

GEORGE F. FOLSOM.

Improvement in Signalling Device for Railroads.

No. 119,456.

Patented Oct. 3, 1871.

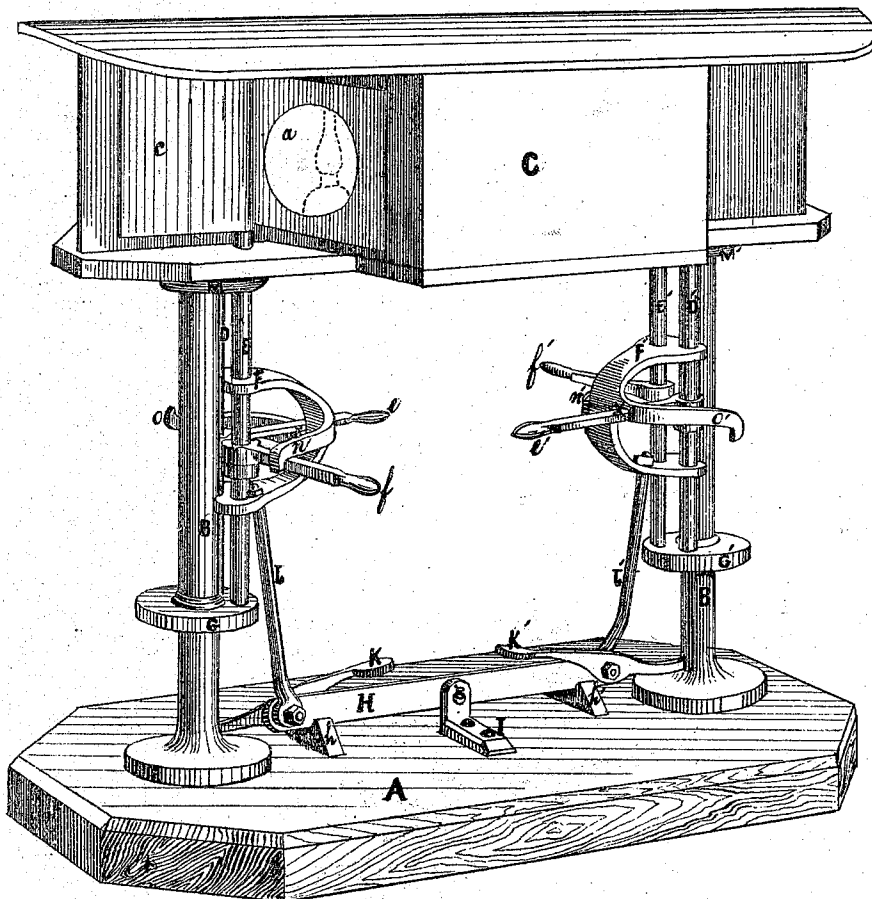


Fig. 1

WITNESSES

H. C. Davis
John R. Baker

INVENTOR

Geo. F. Folsom

GEORGE F. FOLSOM.

2 Sheets--Sheet 2.

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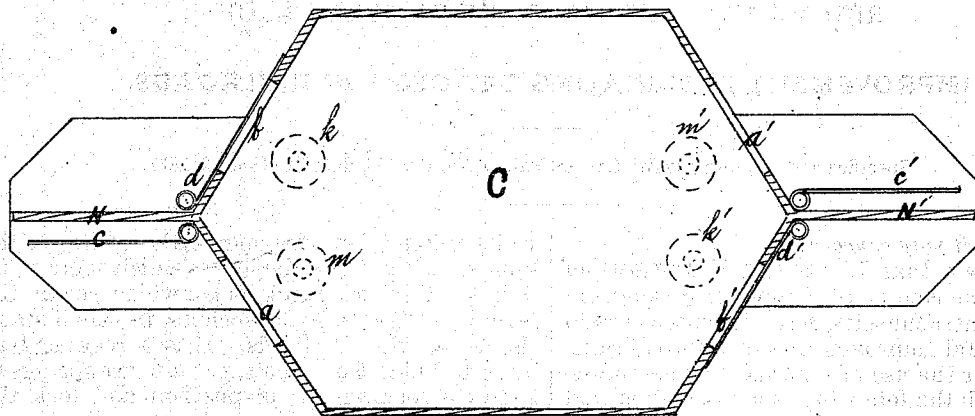


