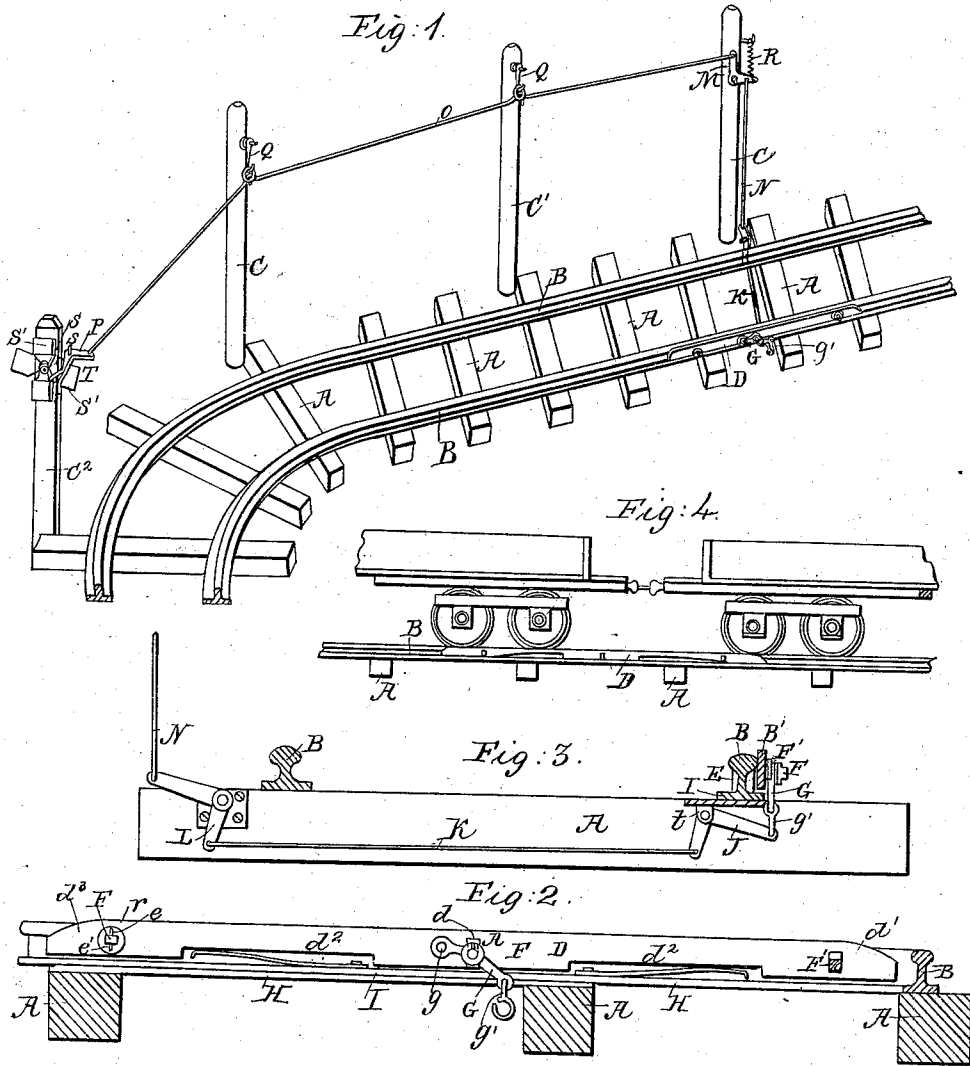


AKLEY & COGGESHALL.  
 Railway Signal.

No. 86,624.

Patented Feb. 9, 1869.



Witnesses.

*Wm. B. Deming*  
*Wm. C. Burton*

Inventors.

*J. D. Akley & F. Coggeshall*  
 By *Amos A. King*  
 atty

# United States Patent Office.

JAMES D. AKLEY, OF MIFFLIN, AND FREABORN P. COGGESHALL,  
OF PATTERSON, PENNSYLVANIA.

Letters Patent No. 86,624, dated February 9, 1869.

## IMPROVED RAILWAY-SIGNAL.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, JAMES D. AKLEY, of Mifflin, in the county of Juniata, and State of Pennsylvania, and FREABORN P. COGGESHALL, of Patterson, in the county of Juniata, and State of Pennsylvania, have invented certain new and useful Improvements in Railroad-Signals; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which are made a part of this specification.

Our invention relates to an arrangement for exhibiting a light, or other signal, at a curve or crossing, by means of the approaching train, for the purpose of notifying the engineer of a train coming from the opposite direction, or others, of the approach of said train, and thus avoiding the collisions and other accidents now so common in said places.

Our improvements consist, first, in a novel and superior construction of the trigger, or treadle, through which the devices are operated, said treadle being preferably mounted on one of the rails of the track, and adapted to be operated by the tread of the wheels passing over it, and of such length as to adapt it to be continually engaged by one or more of said wheels, and thus hold the signal in its exposed position the entire time the train is passing.

Our improvements further consist in a novel and simple arrangement of bell-cranks and wires, for connecting the trigger, or treadle, to the signal to be operated.

In the drawings—

Figure 1 is a perspective view of a section of track, having our invention applied.

