

(No Model.)

W. P. SQUIER.
SIGNAL.

No. 519,009.

Patented May 1, 1894.

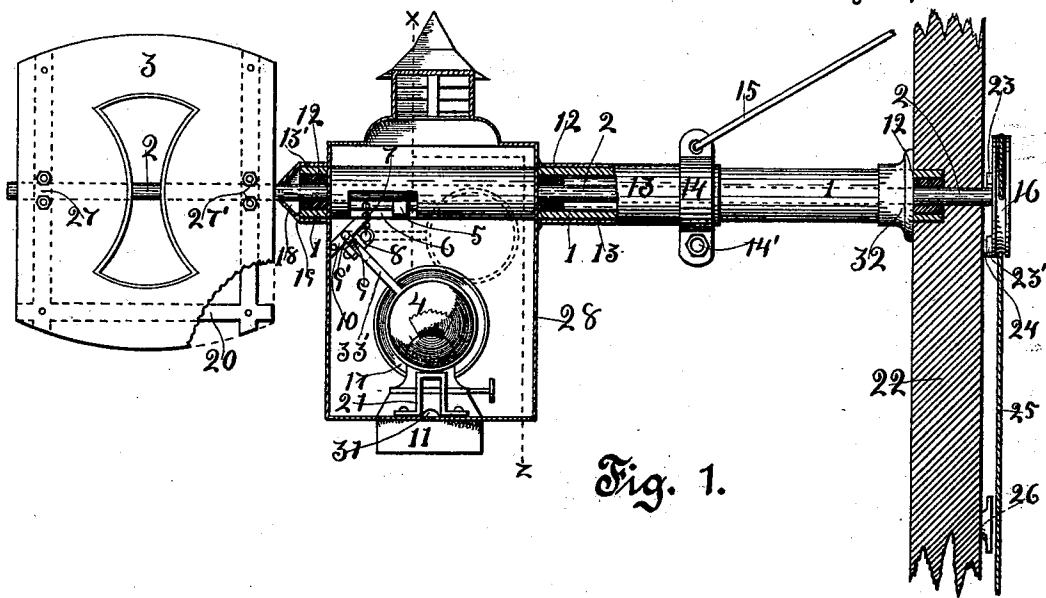


Fig. 1.

Fig. 2.

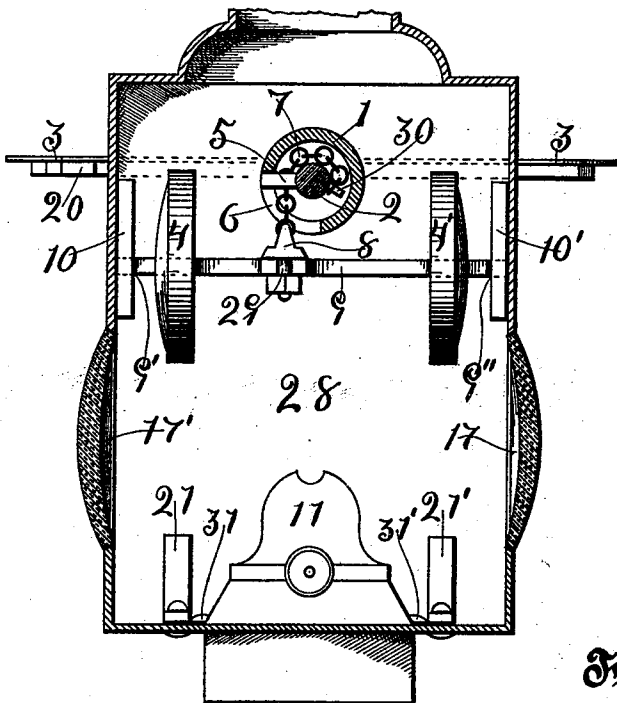


Fig. 3.

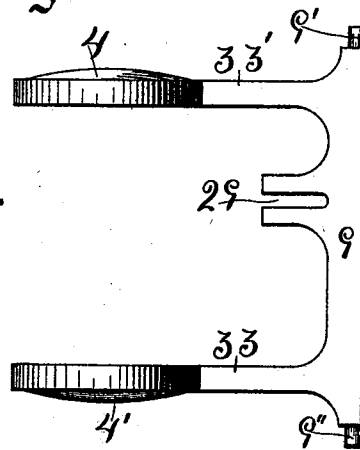
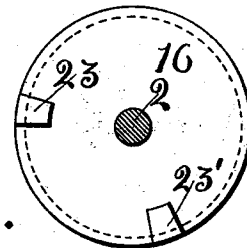


Fig. 4.



Witnesses

A. J. Taylor
Frank Michel

Wilbur P. Squier Inventor
By his Attorney Lou Vaughan

UNITED STATES PATENT OFFICE.

WILBUR P. SQUIER, OF BLAIR, NEBRASKA.

SIGNAL.

SPECIFICATION forming part of Letters Patent No. 519,009, dated May 1, 1894.

Application filed January 18, 1894. Serial No. 497,325. (No model.)

