A. M. BODLEY.

RAILROAD SIGNAL.

No. 186,531. Patented Jan. 23, 1877.

Fig. 1.

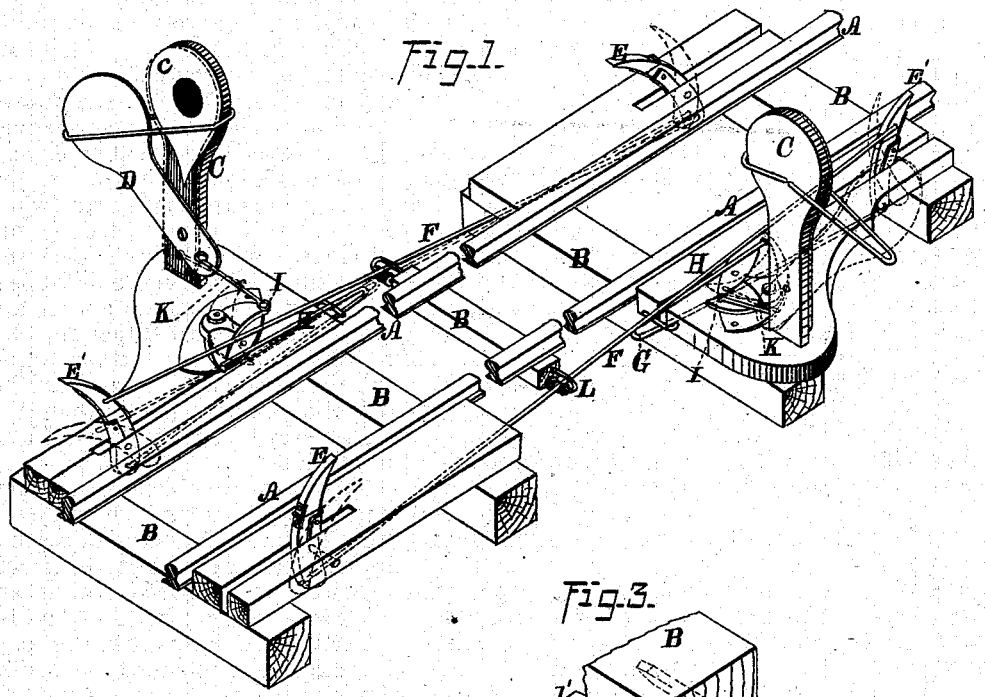


Fig. 3.

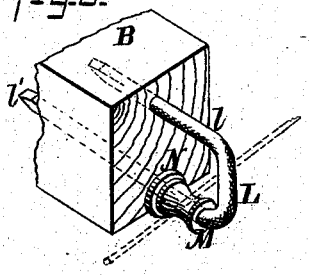
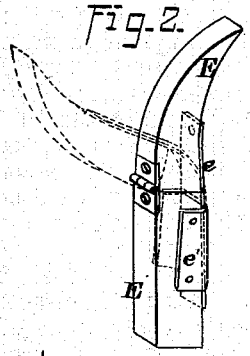


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ABRAM M. BODLEY, OF NEWPORT, KENTUCKY.

IMPROVEMENT IN RAILROAD-SIGNALS.

Specification forming part of Letters Patent No. **186,531**, dated January 23, 1877; application filed January 10, 1877.

To all whom it may concern:

Be it known that I, ABRAM M. BODLEY, of Newport, in the county of Campbell, and in the State of Kentucky, have invented certain new and useful Improvements in Railroad-Signals; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a perspective view of my improved apparatus as applied to a railway, the full lines showing the position of parts when the target is exposed, and the dotted lines the position when said parts are moved so as to uncover said target. Fig. 2 is a like view of one of the levers employed for operating the target-shields, and Fig. 3 is a perspective view of one of the guides employed for confining in place and sustaining the wires used for connecting the levers and target-shields.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to enable the presence of a train upon a curve to be signaled to any desired point in advance, so as thereby to prevent a train from entering said curve from an opposite direction; to which end it consists, principally, in the means employed for covering and uncovering the signal-targets by the motion of passing trains, substantially as and for the purpose hereinafter specified.

It consists, further, in the peculiar construction of the operating-levers, by means of which they are permitted to flex or yield in one direction, substantially as and for the purpose hereinafter shown.

It consists, finally, in the means employed for guiding and supporting the rods used for connecting the operating-levers to or with the target-shields, substantially as and for the purpose hereinafter set forth.