Figure 2 is an enlarged side elevation, illustrating more clearly the construction of the trigger, or treadle, and the preferred mode of attaching it to the rail.

Figure 3 is a transverse section, on the same scale as fig. 2.

Figure 4 is a diagram, illustrating the manner in which the trigger, or treadle, is operated.

A may represent the cross-ties of the track, and B, the rails.

C C' C<sup>2</sup> are posts, or poles, erected at suitable points, for the application of our invention, and which may also, when preferred, constitute the "telegraph-poles."

D represents a trigger, or treadle, of novel form, attached preferably to the outside of the rail, so as to be operated on by the tread of the wheels of the cars, and employed to communicate the desired intelligence to the point where the signal is located, by uncovering, or otherwise operating said signal, as hereinafter more fully described.

E E' are plates or bars of metal, which may be of the form employed in making the ordinary "tie-joint" of railroad-rails, and which may be also thus employed when desired.

Secured to E, and passing through the rail and E', or passing through all in the form of bolts, are studs, F F', which occupy vertically-elongated slots, *d d'*, in the treadle D, the ones, F', being provided on their outer end with a washer, *e*, and pin, *e*, or a similar provision, to hold the treadle in position, while the one, F, is extended, to form a pivot for a lever, G, one end of which is attached to the treadle, as at *g*, and the other provided with a link, *g'*, or equivalent device, for conveying the motion.

The studs F' are preferably made square in cross-section, as represented in fig. 2, to prevent the independent movement of any part of the treadle, and cause it to be operated for its whole length by pressure upon any part.

H H are springs secured to the flange of the rail, or otherwise, and engaging with the under side of the treadle, to hold it in an elevated position, suitable recesses, *d<sup>2</sup>*, being provided in the treadle for the reception of said springs, if necessary.

The treadle D may be of any desired height and thickness, being so adjusted as to be capable of being depressed even with the surface of the rail, and to receive sufficient movement by said depression, and the consequent elevation, to move the signal the requisite extent.

Its ends are preferably bevelled or curved, as at *d<sup>3</sup>*, to adapt the wheels to more readily engage with and pass over it.

The length of said treadle is so adjusted as to be greater than the greatest distance between two wheels in the train, so as to cause it to be constantly engaged by at least one of the wheels, and thus continued in its depressed position during the passage of the entire train over it, as illustrated in fig. 4.

I, fig. 3, is a metallic plate, mounted on the cross-ties, between which the lever G is located, and under the rail, being held by the customary spikes, or other suitable appliance.

A pair of lugs, *i*, is provided on the under side of said plate I, for the reception of a bell-crank, J, whose respective arms are connected by the link *g'* to the loose end of the lever G, and by a wire, K, to a bell-crank, L, pivoted similarly to J, or to the cross-tie, as shown, at the opposite side of the track.

M is a bell-crank, pivoted at a suitable height on the post, or pole, C, which is located in a line, or nearly so, with the before-described devices, as represented in fig. 1.

It is connected to the bell-crank L by a wire, N, and by the wire O, through, if necessary, intermediate bell-cranks, to a bell-crank, P, on the signal-post C<sup>2</sup>.

Q Q are swinging hangers, provided at a suitable height, on each of the intermediate posts, or poles, C', of which there is any requisite number, and employed to support the wire or wires connecting the bell-cranks

M and P, said hangers being so constructed as to allow the requisite amount of movement of said wire or wires without chafing, and with as little friction as possible.

A spring, R, weight, or equivalent device, may, if desired, be applied to the bell-crank M, as shown, or to some other suitable part of the apparatus, in addition to the spring H, to assist in performing the return movement of the several parts.

S is a "signal," located at a suitable height on the post C<sup>2</sup>, and consisting of a "red light," s, for night, and a "red spot," s', for day.

They are both covered by a pivoted cover, S', which is connected, by means of a link, T, to the bell-crank P, through which, by the depression of the treadle D, it is partially rotated, as represented in red outline in fig. 1, and continued in that position, with the signals exposed, during the passage of the train over said treadle, as before described.

It is obvious that many other forms of "signals," than that shown and described, may be used in connection with our operating-devices, and that the arrangement of connections may be varied to suit said different forms, or for other reasons.

We also propose using, when preferred, a different form of treadle with our improved arrangement of

connections; for instance, a short treadle, adapted to be operated separately by each wheel passing over it, which would be preferable, were a lantern or bell used as the signal.

Chains, rods, or other suitable connecting-media may be substituted wholly or in part for the wires, if preferred.

Having thus described our invention, the following is what we claim as new therein, and desire to secure by Letters Patent:

1. In combination with a signalling-device, S S', constructed and adapted to operate substantially as herein described, we claim the elongated trigger or treadle D, adapted to maintain said signal in the position indicating danger, during the passage of the entire train over said treadle, as and for the purpose specified.

2. The combined arrangement of the treadle D, bell-cranks J L M P, connections g' K N O T, and hangers Q, substantially as described for the purpose set forth.

JAMES D. AKLEY.  
FREABORN P. COGGESHALL.

Witnesses:

THOS. J. TROW,  
RICHARD H. MCGILL.