To all whom it may concern:

Be it known that I, WILBUR P. SQUIER, a citizen of the United States, residing at Blair, in the county of Washington and State of Nebraska, have invented a new and useful Train-Order Signal, of which the following is a specification.

My invention relates to improvements in railway train order signals in which a light with different colored glass is used for night signals and a colored signal board for day work; and the objects of my improvement are, first,—to provide such an apparatus in which all the signaling parts, shall both individually, and collectively, have a normal tendency to give the stopping or danger sign; second,—to provide a signal universally adaptable to differently located depots or signal stations; third,—to avoid the disastrous effects of tempestuous, freezing or windy weather; and, fourth,—to provide an easily manipulated, simple, strong, durable, and positive acting signal, together with other important features more fully hereinafter set forth. I attain these objects with others of minor importance through the medium of mechanism illustrated in the accompanying drawings, in which—

Figure 1, is a side elevation, partly in section portions being cut away to show the assembly of the several parts, of the whole machine set up for use. Fig. 2, is a vertical cross section on the broken line X, Z, in Fig. 1, looking toward the signal board 3. Fig. 3, is a top view of the rock-shaft 9 having the arms 33 and 33' carrying the colored lenses 4 and 4'; and Fig. 4, is an elevation of the operating wheel 16.

Similar numerals refer to similar parts throughout the several views.

The horizontal tube 1, has one end seated against the wall 22, a post or other like perpendicular support, the opposite ends snugly inserted in the thimbles 13 and 13' projecting centrally from opposite sides and near the top of the lamp or lantern-case 28; an open clamping ring 14 having the tightening bolt 14' is placed on the thimble 13 to secure it rigidly to the tube 1 and prevent turning or slipping; the top of the ring has an eye by which to attach guy rods 15, to prevent lateral and vertical motion of the extended end of

the tube. The rock-shaft 2 is journaled centrally through the tube, preferably in hardwood bearings 12, 12, and 12, the outer projecting end has the signal board 3, rigidly attached by U shaped clamping bolts 27 and 27', the inner end passes loosely through an aperture in the wall 22, and is provided with the operating wheel 16 rigidly attached thereto.

Within the lantern case 28, the opening 6 is cut in the tube 1,—shown in cross-section in Fig. 2,—and the rock-shaft has the stud or arm 5 so set as to oscillate in said opening, and limit the rocking of the shaft to a one-fourth revolution, the signal board 3 being so adjusted on the shaft as to stop either in a horizontal plane as in Fig. 2, or a vertical plane as shown in Fig. 1; the operating wheel 16 has on its side adjacent to the wall 22, the projections 23 and 23' and between these on the wall is set the stop block 24 to limit the motion of the wheel to a one-fourth revolution agreeing with the motion of the shaft 2, the object of which is to reinforce the stud 5 and prevent injury by the application of unnecessary force on the wheel, and make a positive stop, and as an alternative in case the stud 5 is broken or desired to be omitted. The rock-shaft 9, has its ends 9' and 9'' pivoted in the bars 10 and 10', and spans the case 28 at one side and at right angles to the shaft 2; near its ends the arms 33 and 33' project at right angles, and at the ends of the arms are the colored glass disks or lenses, set to normally rest on the buffers 21 and 21' one at each side of the lamp 11 between it and the sight openings or lenses of clear glass 17 and 17' in the case 28, or to swing up to the position indicated by the broken line in Fig. 1. A bifurcated arm projects from the rock-shaft 9, forming the slot 29, between and parallel with the arms and directly beneath the opening 6 in the tube 1; the eye-bolt 8 is seated in this slot and adapted to slide therein and be fastened at any point; the chain 7 has one end attached in the eye of the eye-bolt, the other end passed up through the opening 6 into the tube, over the shaft 2 to which it is attached by the pin 30; by changing the position of the eye-bolt in the slot, the range of action of the colored disks 4 and 4' is varied and adjusted as desired. The wheel 16 is grooved on its periphery to receive the cord

25, which is thereto attached; and a cleat 26 is attached to the wall on which to fasten the free end of the cord, when the signal board is horizontal and colored disks raised.

5 To avoid the turning of the signal board by the wind or storms it is constructed with its axis of revolution corresponding, or nearly so, with its axis of symmetry. But, to insure it taking its position in a perpendicular plane
10 when released by the operator or by accident to or failure of other parts of the apparatus, its center of gravity is fixed at one side or away from said axes. This is done in the construction shown, by the additional rein-
15 forcing bar 20 attached at one edge. The same result may be reached by a board made of a single integral piece thickened at one edge. The projected end of the thimble 13' is made conical, the shaft 2 passing loosely
20 through an aperture at the apex, and this forming the chamber 18, around the shaft between the apex and the adjacent hardwood bearing 12. At the base of the cone, on the under side the opening 19 is made, commu-
25 nicating with the chamber, to drain out any water that might be driven in around the shaft during storms.

The lantern or lamp 11, has a circular base and is retained by lugs 31 and 31' that pass
30 through notches in the bottom of the case; further the lamp is intended to be supplied with a globe and bail so that it may be removed, cleaned, lighted and carried, being independent of the other parts.

