

No. 755,785.

PATENTED MAR. 29, 1904.

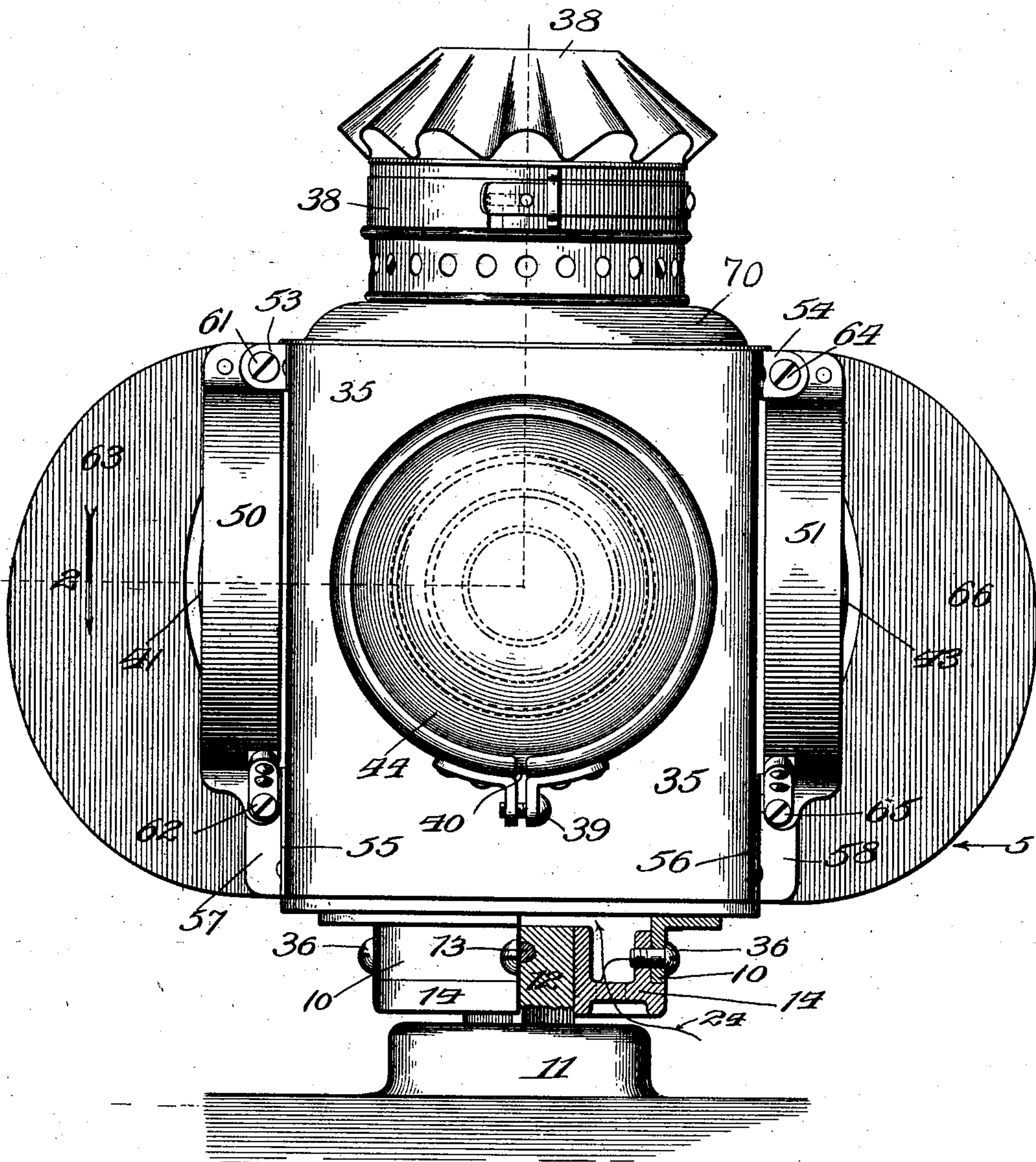
G. L. MANSFIELD.  
COMBINED SWITCH LAMP AND TARGET.

