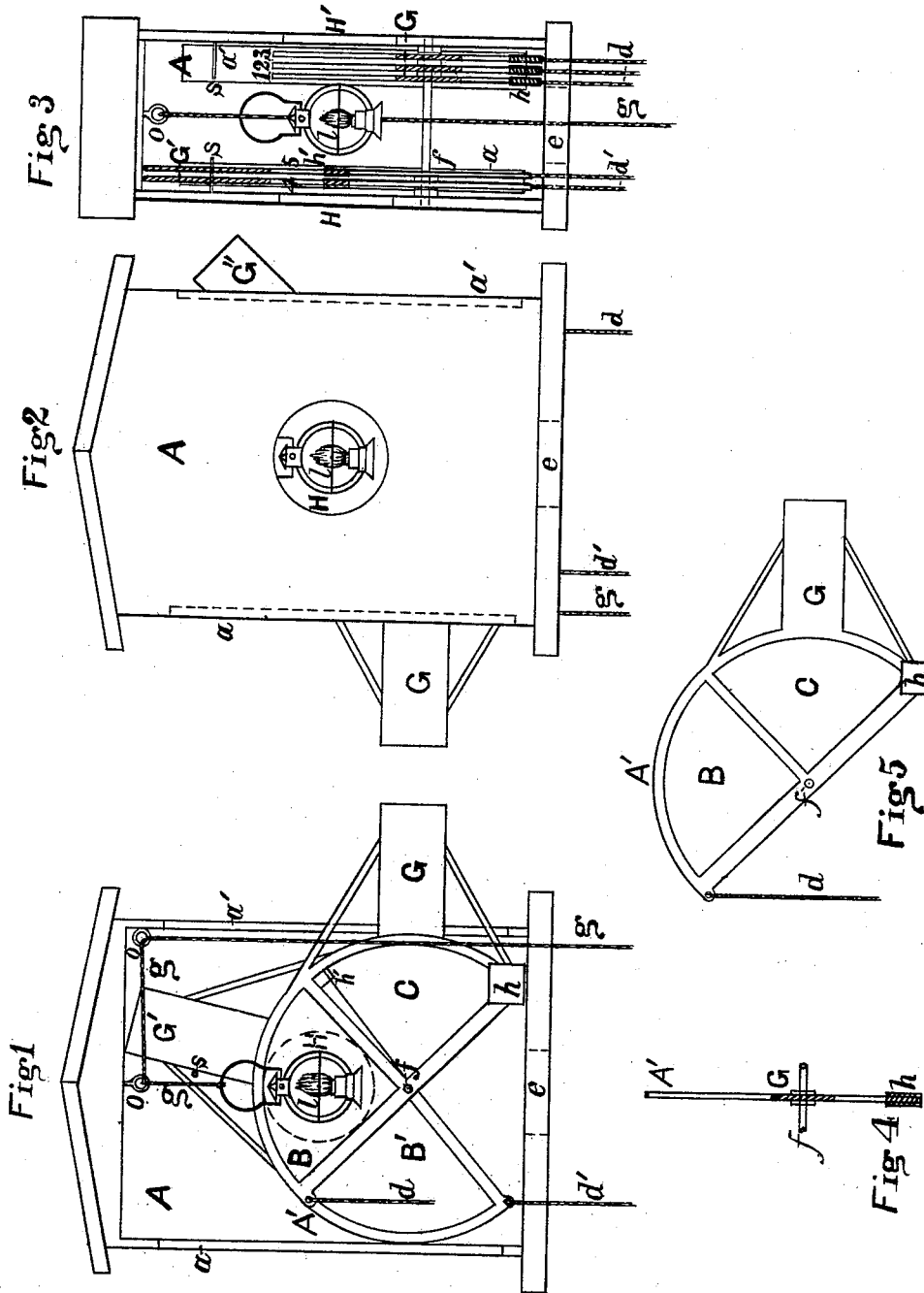


F. B. ASPINWALL.  
Railway-Signal.

No. 221,267.

Patented Nov. 4, 1879.



Witnesses.

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# UNITED STATES PATENT OFFICE.

FRANK B. ASPINWALL, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN RAILWAY-SIGNALS.

Specification forming part of Letters Patent No. **221,267**, dated November 4, 1879; application filed September 11, 1879.

