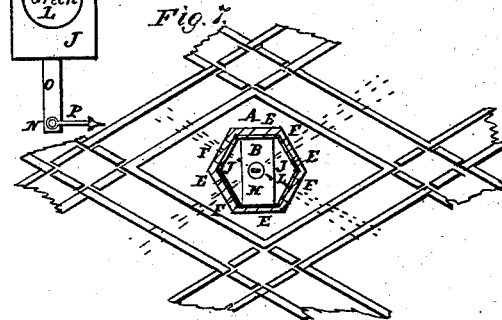
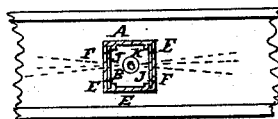
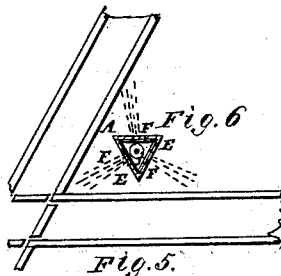
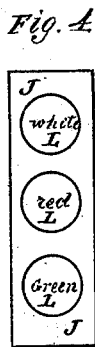
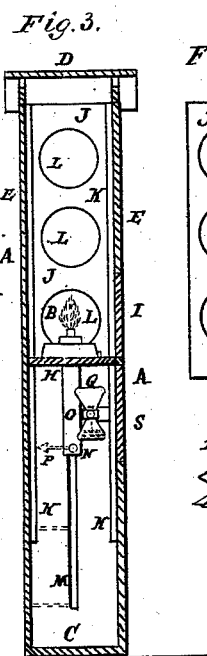
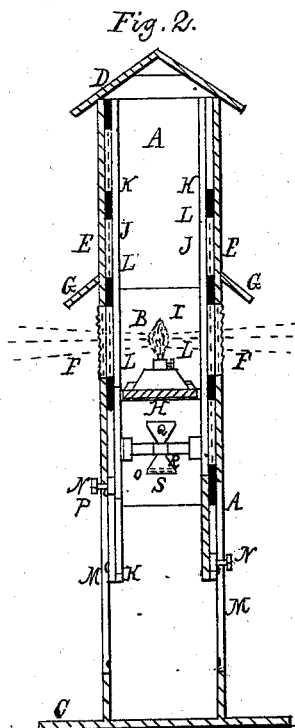
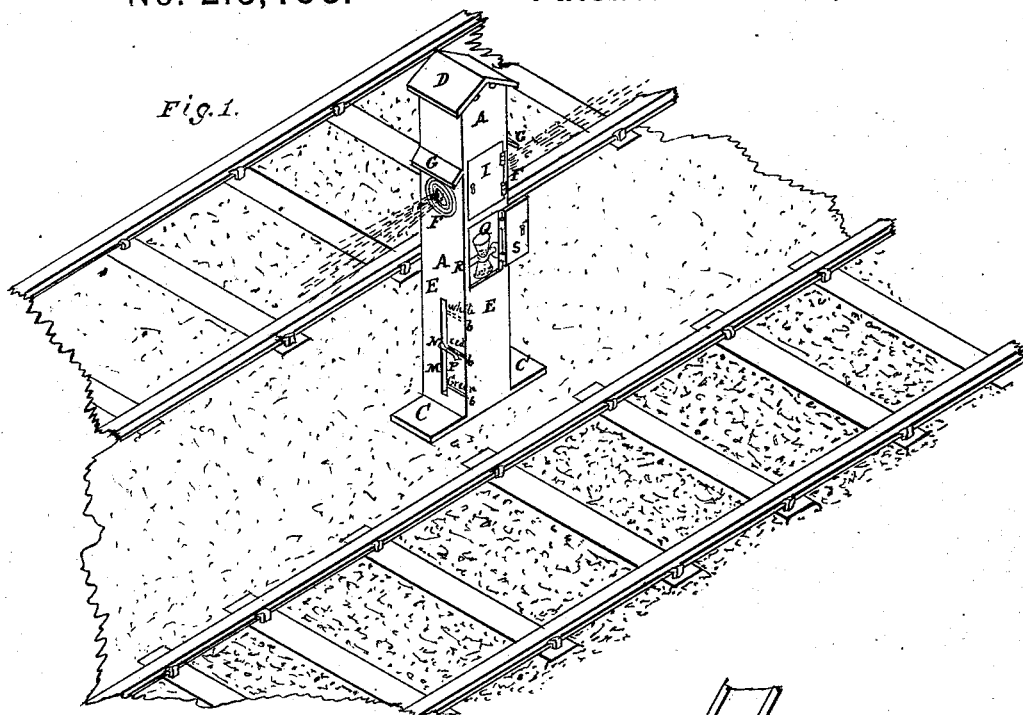


C. L. HEYWOOD.  
Railroad Signal-Lights.

No. 216,406.

Patented June 10, 1879.



Witnesses:  
James Dana  
Marcus Starbuck

Charles L. Heywood *Inventor.*

# UNITED STATES PATENT OFFICE.

CHARLES L. HEYWOOD, OF BELMONT, MASSACHUSETTS.

## IMPROVEMENT IN RAILROAD SIGNAL-LIGHTS.

Specification forming part of Letters Patent No. **216,406**, dated June 10, 1879; application filed December 24, 1878.