APPLICATION FILED OCT. 13, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

*Fig. 1.*



*Witnesses.*

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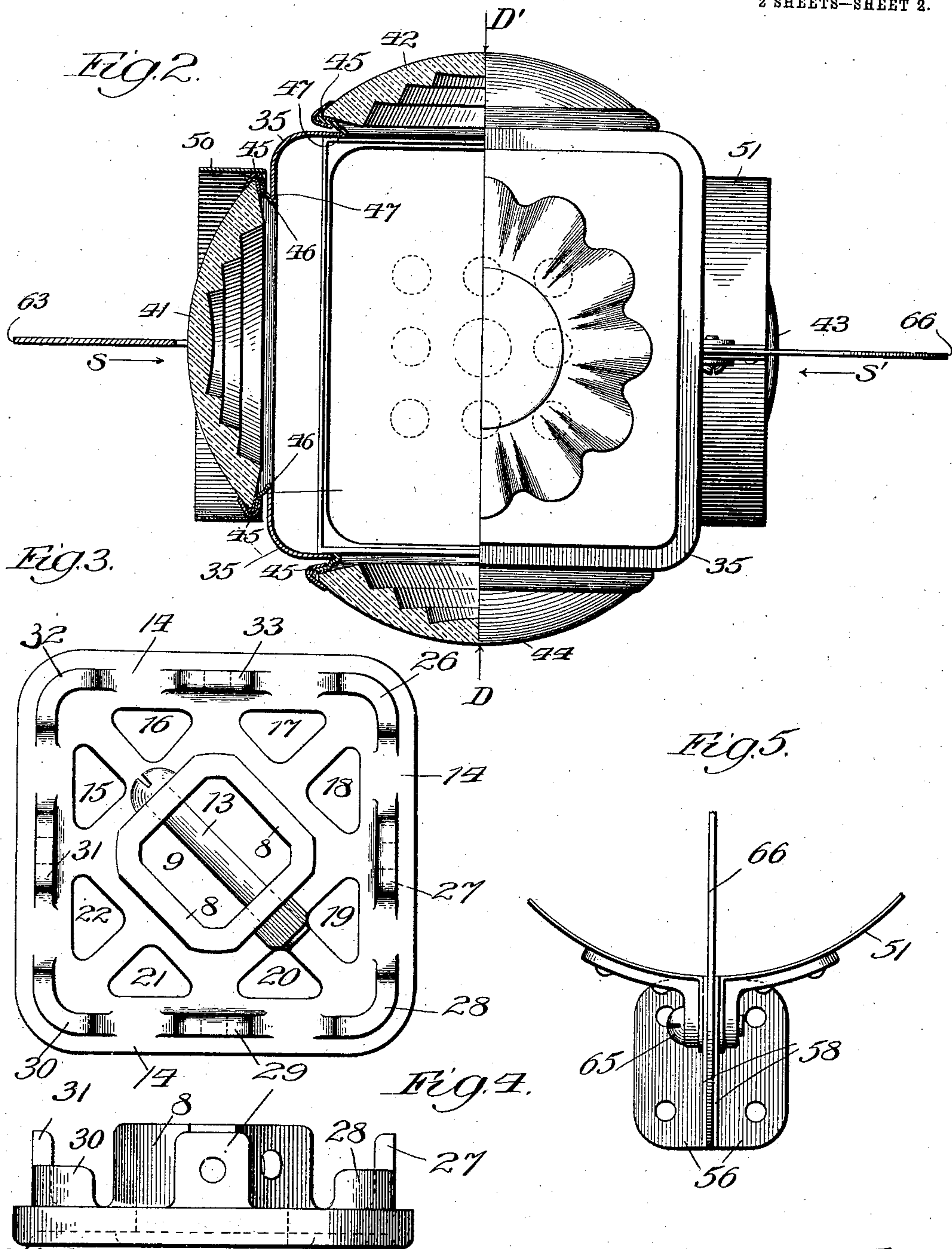
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

GEORGE L. MANSFIELD, OF CHICAGO, ILLINOIS.