*To all whom it may concern:*

Be it known that I, FRANK B. ASPINWALL, of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Railway-Signals; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, which form a part hereof, and in which—

Figure 1 represents a sectional side elevation, showing the interior mechanism and arrangement. Fig. 2 represents an external side elevation. Fig. 3 represents a sectional end elevation, showing the internal mechanism. Fig. 4 represents an end view, and Fig. 5 represents a side view, of one of a number of similar parts of the internal mechanism.

Like letters of reference indicate like parts.

My invention consists in the use of colored signal-lights and colored signal-boards, so combined as to act as both day and night signals, as hereinafter fully described and claimed.

In the drawings, A represents a narrow oblong box or housing, within which are secured, on a pivot or axle, *f*, semicircular frames A', made of wood or metal, as shown in Figs. 4 and 5, each of which frames is divided into two equal quadrants, B and C, the upper quadrant, B, being covered with any translucent material, preferably glass, of the desired color, while the lower quadrant is left open.

To the peripheral center of the lower quadrant, C, of the frame A' is securely attached a board or plate, G, which is of the same color as that of the covering of the quadrant B. To the lower corner of said frame A' is attached a weight, *h*, and to the upper corner of said frame is attached a cord, *d*.

When said semicircular frame is constructed as above described, it is placed within the box or housing A, near its side walls, on the pivot or axle *f*, so that when left free it will fall through the slot *a* in the end wall of said box A into the position shown in Figs. 1 and 5.

Through the side of the box A an opening, H, is made opposite the upper quadrant, B, when said quadrant is in the position last described, and immediately opposite and on the

inside of the quadrant B is suspended a light or lantern, *l*.

As many varying signals may be made as may be desired by placing a series of such frames, A', behind or inside of each other in the box or housing A on axis *f*, as shown at 1, 2, 3, 4, and 5 in Fig. 3; and when it is desired to signal in opposite directions similar apparatus is placed on the opposite side of the box or housing A and light *l*, as further shown at 4 and 5 in Fig. 3.

Any common lamp or lantern, *l*, may be used for the purpose described. In this case the light *l* is placed at the desired point through the opening *e* by means of the cord *g*.

When no special signal is required the signal-board or boards G are drawn within the housing A against the stop *s* by pulling the cord *d*, which cord then assumes the position *d'*, and is there fastened. As a result of the last-described change, the board G assumes the position of G', and the quadrant C that of B, and B that of B'. When the several parts are in the position last described a white light is seen through the openings H and H', which is the signal for "all right" or "no danger," and such signal will be made more positive from the fact that no signal-board G is displayed.

When a special danger-signal is required—as, for instance, the red light—the cord *d'*, holding the quadrant B', covered with that particular color, is released, and by the help of the weight *h* the red board G' falls into the position G, and the red covering on the quadrant at B' comes to the position B, when both the board G and quadrant B will display the same color—viz., red.

If it should be desired to give a caution or danger signal in an opposite direction from the same apparatus, the board G'', as seen falling from the right in Fig. 2, would be released to fall down and point in the opposite direction from that of G, and then the opening H', opposite to that of H, would display its proper color corresponding to the color of that of the board G'' just released.

The signal-boards being so arranged that they will fall and take positions directly opposite each other, no other color or light but the one intended could be seen by trains coming from opposite directions on the same or on

parallel tracks, even if the boards G should be made to fall out only on the same side of the housing A.

It will be observed that at both H and G the same colors are displayed in the day-time as well as at night, and consequently should an engineer or person in charge of a train be more or less affected with color-blindness, and so fail to distinguish the color of the light through the opening H or H', he could not fail to discover that a danger-signal of some kind was meant when he saw the board G extended from the box A, and act accordingly.

If from any cause the cord *d* should be broken or released accidentally, the weight *h* will cause the board G to fall in the position shown in Fig. 5.

I do not intend to be limited to the cord *d* as a means of operating the frame A', as it is evident it may be operated by other mechanical means, and also in connection with electrical apparatus.

I do not intend to claim, broadly, a combined railway day and night signal operated

simultaneously, as such signals, I am aware, have been heretofore made, but, on account of their complicated construction or uncertainty of operation, have met with but little or no favor with railway companies.

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

The combination, with the box or housing A, provided with the openings H and H' *a* and *a'*, of one or more pivoted and weighted frames, A', each consisting of the quadrants B C and signal board or plate G, the upper quadrant of each frame A' being covered with a colored translucent material, and the lower quadrant being uncovered or open, and each signal-board being colored to correspond with its covered quadrant, all constructed and arranged substantially as and for the purpose specified.

FRANK B. ASPINWALL.

Witnesses:

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