F. C. BOLTON & M. ADAMS.

Railroad-Signal.

No. 163,446. Patented May 18, 1875.

Fig. 1.

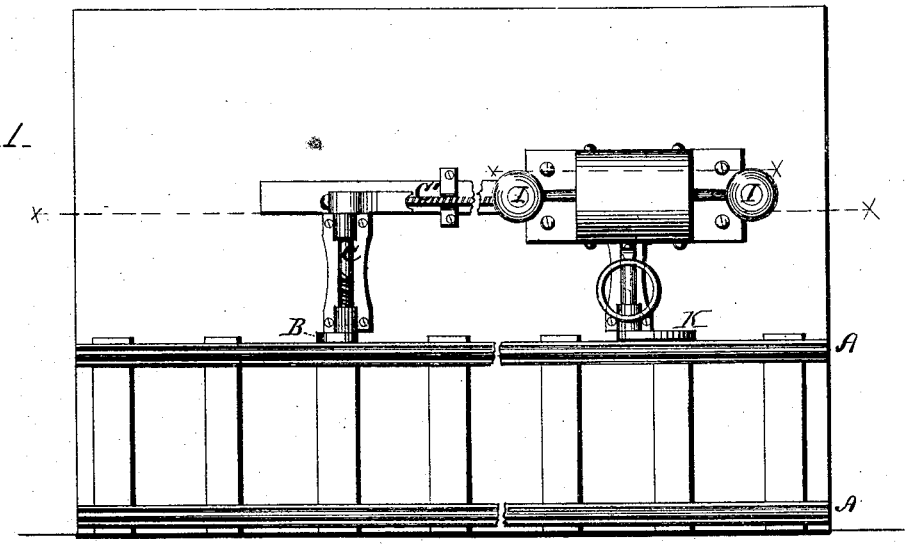
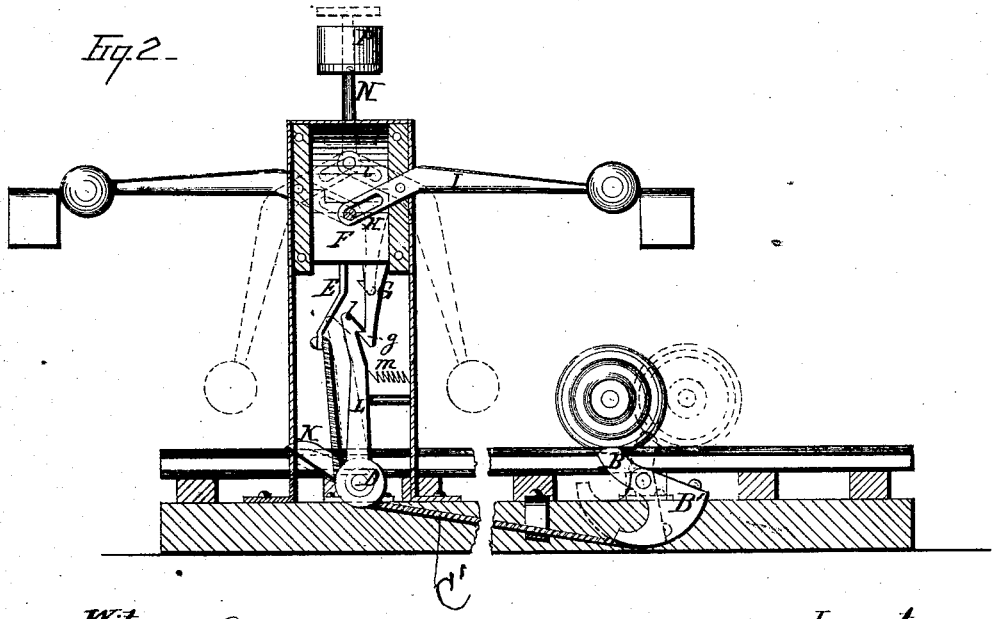


Fig. 2.



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UNITED STATES PATENT OFFICE.

FESTUS C. BOLTON AND MICHEL ADAMS, OF CLEVELAND, OHIO.

IMPROVEMENT IN RAILROAD-SIGNALS.