## COMBINED SWITCH LAMP AND TARGET.

SPECIFICATION forming part of Letters Patent No. 755,785, dated March 29, 1904.

Application filed October 13, 1903. Serial No. 176,912. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE L. MANSFIELD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Combined Switch Lamp and Target, of which the following is a specification in its best form now known to me, reference being had to the accompanying drawings, in which similar numerals indicate the same parts throughout the several views.

My invention relates to railway appliances for indicating the safe or unsafe condition of a track at switches connecting two different tracks, usually the main track and a siding.

The object of my invention is to provide mechanism for this purpose which shall be of neat and compact form and capable of use during twenty-four hours of the day, thereby doing away with the necessity of both a target for use in the day-time and an independent signal-lantern for use at night, heretofore frequently used.

Another object of my invention is to provide such mechanism as will show "danger" substantially all of the time except when the track is actually fully and completely at "safety," thereby avoiding the disadvantages of other mechanisms of this general purpose, which, if not actually showing "safety" when there is danger, shows both signals simultaneously when the switch is partly turned, but before the real safety position has been reached.

My invention consists in a novel combination of a lantern and target and in its preferred form the addition of other mechanism which renders the device capable of accomplishing the above objects.

It also consists in such a mechanism which is of neat and compact form, occupying but little space, which can be easily and cheaply constructed, and will not be liable to get out of order.

It also consists in a novel means of attaching the lantern to the switch-stand mast and in many details of construction, which will hereinafter be more fully described and claimed.

Referring to the drawings, Figure 1 is a front elevation of mechanism illustrating the preferred form of my invention looking at

the same in the position which the device assumes when it is intended to indicate danger to a train approaching upon the track. Fig. 2 is a plan view of the device shown in Fig. 1, the right-hand half being a full plan view and the left-hand half being a sectional plan view taken on line 2 of Fig. 1. Fig. 3 is a plan view of the base of the lantern, showing the method of securing ventilation to the lamp and the attachment of the lantern to the switch-stand mast. Fig. 4 is a side elevation of this base. Fig. 5 is a detail side elevation of the target-wing and lantern, taken in the direction of arrow 5 in Fig. 1, showing the method of attaching the target to the lantern.

My device is designed for use most frequently upon ground switch-stands placed in railroad-yards, and in the drawings numeral 11 indicates the top of such a switch-stand, having vertically extending from it the mast 12. Detachably secured to this mast 12 by a bolt 13, passing through flange 8, is the base-casting 14 of the lantern. This base-casting 14 has through it perforations—such as indicated by numerals 15 to 22, both inclusive—adapted to permit the entrance of air, as indicated by arrow 24, Fig. 1, to the lamp (not shown) of the lantern. On the upper side of this casting 14 I provide a series of lugs 26 to 33, both inclusive, to which the main frame 35 of the lantern is adapted to be detachably secured by screws 36, passing through a flange 10, rigidly secured to the main frame 35 of the lantern. This base-casting 14 is made, preferably, substantially square, and the flange 10 on the main frame 35 of the lantern is made to conform to it; but it is manifestly immaterial what the shape of these parts is so long as they fit together. In order to make the parts interchangeable, so as to enable the lantern to be used on both right and left hand tracks, the holes for screws 36 to pass through should be made ninety degrees from each other or equal subdivisions of ninety degrees. The upper end of the main frame of the lantern is closed, with the top 70 terminating in the chimney 37, and the chimney-top 38 is made in any one of the numerous designs already upon the market.