Fig. 2

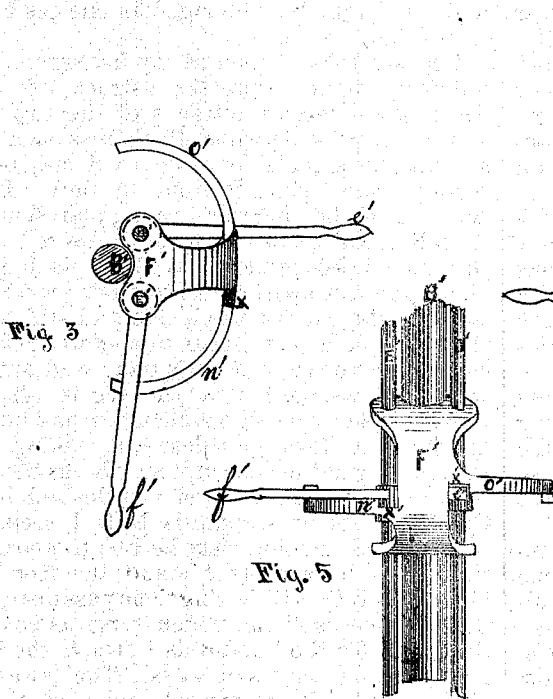


Fig. 3

Fig. 4

Fig. 5

WITNESSES

W. L. Dune
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UNITED STATES PATENT OFFICE.

GEORGE F. FOLSOM, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF HIS
RIGHT TO ALBERT A. FOLSOM, OF SAME PLACE.

IMPROVEMENT IN SIGNALING DEVICES FOR RAILROADS.

Specification forming part of Letters Patent No. 119,456, dated October 3, 1871.

To all whom it may concern:

Be it known that I, GEORGE F. FOLSOM, of Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Railroad Safety-Signals for the use of railroads at their crossings, of which the following is a description and specification:

The first part of my invention relates to a railroad signal to be used where the track of one road crosses that of another, or elsewhere; and consists in having the signal-boards and lights so arranged that they may be shown in one or both directions on the same track independently, and not seen on the other track; or, to be more explicit, it is so constructed that the operator or watchman who is stationed at an elevation above the track and below the signal-chamber or lantern may show the signals so that one train on that track may pass, or he may show both signals and allow a train to pass each way at the same time on double tracks; but he cannot show signals on both tracks at the same time, thus precluding the possibility of any accident by trains on both roads coming into collision. The second part of my invention relates to a series of levers operated within check-locks, which levers operate the blind-rods and open and close blinds to the signal-boards and lights, presenting them to or shutting them from the view of the engineers, which signal-boards and lights are so arranged that the engineers on one road cannot see those for the other road.

Figure 1 is a perspective elevation of my invention, showing the operative parts with one signal open. Fig. 2 is a top view of a signal-chamber or lantern with the covering removed. Figs. 3 and 4 are vertical transverse sections, showing the check-locks, levers, and blind-rods. Fig. 5 is a front view of one check-lock, levers, and blind-rods.

A represents the floor of operator's or watchman's room, which is elevated in the tower to any desired distance. B B' are the posts which support the blind-rods and other operative parts, and are about five feet apart. C is the signal-chamber or lantern with signal-boards and windows. *a a' b b'* are the signal-boards, and colored windows within them. *c c' d d'* are the blinds to signal-boards and windows, operated by the machinery below. D D' E E' are the blind-rods,

which extend from the operator's room up to the blinds. *e e' f f'* are the levers which operate the blinds. F F' are check-locks, which secure the levers. G G' are fixed sockets, in which stand the feet of the blind-rods. H is a rocking bar, hung to brace I on a bolt, *g*. *h h'* are springs to keep the rocking bar in position and lock the levers when the blinds are closed. J J' are rods connecting the rocking bar with the check-locks. K K' are foot-treadles pivoted to the ends of the rocking bar, and hinged to the posts B B'. *l l' m m'* are lamps behind the colored windows for night, but may be exchanged for one gas-burner, if desired.