35 The tube 1 serves a double purpose of housing the rock-shaft 2 between the operating wheel and lantern case, and with the collar 32 and suitable guys, is a horizontal support for the whole apparatus projecting at right
40 angles to the road.

In operation when the cord 25 is released all the parts normally assume the positions shown in Fig. 1, showing the broad surface of the signal-board, and the colored glass disks,
45 giving the danger or stop sign; the weight of the arms and disks, with the eccentrically placed weight of the signal-board being sufficient to overcome all frictional resistance; draft on the cord, turns the shaft 2 a one-
50 fourth revolution, bringing the signal board to a horizontal plane, the chain 7 winds up on the shaft and raises the colored disks showing a white light and indicating a clear track and no stop; the cord is then fastened
55 to the cleat and retains the signals in this position.

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

60 1. A signal-board having a horizontal axis of revolution corresponding with its axis of symmetry, and parallel with its plane and its center of gravity eccentric to said axes, to normally sustain the board in a vertical plane
65 substantially as described.

2. In a train order signal the combination of a revoluble horizontally supported shaft

with a signal-board rigidly attached thereto, the axis of symmetry and plane of the board corresponding and parallel with the axis of
70 revolution, and the board integrally and eccentrically weighted, to normally sustain it in a vertical plane, substantially as described.

3. In a train order signal the combination of a horizontal rock-shaft carrying at one end a
75 signal-board, at its opposite end an operating wheel and cord, and journaled in and through a supporting tube disposed through and supporting a lantern-case, with a rock-shaft in said case having arms carrying colored glass
80 disks adjusted to register with sight openings in the lantern-case, an opening in the tube within the case, and means connecting the rock-shaft in the case with the rock-shaft in the tube substantially as described. 85

4. In a signaling apparatus, a lantern case having oppositely disposed openings with concentric projecting integral thimbles adapted to receive a horizontal supporting tube passed
90 through the openings, a clamping ring to fix one of the thimbles on the tube, the thimble adjacent to the end of the tube having a cone shaped end with an opening at its apex to loosely receive a revoluble shaft journaled in and through the tube, and an opening at the
95 lower edge of its base communicating with a chamber surrounding the shaft within the cone, substantially as described.

5. In a signaling apparatus consisting of a lantern-case supported by a horizontal tube
100 passed through said case and having a revoluble shaft journaled in and through said tube, the combination therewith of a thimble projecting from the side of the case and embracing the end of the tube, the projected
105 end of the thimble cone shaped, with an opening at its apex to loosely receive the shaft, and an opening at the under side of its base communicating with the chamber surrounding the shaft within the cone, substantially
110 as described.

6. In a signaling apparatus, a lantern case having a revoluble shaft projecting therefrom in combination with a cone shaped projection on the case to form a chamber around
115 the shaft, the cone having an opening at its apex to loosely receive the shaft, and an outer opening at its base communicating with the chamber, substantially as described.

7. In a train order signal the combination
120 of a rock-shaft journaled in and through a horizontal supporting tube, and having a rigidly attached signal board at one end, and means for operating it at its other end, said tube disposed through a lantern case having
125 sight openings with a rock-shaft pivoted in the case, and having arms carrying colored glass disks to register with said sight openings also having an arm attached to one end of a chain, the other end of the chain passed
130 through an opening in the tube within the case, and attached to the shaft within the tube and adapted to wind thereon substantially as described.

8. In a train order signal the combination of a rock-shaft journaled in and through a horizontal supporting tube and having at one end a rigidly attached signal board and at its opposite end means for rocking said shaft, the tube disposed through a lantern case having sight openings, a rock-shaft pivoted in said case and having arms carrying colored glass disks to register with the sight openings, an opening in the tube within the case, a chain one end attached to the shaft in the tube and adapted to wind thereon and depend through the opening in the tube with the opposite end attached to an eye-bolt seated in a slotted arm on the rock-shaft carrying the disks substantially as described.

9. In a train order signal the combination of the supporting tube 1, having the opening 6 with a rock-shaft 2 journaled in and through the tube, the signal board 3 having the bar 20, attached to the outer end of the shaft, and the pulley 16 carrying the cord 25, attached to the opposite end, the rock-shaft having the stud 5 projecting into the opening 6 to limit the motion of said rock-shaft to a one-fourth

revolution substantially as shown and described.

10. In a train order signal the combination of the rock-shaft 2 the signal board 3 attached at one end and at its opposite end the wheel 16 carrying the cord 25 and having the teeth 23 and 23' to engage the stop-block 24 to limit the motion of the rock-shaft, with the lantern case 28 having pivoted therein the rock-shaft 9 having the arms 33 and 33' carrying the disks 4 and 4' and having the arm with the slot 29 to receive the eye-bolt 8, the chain 7, one end attached to the eye-bolt the other end attached to the rock-shaft 2 to wind thereon, the buffers 21 and 21' to stop the descent of the disks 4 and 4' all substantially as shown and described.

Signed at Blair, in the county of Washington, State of Nebraska, this 13th day of January, 1894.

WILBUR P. SQUIER.

Witnesses:

CHRIS MEHRENS,
J. F. TRACY.