

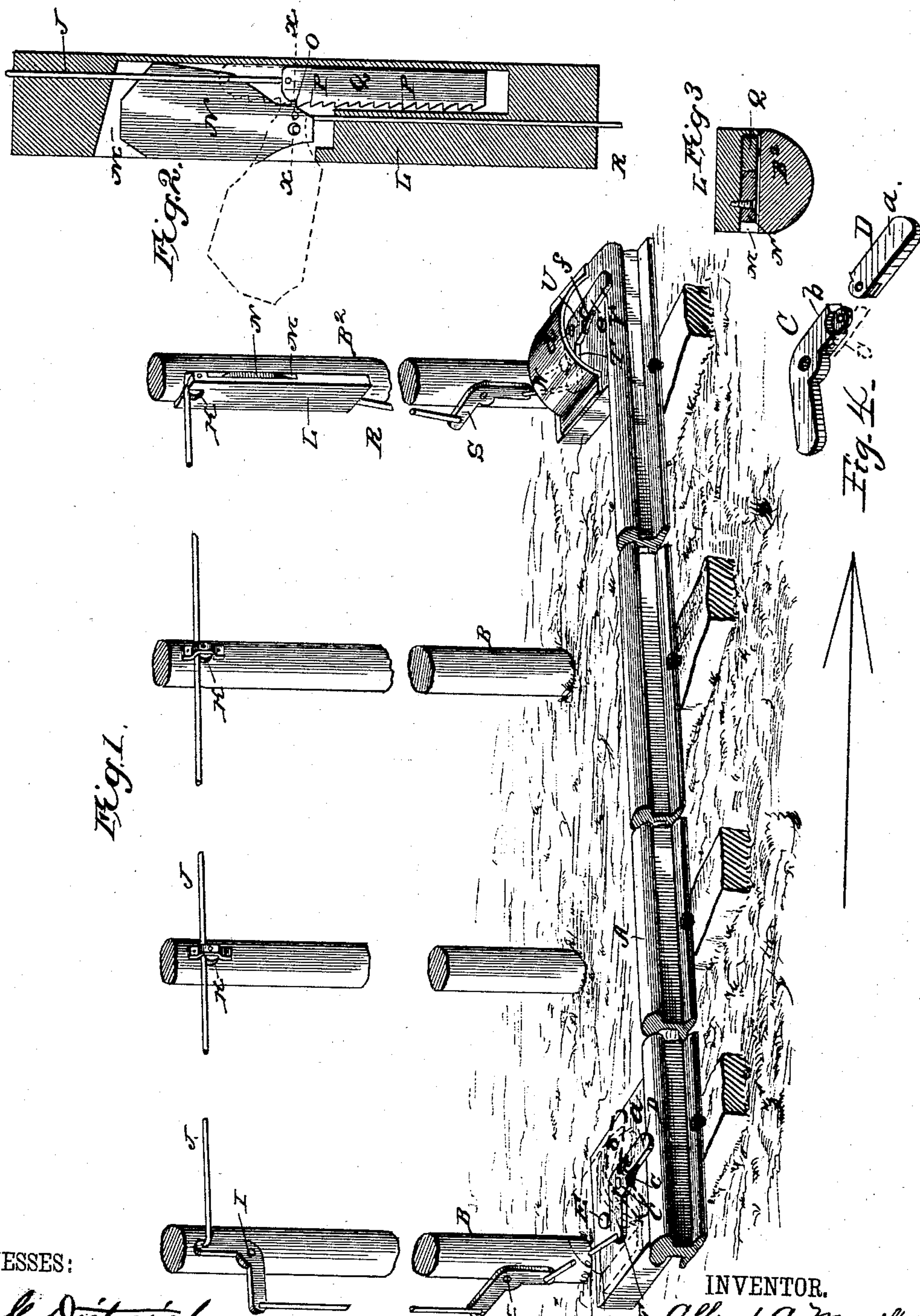
(No Model.)

A. A. MORRILL.

RAILWAY SIGNAL.

No. 327,299.

Patented Sept. 29, 1885.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALFRED ALONZO MORRILL, OF BURNT WOODS, OREGON.

RAILWAY-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 327,299, dated September 29, 1885.

Application filed April 10, 1885. (No model.)

To all whom it may concern:

Be it known that I, ALFRED A. MORRILL, a citizen of the United States, and a resident of Burnt Woods, in the county of Washington and State of Oregon, have invented certain new and useful Improvements in Railway-Signals; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved railroad-signal. Fig. 2 is a vertical transverse sectional view of the operating mechanism. Fig. 3 is a horizontal sectional view taken on the line *xx* in Fig. 2, and Fig. 4 is a detail view of the arm or tripping device.

The same letters refer to the same parts in all the figures.