*To all whom it may concern:*

Be it known that I, CHARLES L. HEYWOOD, of Belmont, county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Railroad Signal-Lights, of which the following is a specification, accompanied by drawings, in which—

Figure 1 represents a perspective view of a signal-light for railroads with my improvements. Fig. 2 represents a vertical central longitudinal section of the same. Fig. 3 is a vertical cross-section of the same. Fig. 4 is a detached face view of the slide carrying the different-colored signal-glasses. Fig. 5 is a horizontal section of the signal-light above related to. Figs. 6 and 7 are similar horizontal sections of modifications of the above.

My invention relates to railroad signal-lights; and it consists in such a construction as will admit of showing two or more signal-lights in as many directions at the same time, both or all of such lights being of the same color, or of different colors, as desired.

In the annexed drawings, the letter A of reference indicates the case, house, or frame in which the signal-lamp B is contained and held stationary at a height about in level with the eye of the engineers of the locomotives. Said case A has a suitable base, C, which is firmly attached to the ground or road-bed, so that the signal-light is always permanently fixed in proper view of the engineer, and is not to be blown about and in that manner obscured from proper sight. The top of the case A has a small roof, D, to protect the lamp from the weather, and under the said roof are small apertures to carry off the smoke of the lamp. According to the application of the signal-light for two or more roads, a single road, switches, crossings, junctions, or bridges, and other signal-stations, I make the case A with one, two, three, four, or any suitable number of lights and a corresponding number of sides, E, to present said lights for proper view to the road for which each is intended, as shown in Figs. 5, 6, and 7, in which F represents the glass or window through which the light is seen, and which is secured in the side of the case A opposite the lamp B. I make said glass F, in order to improve its reflection, corrugated, and protect it from snow and rain by

means of a small roof or shield, G, secured on the side E above it, as shown. By the heat of the lamp the snow is caused to melt away almost instantly from the window F. The lamp B is supported upon a cross-piece, H, secured in the case A, and on one side of the case A is a door, I, provided opposite the lamp to open for attention to the lamp and putting it in proper working order. For each glass or window F requiring a change in the color of the light I furnish a slide, J, arranged vertically on the inside of the glass F close to the side E of the case and between the lamp B and the window F.

The inside of the case has suitable guide-strips K to hold the slide J in proper position against the side of the case and the window E, and yet allow it to slide up or down with facility. The slide J contains several differently-covered glasses L L L, as shown in Fig. 4, which may be such as to indicate "precaution," "danger," or "safety," as desired, so that by moving the slide up or down the proper colored glass may be fixed between the window and light, and thus a suitable color shown to indicate safety, precaution, or danger, as the case may be. In order to operate said slide with certainty to the proper color and with readiness from the outside of the case A, a slot, M, is made through the lower portion of the side of the case under the window F. In said slot is guided a stud, N, and the inner end of said stud is secured in a vertical rod, O, attached to the bottom end of the slide J, and on the outer end of the said stud N is secured the hand P, of which the operator takes hold to set it. On the outside of the side E, corresponding with the hand P, are marks b, corresponding with the colors of the glasses L, and a notch is made for each color or mark, in which the stud engages in the side E to stop the slide in its desired position. Instead of said notch and stud to stop the slide at any desired color or position, any suitable means may be employed to stop or lock said slide.

Q represents an hour-glass. It is employed in the case A below the lamp B, and is secured in a central arbor, R, the ends of which are held in bearings secured to the opposite sides of the case A, so that the hour-glass can be readily inverted to operate the sand therein,

and the side of the case has a door, S, opposite said hour-glass, for the attendant to observe the operation of said glass. By this means the attendant can readily and exactly tell his time for operating his signals, and need not to apply and rely upon a watch, which may fail to operate properly.

When the signal-light is used for two opposite roads, or in similar application of the same, as shown in Figs. 1, 2, and 3, in which several signals require corresponding indication at all times, the opposite or corresponding slides J are connected together, so that the attendant by moving the one moves both together, and is less liable to mistake.

I am aware that signal-lights have been used so constructed as to show two or more lights of the same colors in opposite directions simultaneously with one lamp, which lamp had to be moved up or down to change the color of the light, and that a signal-lantern has been used showing a light in one direction only, the color of which could be changed by moving a slide containing differently-colored glasses. Neither of these, however, shows a signal-light with a single fixed lamp capable of exhibiting two or more signal-lights in different directions simultaneously, which signal-lights may be of the same or of different colors at will.

A portion of each colored glass is painted with its appropriate color, so that it may be

readily seen in day-time, when the lamp is extinguished, and thus the apparatus may serve for signaling both day and night.

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

1. The combination of a case having two or more windows arranged on the same level and a fixed lamp placed to throw light through both or all of said windows at the same time with two or more movable slides carrying glasses of various colors, whereby either the same or different colored lights may be shown in different directions simultaneously, substantially as described.

2. The combination, with a signal-light, of a slide carrying differently-colored glasses, provided with a pointer to indicate the color of the glass before the light, substantially as described.

3. The combination, with a signal-light, of a case, A, provided with a slot, M, indicating-marks *b b b*, and a pointer, P, connected with the slide J, substantially as and for the purpose specified.

In witness whereof I hereunto set my hand this 17th day of December, 1878.

CHARLES L. HEYWOOD.

In presence of—

JAMES DANA,

MARCUS STARBUCK.