality of sig-

nal-glass holders, arms therefor independently mounted on a common pivot, means, associated with each of said arms, for independently operating its signal-glass holder, and means adapted, when one signal-glass holder is moved to operative position, to lock the other signal-glass holders in inoperative position, substantially as set forth.

3. Combined in a lantern, a plurality of independently-movable signal-glass holders, arms therefor mounted on a common pivot, and means for independently operating each signal-glass holder, and adapted, upon the movement of one signal-glass to operative position, to lock the other signal-glasses in inoperative position, substantially as set forth.

4. Combined in a lantern having a plurality of independently-movable signal-glass holders mounted on a common pivot, means whereby a signal-glass holder, when moved to bring its signal-glass to operative position, shall also lock the other signal-glasses in inoperative position, substantially as set forth.

5. Combined in a lantern, a plurality of signal-glass holders, a pivot common to the several holders, a slide connected to each holder and adapted to operate the same, and means for holding each signal-glass holder in inoperative position substantially as set forth.

6. Combined in a lantern, a plurality of independently-movable signal-glass holders, a pivot common to the several holders, a slide connected to each holder and adapted to operate the same, and means for holding each signal-glass holder in inoperative position, substantially as set forth.

7. Combined in a lantern, a plurality of independently-movable signal-glass holders, a pivot common to the several holders, a slide for each holder operatively connected thereto by means of a pin on the slide, and means for engaging the pins whereby to hold the signal-glasses in inoperative position, substantially as set forth.

8. Combined in a lantern, a plurality of independently-movable signal-glass holders, a pivot common to the several holders, a slide for each holder operatively connected thereto by means of a pin on the slide, and a spring for each signal-glass holder having an end to engage said pin and retain said holder in inoperative position, substantially as set forth.

9. Combined in a lantern, a plurality of independently-movable signal-glass holders having arms, a pivot common to the arms of the several holders, means for independently operating each of said holders, and means adapted to lock certain of said holders in in-

operative position coincidently with the movement of one holder into operative position, substantially as set forth.

10. Combined in a lantern, a plurality of independently-movable signal-glass holders, a pivot common to the several holders, means for operating each of said holders, and means whereby the act of moving into operative position one signal-glass holder shall lock the others in inoperative position, substantially as set forth.

11. Combined in a lantern, a plurality of independently-movable signal-glass holders, a pivot common to the several holders, a slide operatively connected to each of said holders, and a lock for preventing more than one signal-glass from being exposed at one time, substantially as set forth.

12. Combined in a lantern, a signal-glass holder consisting of a frame for the signal-glass and an arm pivoted to the lantern, a slide having a pin operatively connected to the arm of the holder, and a spring for retaining said holder in inoperative position, substantially as set forth.

13. Combined in a lantern, a plurality of signal-glass holders, each consisting of a frame for the signal-glass and an arm pivoted to the lantern, an independently-operative slide for each signal-glass holder connected to its arm by means of a pin on said slide, a spring adapted to coact with each pin, and a finger-piece on each slide, substantially as set forth.

14. In a lantern, a plurality of signal-glass holders each having an arm mounted on a common pivot, combined with a bar between the arms having oppositely-placed shoulders, each adapted to lock in fixed position the arm on its proximate side when forced into engagement therewith by the movement of another arm, substantially as set forth.

15. Combined in a lantern, a lens-holder and lens, a lamp within the lantern, signal-glasses arranged in holders having arms mounted upon a common pivot and adapted to be independently moved between the lamp and the lens, and means whereby when one signal-glass is moved into operative position, another signal-glass is caused to be locked in inoperative position, substantially as set forth.

In testimony whereof I hereunto set my hand and seal.

WILLIAM S. HAMM. [L. S.]

In presence of—

G. L. WALTERS,
LOUIS O. EGGERT.