

(No Model.)

W. P. HALL.
RAILWAY SIGNAL.

No. 535,102.

Patented Mar. 5, 1895.

Fig. 1.

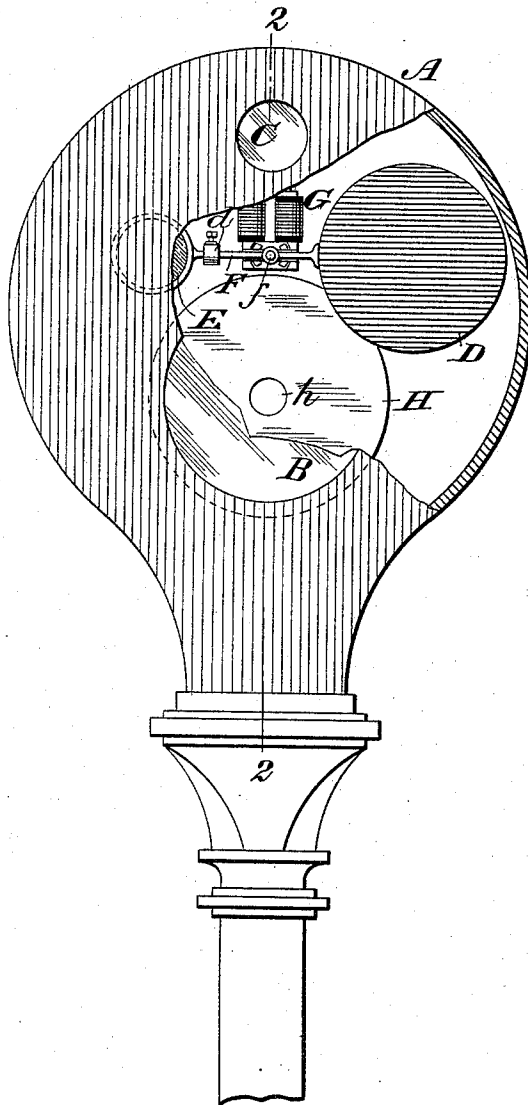
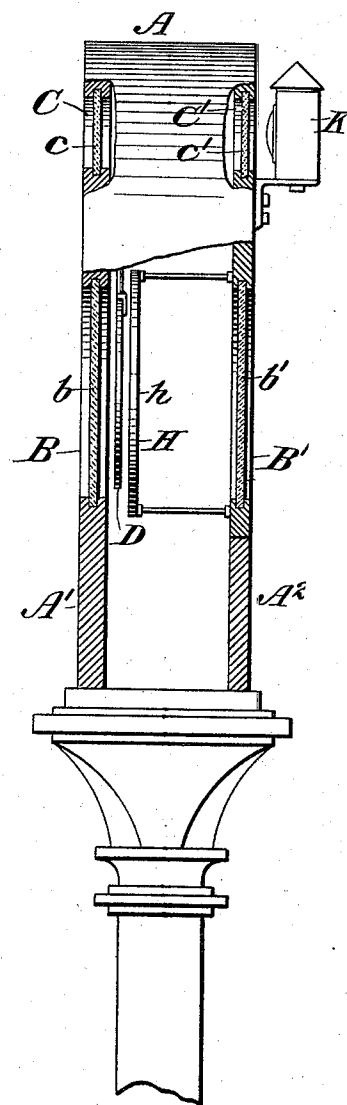


Fig. 2.



Witnesses:-

Nicholas M. Goodlett
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Inventor:-

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UNITED STATES PATENT OFFICE.

WILLIAM P. HALL, OF GREENWICH, CONNECTICUT.

RAILWAY-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 525,102, dated March 5, 1895.

Application filed July 3, 1894. Serial No. 516,418. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. HALL, a citizen of the United States, residing at Greenwich, in the county of Fairfield, State of Connecticut, have invented a certain new and useful Improvement in Railway-Signals, of which the following is a specification.

My invention relates to railway visual signals and it has for its object to make the indication of the signal more distinctly visible.

The invention consists of the construction hereinafter set forth.

In the drawings, in which like letters designate corresponding parts in both views, Figure 1 is a front elevation of a signal embodying my invention, parts being broken away, and Fig. 2 is a sectional side elevation on the line 2—2, of Fig. 1.

A is a casing of which A' is the front plate and A² is the back plate. The casing is provided in front and rear with large registering apertures B and B', covered with plates of glass *b* and *b'* respectively, and it is also provided in front and rear with smaller registering apertures C and C', covered with plates of glass *c* and *c'* respectively. Within the casing are signal disks D and E mounted upon an arm F, fixed to the axis *f* and controlled by the electric motor G, the armature of which is fixed to the arm F. The disk D is the day signal disk and moves in and out of register with the apertures B and B' and the disk E is the night signal disk and moves in and out of register with the apertures C and C'. If it is intended that these disks shall indicate danger they will be suitably colored, as for example red, the day disk being preferably opaque to reflect light and the night disk translucent. Within the casing is mounted a stationary signal disk H, in line with the apertures B and B', and standing close up to the front aperture B, but behind the plane of movement of the disk D. The disk H is made to strongly contrast in color with the disk D, and by arranging it as herein described and shown it receives and reflects the full strength of the beam of light passing into the casing through the aperture B when the latter is not covered by the disk D. It has been found that on cloudy days and at twilight, when the sunlight is not strong, inclosed signals of the movable disk type do