This invention relates to railroad-signals; and it has for its object to provide a signaling device which shall possess superior advantages in point of simplicity, durability, and general efficiency, which shall be operated automatically by passing trains with ease, certainty, and accuracy, and which may be constructed and put into operation at a moderate expense.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A designates one of the rails of a single track, and B B are several of the telegraph-poles arranged adjoining the said track and to which my improved signaling device may be attached, for the purpose of saving the expense of erecting special poles for the purpose.

C is a bell-crank lever pivoted in a horizontal position adjoining the railroad-track, and with one of its arms, D, extending over the rail A. Said arm D is constructed of two parts or pieces, *a* and *b*, pivoted together at the inner edge, as shown, a spring, *e*, being suitably applied to hold the said arms in con-

tact with each other. A suitable stud or stop, E, is arranged adjoining the outer side of the other arm, F, of the bell-crank lever. By this construction it will be seen that a train coming in the direction indicated by an arrow will operate the bell-crank lever and swing it to the position shown in dotted lines in the drawings, while a train coming in the opposite direction will simply strike the hinged end of the arm D of the said lever without affecting the position of the arm F of the latter.

The arm F of the bell-crank lever C is connected by means of a rod, cord, or wire, G, with one of the arms of a bell-crank, H, pivoted at the foot of the pole B, and the other arm of which is connected in like manner with one arm of a lever, I, pivoted at the top of the said pole. From the other arm of the lever I a wire, J, passes over suitable guide-pulleys arranged at the upper ends of the posts B B, as shown at K K, to the upper end of the post B², and over a pulley, K, there located.

The upper end of the post B² has a casing L, provided with a slot, M, in which is pivoted a semaphore or signal-arm, N, the rear end of which is provided with a tooth, O, adapted to be engaged by a series of ratchets, P P, formed upon the face of a weight, Q, suspended within the casing L by the end of the wire J.

Attached to the arm N, in the rear of its fulcrum, is another cord or wire, R, connected with one arm of a bell-crank lever, S, pivoted at the foot of the post B², and the other arm of which is likewise connected by a wire, S, with one arm, T, of a bell-crank lever, U, pivoted horizontally adjoining the track, and the other arm of which, V, extends over the rail A. The arm V is composed, like the arm D of lever C, of two pieces, *d* and *e*, hinged together, and with a spring, *f*, to hold the free end in position. A stud or stop, W, is arranged adjoining the arm T of lever U.

The several bell-crank levers, or such of them as are located on or near the ground, are to be covered with suitably-constructed casings to prevent dirt and snow from accumulating around them and hindering their operation, and tubular or other casings are to be

provided for the operating-wires or connecting-cords, which are liable to obstruction or interference.

The operation of this invention will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed. When a train passes in the direction indicated by the arrow, the heel of the pilot of the locomotive will strike the arm D of lever C, rocking said lever upon its pivot, thereby actuating the several connecting cords and levers, and raising the weight Q, the ratchets of which will engage the tooth O of the semaphore-arm N, which latter will thus be tilted and thrown out of the slot M, thus giving a danger-signal to any train which may happen to be coming in the opposite direction. It is obvious that the first post, B, and the post B² should be located a considerable distance—say, about one mile—from each other, in order that the warning-signal may be thrown into action in due season. When the train reaches and engages the lever U, the latter, together with the intermediate connecting mechanism, will operate to raise the signal-arm back into the casing and out of view.

It is obvious that this system of signals, in order to be thoroughly effective, should be arranged throughout the entire length of the track, a new section commencing at the termination of the first section, or before, if desired, in which latter case the operating-wires may be simply arranged to overlap each other. A similar system is also arranged at the other side of the track, to be operated by trains moving in the opposite direction. Warning will thus invariably be given in due season whenever trains shall happen to run toward each other upon the same track.

I would have it understood that I do not limit myself to the precise construction and arrangement of parts herein shown and described, but reserve to myself the right to all such modifications as may be resorted to without departing from the spirit of my invention.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a railroad-signal, the combination of a pivoted signal-arm having a tooth in rear of its fulcrum, a weight having a series of ratchets adapted to engage the said tooth and tilt the signal-arm, and suitable operating mechanism, substantially as and for the purpose set forth.

2. In a railroad-signal, the combination of a series of posts, a casing attached to one of the same, a signal-arm pivoted in said casing and having a tooth in rear of its fulcrum, a vertically-movable weight suspended from a cord and having a series of teeth or ratchets, connecting cords and levers, and guide-pulleys, and the actuating-levers pivoted near one of the track-rails and having arms extending over the same, and stops to limit the back motion of said actuating-levers, all arranged and operating substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

ALFRED ALONZO MORRILL.

Witnesses:

LUTHER M. MORRILL,
ASHER TYLER.