(No Model.)

H. ROSER.

RAILWAY SIGNAL APPARATUS.

No. 341,605. Patented May 11, 1886.

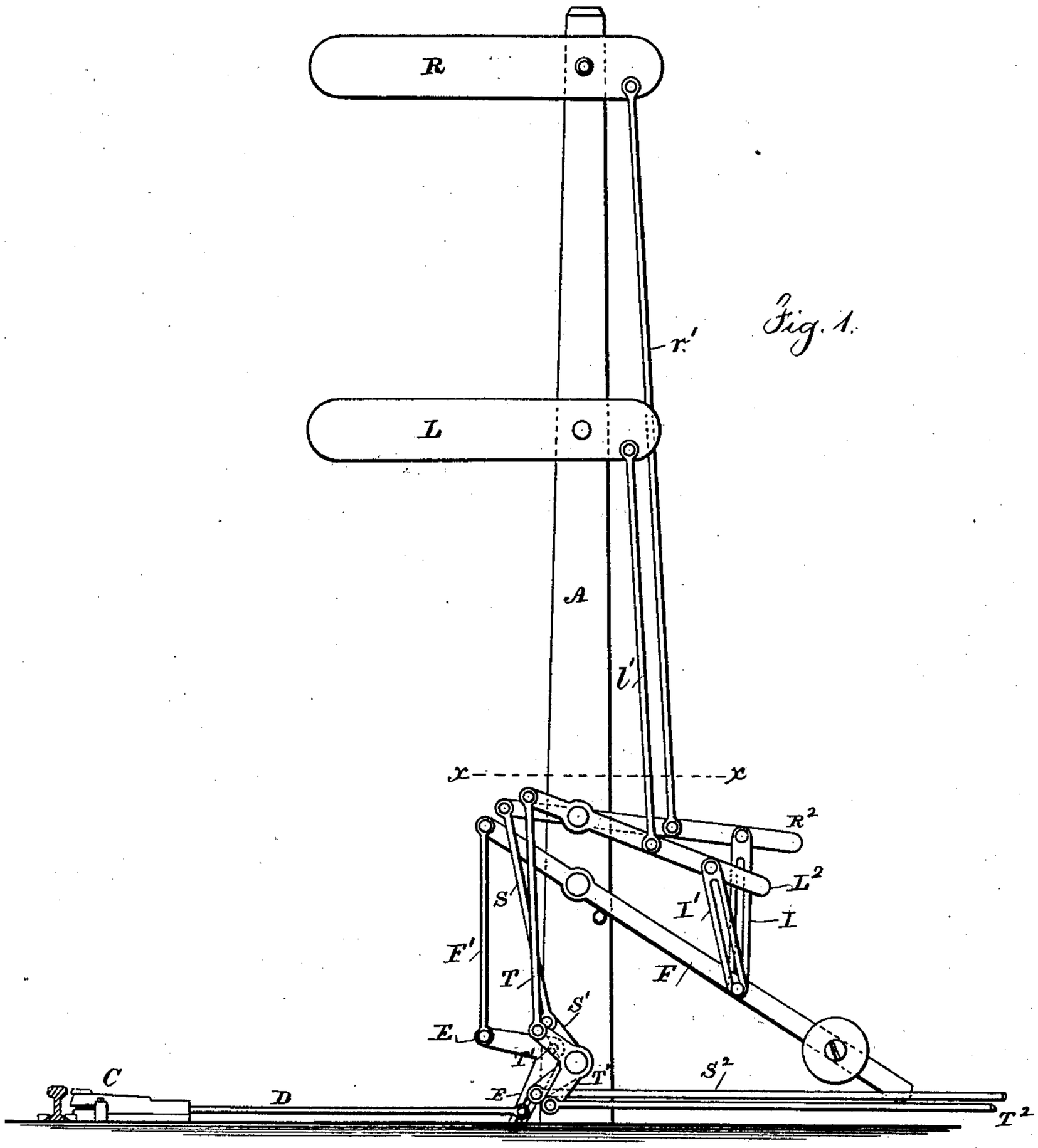

Fig. 1.

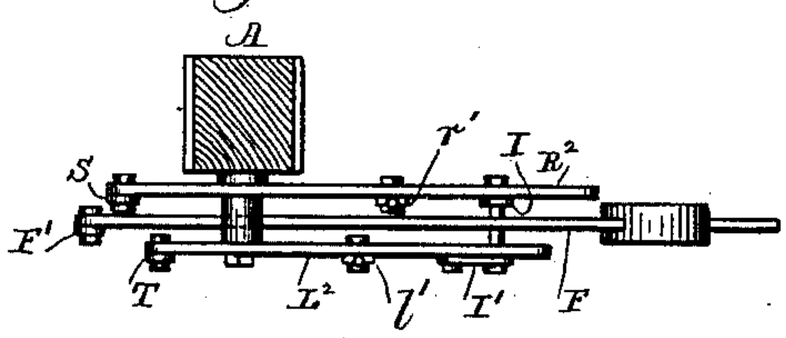

Fig. 2

Witnesses

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atty

UNITED STATES PATENT OFFICE.