not always receive enough light within the casing to make the indication of the signal sufficiently distinct at long distance when the movable day signal disk is out of register with its aperture. This defect, however, is entirely overcome by the arrangement herein shown and described. The disk D is preferably made smaller than the stationary disk H, in order that part of the latter may be visible from the front of the signal when the disk D is down. This arrangement assists in making the disk D more striking to the eye, as will be of course understood. Behind the night aperture C is located a lantern K, preferably mounted upon the back of the signal case A, and behind both the apertures C and C', so that it may illuminate the aperture C, the character of the illumination changing according to the position of the night signal disk with respect to the aperture C.

In the present embodiment of my invention I have represented the movable day disk as colored to indicate danger, and the stationary day disk as white to indicate safety. The movable night disk in this case will be also colored, the movable disks being arranged to move concurrently in and out of register with their apertures. The movable disks are preferably so counter-balanced that when left to the action of gravity alone they will both be in register with their apertures, thus indicating danger.

When it is desired that the signal shall indicate safety, the motor G will be energized to revolve its armature and withdraw the movable disks from their apertures. During the day the stationary white disk H will then be visible at the front of the signal and indicate safety. As viewed from the rear of the signal, safety will be indicated by the absence of the colored disk D from the aperture *h* in the stationary disk H. During the night the signal will indicate safety by the absence of the disk E from in front of the lantern, the light from which will at this time be ordinarily white.

If it is desired that the signal shall indicate danger, the motor G will be de-energized and the movable disks will move, by gravity, in register with their apertures. During the day the colored disk D will be visible from the

front of the signal surrounded by a rim of the contrasting disk H to indicate danger, and from the rear of the signal the disk D will be visible through the aperture h of the disk H. During the night the disk E will color the beam of light from the lantern and thus indicate danger.

Various changes might be made by one skilled in the art without departing from the broad spirit of my invention. For example, the night signal disk might be made opaque, so as to hide the light from the lantern and thus indicate danger. In this case, a second constantly illuminated aperture might be employed to co-operate with the aperture C. Moreover the movable disks might in some cases be arranged to concurrently register with their apertures.

What I claim, and desire to secure by Letters Patent, is—

1. In a railway signal the combination of a plate or shield provided with two apertures, one for a day signal and one for a night signal, a day signal disk and a night signal disk mounted upon a common axis and adapted to move in and out of register with their apertures, and a stationary signal disk strongly contrasting in color with the movable day signal disk located in line with the day signal aperture and arranged to be totally or partially obscured by the movable day signal disk when it registers with its aperture, substantially as set forth.

2. In a railway signal, the combination of a plate or shield provided with two apertures, one for a day signal and one for a night signal, a day signal disk and a night signal disk mounted upon a common axis and adapted to move in and out of register with their apertures, and a stationary signal disk strongly contrasting in color with the movable day signal and located in line with the day signal aperture, the movable day signal disk having less area than the stationary signal disk, whereby the former when in register with its aperture partly obscures the stationary disk, substantially as set forth.

3. In a railway signal, the combination of a casing provided with two apertures in its front, one for a day signal and one for a night signal, and another aperture in its back in line with the day signal aperture, a day signal disk and a night signal disk, mounted upon a common axis and adapted to move in and out of register with their apertures, a stationary signal disk strongly contrasting in color with the movable day signal disk and located in line with the day signal aperture

and arranged to be totally or partially obscured by the said movable disk, the stationary disk being provided with an aperture through which the movable day signal disk when in register with its aperture is visible from the rear of the signal, substantially as set forth.

4. In a railway signal, the combination of a casing, a colored danger day signal disk, and a colored translucent night signal disk mounted upon a common axis in the casing, the casing being provided with two apertures for the day signal disk, one in the front and one in the back, and two apertures for the night signal disk, one in the front and one in the back, a stationary safety signal disk mounted in the casing in line with the day signal apertures and strongly contrasting in color with the danger day signal, and a lantern fixed to the casing in line with the night signal apertures, the movable signal disks being arranged to move concurrently in register with their apertures and before the stationary disk and lantern respectively and to move concurrently out of register with their apertures, substantially as set forth.

5. In a railway signal, the combination of a casing, a colored danger day signal disk, and a colored translucent night signal disk mounted upon a common axis in the casing, the casing being provided with two apertures for the day signal disk, one in the front and one in the back, and two apertures for the night signal disk, one in the front and one in the back, a stationary safety signal disk mounted in the casing in line with the day signal apertures and strongly contrasting in color with the danger day signal, and a lantern fixed to the casing in line with the night signal apertures, the movable signal disks being arranged to move concurrently in register with their apertures and before the stationary disk and lantern respectively and to move concurrently out of register with their apertures, the stationary disk being provided with an aperture in register with the day signal apertures through which the movable day signal disk when in register with its apertures is visible from the rear of the signal, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM P. HALL.

Witnesses:

DANIEL A. WARREN,
MELVILLE P. HALL.