I construct and operate my invention in the following manner, viz.: I construct a tower in the angle between the tracks of the two roads, as near as possible where they cross each other, so that the signals for each road may be seen readily at any distance from its track. I place the floor of the operator's room, represented by A in Fig. 1, at whatever elevation desired. Upon that floor I secure the posts B B', placing them about five feet apart, so as to allow room to pass between the ends of the levers and still to have the levers sufficiently near to operate them with ease. I have the operator's room well supplied with windows, so that he can see in all directions. I place the signal-chamber or lantern C at whatever elevation I desire, it making no difference at what elevation it may be, as the blind-rods E E' D D' may be of any desired length. On the posts or standards B B' I secure the sockets G G', or they may be cast thereon, if desired. In the sockets I stand the feet of the blind-rods D D' E E', letting them pass up through the head-pieces M M', which serve as boxes for the rods. To the blind-rods I attach the levers *e e' f f'* by set-screws or keys. The lower ends of the blind-rods are turned, and pass through the check-locks F F' so as to play freely therein, and so that the check-locks may move up and down thereon. I connect the check-locks to the ends of the rocking bar H by means of connecting-rods J J', which are pivoted to the rocking bar, and are fastened to the check-locks by nuts, the connecting-rods having shoulders beneath. I attach the treadle-levers K K' to the rocking bar by bolt, and hinge the one end to the posts or standards B B'. Under each end of the rocking bar I place a spring, to keep the bar level

and lock the levers when the blinds are closed. I attach the blinds to the rods by bolts, and make the blinds of stout sheet-iron, as they are thin and are not effected by the weather. I paint the "faces" of the signal-chambers, which are the size of the blinds, white, which serve as "flags." I also have within the faces or signal-boards $c\ c'$ $d\ d'$ windows of colored glass for night use. For light at night, lamps or gas may be used. In a tower now in use as an experiment I use one gas-burner, which gives ample light, and placed in the center of the lantern C, which is about four feet in diameter, shows equally from all windows. I have dividing-boards or partitions N N' between the windows on opposite sides, which serve to shut the signals for one road track from view on the other road, and also to arrest the blinds when opened, as seen in Figs. 1 and 2. The check-locks, which have two arms each, $n\ n'\ o\ o'$, are so constructed that one arm is face up and one face down on each, as shown in Fig. 5; and in each arm is a notch, which locks the levers when the blinds are closed, as shown at x in Figs. 1, 4, and 5. When the blinds are all closed the levers are all "home" and in their notches and "locked," as the springs $h\ h'$ force the checks into their proper positions, so that the blinds cannot open.

I operate the signals in the following manner: Suppose trains are approaching the crossing upon both roads—on one road two passenger-trains from opposite directions, and on the other road a passenger-train and a freight-train. The trains are allowed to pass in order of their arrival, the freight-trains always giving way to passenger. Suppose the first train is the freight; then the passenger on same road; then the two trains on the other roads. I place my foot upon treadle K, which causes check-lock F to rise and F' to fall, and allows lever f to be worked, which opens blind c . I open that blind, but, not moving lever f' , blind c' will remain closed. Suppose the passenger-train faces signal a , which is open, it passes over; but as signal a' is not open, which faces the freight-train, it cannot pass. As soon as the passenger-train is past I close signal a ,

press down treadle K, which unlocks levers $e\ e'$, when I open both signals $b\ b'$, which allows both passenger-trains on the other road to pass. As soon as they are past, those signals are closed and signal a' opened, and the freight-train passes. In pressing down treadle K, which unlocks levers $f\ f'$ and opens blinds $c\ c'$, as shown in Figs. 1, 2, 3, and 4, the levers $e\ e'$ are locked the more securely, as the faces of their arms are the reverse of those of levers $f\ f'$, as the notch for each lever is deep; and when check-lock F rises and F' falls, it will be seen that the notches for levers $e\ e'$ will be dropped more deeply over them, so that it is impossible to unlock them, as the levers $f\ f'$ while open, one or both, hold the check-locks so that they cannot be moved. Thus it is impossible to show signals to both roads at the same time. The machinery of my invention is easily operated, and is convenient and compact, and the signals can be opened and closed instantly, saving much time, and avoiding all the dangers incident to the old mode of signaling by "balls" and "lanterns."

In construction of my signaling-chamber or lantern I do not confine myself to any particular shape; nor do I confine myself to any particular size or shape for signal-boards and blinds.

I claim as new, and desire to secure by Letters Patent—

1. The combination of the posts B B' and sockets G G' and heads M M', blind-rods D D' E E', levers $e\ e'\ f\ f'$, check-locks F F', rocking bar H with springs $h\ h'$, treadles K K', connecting-rods J J', blinds $c\ c'\ d\ d'$, signal-boards and windows $a\ a'\ b\ b'$, or the equivalents of any, substantially as and for the purpose hereinbefore set forth.

2. The signal-chamber or lantern C, combining signal-boards and windows $a\ a'\ b\ b'$ and blinds $c\ c'\ d\ d'$, constructed and operated substantially as and for the purpose hereinbefore set forth.

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

Witnesses:

GEO. F. FOLSOM.

JOHN R. BAKER,

H. C. DAN.

(91)