Specification forming part of Letters Patent No. **163,446**, dated May 18, 1875; application filed February 15, 1875.

To all whom it may concern:

Be it known that we, FESTUS C. BOLTON and MICHEL ADAMS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Signals for Railway-Crossings; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improved signal for railroad-crossings, designed for the purpose of informing travelers along the road of the approach of a train.

It consists in two arms that are made to rise and fall through the medium of a tilting lever that is operated by the car-wheel, the said lever being attached to or in the vicinity of the track.

In the drawings, Figure 1 is a plan view of our improved railroad-crossing signal. Fig. 2 is a section of same, taken through the two arms.

A is the raiload-track. B is the tilting lever, located at, say, a thousand feet or so from the said crossing. C is a shaft connecting this tilting lever with a segment-wheel, B′, or its equivalent, to which is attached a cord or wire, or its equivalent, which passes from this point to the signal. After passing around a pulley, D, whereby its direction is changed, this cord or wire passes up and is attached to a projection or arm, E. This projection or arm is attached to a block, F, which slides up and down in suitable guides. To this block is attached rigidly an arm, G, with a hook, *g*, thereon. To the block F is also attached a cross-bar, H, which cross-bar passes through elongated slots *i* in the arms I, so that as the block F is drawn down by the cord or wire the cross-bar H causes the arms I to rise to a horizontal position. As before stated, the arms are raised to this position by the wheels of a passing train pressing upon the tilting lever B; and as long as the arms remain in this horizontal position, persons are warned that a train is approaching. K is a similar tilting lever located at the crossing or opposite to the signal. It is also arranged to be operated by the wheels of a passing train of cars. At the other end of this tilting lever is an upright hook or pawl, L, provided with a hook end, *l*. This is held in its upright position by any suitable means—a spring, M, being shown in the drawings for that purpose. When the block F descends by the action of the wheel upon the first lever B, its hook-arm G will descend, and its hook *g* will engage with the hook *l* on the arm or pawl L. This hook is what holds the arm I in the horizontal position. When the car arrives opposite the signal it is no longer necessary to give a warning. The wheel strikes the tilting lever K, which, in tilting, releases the hook *l* from the hook *g*, and the arms I fall by their own gravity. A tilting lever, B, is located in a similar manner upon the other side of the crossing, so that a train approaching from that direction would be likewise signaled at the crossing. Both the tilting levers are so geared with a wire or cord, C′, that they are operated only in one direction, so that after a train has passed a crossing and comes in contact with the tilting lever in front of it, it will not operate the signal. The means shown for effecting this are not the only means that may be employed, but they appear to be practicable. In order to relieve the cord or wire C′ from the sudden strain that is thrown upon it when the car-wheel strikes the tilting lever B, there may be any suitable device—as, for instance, a spring on the line of the cord—to relieve this sudden jerk, and yet communicate sufficient draft upon the block F that the arms will be thrown up into the horizontal position. Upon the ends of the arms I may, if desired, be placed flags to assist in attracting attention. N is a post attached to the cross-bar. This post may bear a red or other colored globe, P, at its top, so that when the cross-bar descends with the block F, this colored globe will be brought down around a stationary lamp located in any suitable position. In this way a signal or alarm may be given at night.

What we claim as our invention is—

1. The railroad-crossing signal, consisting of the combination, with the pivoted arms I, cord or wire C′, and tilting lever B, of the

block F and cross-bar H, substantially as and for the purpose described.

2. The combination, with the arms I and mechanism for elevating them, substantially as described, of the block F, projecting arm G, and spring-hook L, for retaining the said arms in their horizontal position, substantially as and for the purpose described.

3. The combination, with the hook *g* and the spring-hook L, of the tilting lever K, arranged to be operated by the car-wheels, whereby the arms I are released, substantially as and for the purpose described.

4. The combination, with the block F, of the cross-bar H, post N, and the colored shade, whereby the said shade may be brought down around a light when the arms are elevated, substantially as and for the purpose described.

In testimony whereof, we have signed our names to this specification in the presence of two subscribing witnesses.

FESTUS C. BOLTON.
MICHEL ADAMS.

Witnesses:
FRANCIS TOMNEY,
H. T. HOWES.