The main frame 35 of the lantern has open-



ings on each of its four sides looking out in a direction ninety degrees from each other adapted to have lenses secured thereto. In the preferred form of construction I mount  
 5 these lenses 41, 42, 43, and 44 in permanent circular frames 45, having grooves 46 therein, adapted to engage the edges 47 of the lantern-frame 35 adjacent to the lens-openings. These  
 10 circular lens-frames 45 are preferably made of springy material, and are split at 40 as shown in Fig. 1, the ends being adjusted with reference to each other and to the frame 35 of the lantern by the screw 39. By properly  
 15 manipulating this screw 39 the frame and the lens may be removed from the lantern and the lens may be removed from the frame. In order to permit the insertion of the lamp, one of these lenses is mounted in the frame of a  
 20 movable door, as is usual in lanterns. I make two opposite lenses, as 41 and 43, of a color to indicate safety, (under the present system green glass,) and I make the other two lenses, as 42 and 44, of red glass or other conventional color to indicate danger.

25 To the frame 35 of the lantern, above the green lenses, I secure, by means of screws, rivets, or other suitable means, lugs 53 and 54, and below said green lenses I screw, by means of plates 55 and 56, other L-shaped  
 30 lugs 57 and 58. Pivotally secured to the lug 57 by screw 62 and at right angles to the face of the green lens 41 is a target-wing 63. Similarly pivotally secured to lug 54 by screw 64 and detachably secured to the lug 58 by a  
 35 screw 65 and in a plane perpendicular to the plane of the lens 43 and in the same plane as the target-wing 63 is another target-wing 66. The lower ends of these target-wings fit between the L-plates forming the lugs, and are  
 40 thereby braced and strengthened, as shown; also pivotally secured to the screws 61 and 64 and detachably secured by screws 62 and 65 are circular or conical shields or guards 50 and 51 over the green lenses 41 and 43; but I  
 45 do not place any guards or shields over the red lenses 42 and 44. Each of the shields is, as shown, made in two parts, half being placed on each side of a target-wing and around the lens, as shown. By removing the screws 62  
 50 and 65 the target-wings and lens-shields may be swung upward on their pivots, so that the lenses can be removed from the lantern-frame 35.

I paint all the lantern-frame 35 on the  
 55 danger sides, the outer surface of the circular or conical shields 50 and 51, and the faces of the target-wings 63 and 66 the conventional color to indicate "danger" (at the present time red) and make the lens 44 of the same color,  
 60 the result being that when looking at the front of the lantern along the arrow D everything the observer sees (above the base 14 and below top 36) is red. Similarly I paint the corresponding parts on the rear of the lantern,  
 65 or those which appear from the position D', red.

With this coloring and because of the obstruction of the green light by the circular or conical shields an engineer approaching from the direction of either D or D' will see only the red light of the red lens and the red color  
 70 of the painted surfaces heretofore described and will not see anything of the green light (or other color designating "safety") of the lens 41 or 43 until the device has been turned through a very substantial, if not a full, angle  
 75 of ninety degrees, in which position he will look at the lantern as from the position of arrow S or arrow S', Fig. 2, and he will get a full view of the green light of the green lens, which has been turned toward him—say, for  
 80 instance, lens 41—looking into the circular or conical shield 50 of the lens. He will at the same time see the safety side of the lantern, which is painted green. As the target-wings 63 and 66 are, as heretofore described, perpendicular to the faces of the green lenses 41 and 43 and are of thin material, they do not materially obstruct the parallel green rays thrown out by such lenses. The circular or conical shields or guards 50 and 51 may be  
 90 made longer than shown in the drawings, and they may be made of somewhat flaring or conical form without departing from the principle of my invention.

In the operation of my invention I have the  
 95 railroad company provide a low switch-stand 11, of the usual type, having mast 12 extending therefrom, adapted to be turned ninety degrees to give the switch a complete throw from the main track to the siding or from the  
 100 siding to the main track. The top of this mast 12 is preferably made of a size to fit the opening 9 in the standard-bases 14 of the lantern of my construction; but manifestly I can furnish the bases having openings of different sizes,  
 105 so as to fit switch-masts 12 of different sizes. I take the base 14 of the lantern and secure it to the switch-mast 12 by means of bolt 13 or other suitable means and then place the frame of the lantern upon this base and secure it  
 110 thereto by means of screws 36 or other suitable means, the lantern being in such a position that the red lens and the faces of the target-wings face in the direction to indicate danger on the main track when the switch to  
 115 the side track is open and that the turning of the switch-mast 12 through an angle of ninety degrees or giving the switch a complete throw turns the device so that the green lenses 41 and 43 will face directly down the main track  
 120 and there will be no target-wings at right angles to the track, thereby indicating to the engineer that the track is safe.