In the annexed drawing, A and A represent the rails of a railway, which are supported, in the usual manner, upon or by means of ties B. At a suitable point near each end of a curve, deep cut or other dangerous point upon the line, a target, C, is secured in a vertical position at one side of the track, and is provided with a conspicuous face, *c*, which can be seen for a considerable distance during the day, while at night a light, colored or white, is employed within said face. Upon the face side of the target C is pivoted a shield, D, which corresponds therewith in general size and shape, and is capable of being moved over or from said face, so as to conceal or expose the same by turning edgewise upon its pivotal bearing. It is intended that a train, when entering upon the section protected by the signals, shall move the shield from over the target placed at the opposite end of said section, so as to warn the engineer of a train approaching from the opposite direction, and prevent him from proceeding farther, while upon leaving said section said target is to be again covered, so as to indicate that the track is clear. These results are accomplished in the following manner:

At each of the points from whence the target-shield is to be moved away from and over the target, a lever, E, is pivoted within some suitable support, near the side of the track upon which said target is placed, and is arranged to move in a vertical plane—that is, parallel—with said track. From the lower end of the first lever E, which extends to some distance below its pivotal bearing, a rod, F, extends along the side of the track to the second lever E′, and is connected with the latter above its pivotal bearing, the arrangement being such as to cause said second lever E′ to be thrown rearward when said first lever E is moved forward, as shown by the full lines of the apparatus at the upper side of the track in Fig. 1, while by moving said second lever E′ forward, said first lever E will be returned to its former position, as shown by the apparatus at the lower side of the track in Fig. 1. From the lower end of the lever E′ a rod, G, extends rearward within suitable guides, and is either directly or by means of a bar, H, connected with one arm of a bell-crank lever, I, that is pivoted upon a suitable support between the target and track, so as to move in a horizontal plane, while the opposite arm of said bell-crank lever is connected with the lower end of the shield D by means of a bar, K. As thus arranged the forward movement of the first lever E will throw the upper end

of the second lever E′ rearward, and, through the mechanism described, move the target-shield D away from the face of the target C, while by moving said second lever E′ forward said first lever and said target-shield will be returned to their normal positions. Each engine will require an arm, which projects laterally and horizontally outward to a sufficient distance to impinge against the operating-levers E and E′ as said engine moves past the same, which arm may either be rigid or capable of being withdrawn when not in use, as is desired.

To prevent injury to the levers E and E′ in case the engine is moved backward until the tripping-arm comes into contact with their forward edges, each of said levers is divided horizontally at a suitable point between its pivotal bearing and upper end, and its sections hinged together, so as to permit the upper part to turn rearward, as shown by dotted lines of Fig. 2, but not to turn forward of its original position. To retain the hinged section of the lever in its normal position a flat spring, *e*, is secured at one end to or upon the forward edge of the same, above its lower end, and from thence extends downward against the forward edge of the lower section of said lever, where said spring is loosely confined in position by means of a housing, *e′*, which is attached to the latter. If, now, the hinged section of the lever E is turned rearward, the spring *e* will be partially withdrawn from its housing, and will assume a curved form, and upon releasing said hinged section said spring will resume its straight form, and by such operation will return said section in place.

As the rod F will have considerable length, and will follow the curve of the track, the following-described means are employed for sustaining and guiding the same: A staple, L, constructed with a long and short arm, *l* and *l′*, respectively, has journaled upon its long arm *l′* a grooved roller, M, and between said roller and the end of said arm is loosely placed a collar, N. The staple is now placed over the rod F, the arms *l* and *l′* being horizontal, and the latter below, with said rod resting upon the grooved roller M, after which said staple is driven into the end of a tie, B, as seen in Fig. 3, in which position said staple furnishes a support for said rolling bearing M, and also operates to confine said rod in place, and to prevent accidental displacement.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the target-shield D, pivoted upon the target C, and arranged to move before or away from its face *c*, the levers E and E′, pivoted at the side of the track, so as to be moved by passing trains, connected together by the rod F, and connected with said shield by means of the rod G, bar H, bell-crank lever I, and bar K, substantially as and for the purpose specified.

2. The operating-lever E, divided transversely and hinged at the point of division, and provided with the spring *e*, which is secured at one end to the forward face of one section, and has its opposite end confined loosely against the corresponding face of the remaining section, substantially as and for the purpose shown.

3. As a means for sustaining the rod F, and confining the same in position, the staple L, provided with a long and a short arm, *l* and *l′*, respectively, and driven horizontally into a tie or other suitable support, and the grooved roller M, journaled upon said arm *l′*, and furnishing a rolling bearing for said rod, said parts being combined to operate in the manner substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 8th day of January, 1877.

ABRAM MATTHEW BODLEY. [L. S.]

Attest:
CHAS. E. ALLEN,
OLIVER N. ROOT.