If it is desired, target-wings painted green may be placed at right angles to the red wings,  
 125 heretofore described, perpendicular to the face of the red lenses 42 and 44; but as such wings would be visible to the engineer of an approaching train during a considerable portion of the revolution of the lantern, and thereby  
 130



create confusion in his mind as to whether there was danger or not, which confusion it is one of the special objects of this invention to avoid, I prefer to omit such green target-wings.

I do not wish to be understood as limiting myself to the exact details of construction shown and described, which may be varied without departing from the principle of my invention.

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

1. In mechanism of the class described, the combination of a lantern having two lenses ninety degrees from each other, one lens being colored to indicate "safety" and the other lens being colored to indicate "danger," a shield approximately parallel to the axis of the "safety" colored lens adapted to shut off all view of said "safety-lens" from a point in front of said "danger-lens," the outside of said lens-shield and the lantern toward the point in front of the "danger-lens" being colored to indicate "danger."

2. In mechanism of the class described, the combination of a lantern having a lens and a target-wing rigidly secured to and extending from the outside of said lantern at the same height as the lens and in a vertical plane perpendicular to the plane of the face of said lens.

3. In mechanism of the class described, the combination of a lantern having a lens and a target-wing secured to and extending from the outside of said lantern in approximately the central vertical plane of the lens perpendicular to the face of said lens.

4. In mechanism of the class described, the combination of a lantern having a lens and a target-wing rigidly secured to and extending from the outside of said lantern at the same height as the lens and in a vertical plane perpendicular to the plane of the face of said lens, the lens being colored to indicate one condition of the track as "safety" and the target-wing being colored to indicate the other condition of the track as "danger."

5. In mechanism of the class described, the combination of a lantern having a lens and a target-wing secured to said lantern in approximately the central vertical plane perpendicular to the face of said lens, the lens being colored to indicate one condition of the track as "safety" and the target-wing being colored to indicate the other condition of the track as "danger."

6. In mechanism of the class described, the combination of a lantern having four lenses ninety degrees from each other, two oppositely-disposed lenses being colored to indicate "safety" and the other two lenses being colored to indicate "danger" and target-wings to indicate "danger" extending from opposite sides of the lantern in a plane perpendicular to the faces of the lenses indicating "safety."

7. In mechanism of the class described, the combination of a lantern having four lenses ninety degrees from each other, two oppositely-disposed lenses being colored to indicate "safety" and the remaining two being colored to indicate "danger," target-wings to indicate "danger" extending from the opposite sides of the lantern in a plane perpendicular to the faces of the lenses indicating "safety" and circular or conical shields inclosing the lenses indicating "safety," the outer faces of said circular or conical shields being colored to indicate "danger."

8. In mechanism of the general class described, in combination with a switch-stand having a switch-mast extending from the top thereof, a lantern-base adapted to be detachably secured to said switch-mast and to have the lantern-body detachably secured to it.

9. In mechanism of the general class described, in combination with a switch-stand having a switch-mast extending through the top thereof, of a lantern-base adapted to fit over said switch-mast, means located within the lantern adapted to secure said base to said switch-mast and mechanism for attaching the lantern-body to said lantern-base.

10. In mechanism of the general class described, in combination with a switch-stand having a switch-mast extending from the top thereof, of a lantern-base adapted to be secured to said switch-mast, there being perforations in said base through which air is adapted to pass, and means for detachably securing the lantern-body to said lantern-base.

11. As an article of manufacture, a lantern-base having a hole in its center adapted to fit over a switch-mast, other holes in it to permit the entrance of air to the lantern, and lugs extending upward from its outer edge adapted to have the body of the lantern secured thereto.

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