HARRY ROSER, OF LONG ISLAND CITY, ASSIGNOR TO TIMOTHY G. PALMER, OF SCHULTZVILLE, NEW YORK.

RAILWAY-SIGNAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 341,605, dated May 11, 1886.

Application filed October 22, 1885. Serial No. 180,571. (No model.)

To all whom it may concern:

Be it known that I, HARRY ROSER, of Long Island City, in the county of Queens and State of New York, have invented an Improvement in Railway-Signal Apparatus, of which the following is a specification.

Where two or more tracks converge or where two or more tracks cross each other, signals have heretofore been made use of to indicate which of the tracks is in the condition for the passage of a train. The visual signals are usually placed upon a pole one above the other, and operated separately by rods extending to the signal or switch house. Torpedo-signals have also been operated in connection with these visual signals, one torpedo-signal being made use of for each visual signal. A torpedo-signal of this character is shown in Letters Patent No. 310,717, granted January 13, 1885, to Timothy G. Palmer.

My present invention relates to the combination, with two or more visual signals, of one torpedo-signal arranged in such a manner that when either danger-signal is dropped or withdrawn and one track is free for a train to pass over it the torpedo-signal is withdrawn, so as not to be exploded by the passing train; but when both the danger-signals are exhibited the torpedo will be placed in position to be exploded by the passing train.

By this improvement I am able to lessen the number of torpedo-signals to be made use of without lessening their efficiency.

In the drawings, Figure 1 is an elevation of the signal apparatus, and Fig. 2 is a plan view below the line *x x*.

The signal-post A is of a suitable size and height for receiving two or more swinging visual signals. I have shown two such signals, (marked R and L.) These signals are constructed in any known or desired manner, and usually they are arranged to hang down vertically when the railway or branch is clear and project horizontally to indicate danger and warn an approaching train to stop. The connections to these signals are of ordinary character—that is to say, a link, *r'*, to the signal R connects the same to a lever, R^2, pivoted to the post A, so that said lever will swing the visual signal out into a horizontal position to indicate danger. The link *l'* and lever L^2 are provided for the signal L. The connecting-rod S from the lever R^2 to the bell-crank S' and horizontal rod or wire rope S^2 serves for actuating the signal R, the rod or rope S^2 leading to a lever in the signal house or tower. A similar link, T, bell-crank T', and rope or rod T^2, extending to the signal-house, is made use of in actuating the signal L.

At C, I have represented a torpedo-signal as adjacent to the rail, and such signal may be of the character shown in the aforesaid patent to T. G. Palmer, and there is a rod, D, connecting the same to the bent lever E at or near the post A, and there is a weighted lever, F, pivoted upon the post A, and provided with a link, F', connecting the same to the bent lever E. The weight upon this lever F, in connection with the torpedo apparatus, is sufficient to cause the torpedo to be projected into position to be exploded, and it will be apparent that the normal positions of the visual signals are horizontal, and that the torpedo at that time is in position to be exploded, and these indicate "danger;" but when either one of the rods T^2 or S^2 is moved and one of the visual signals L or R swung down to indicate "safety" upon either the main or branch line, the torpedo is simultaneously withdrawn, the link I or I' lifting the lever F of the torpedo apparatus without disturbing the other visual signal, R or L.

The special feature of my present invention relates to the combination, with the levers before described, of the slotted connecting-links I and I', there being a headed bolt or pin that passes through the lever F, and also through the slots in the respective links I and I', and these links I and I' are hinged at their upper ends to the respective levers R^2 and L^2; hence when the lever L^2 is raised and the signal L lowered, the slotted link I' raises the weighted lever F, and the torpedo in the signal apparatus is withdrawn from the tracks. During this operation the pin in the lever F slides up in the slot in the link I, so that the movement of the signal L does not alter the position of the signal R. In like manner, when the lever R^2 is moved to drop the danger-signal R, the link I raises the lever F, and the torpedo is drawn back; but the pin in the lever F slides in the slot of the link I', so that the signal L

is not acted upon by the movement of the signal R. In this manner one torpedo-signal is operated in connection with two visual signals, and it will be apparent that three or more visual signals may be operated, if necessary, in connection with the one torpedo-signal, the pin of the lever F being lengthened sufficiently to receive all the slotted links connected with the visual signals.

The positions of the signal-posts, respective levers, visual signals, and connecting-rods will, by preference, be at or near a branch track, but will necessarily be varied according to the tracks that have to be guarded and the location of the signal or switch house with which the parts are connected.

One torpedo-exploder in connection with a post and two visual signals, as before described, will protect two tracks, or a main and branch track, by having it understood that the upper signal refers to the main line and the lower to the branch line, or vice versa, the torpedo-exploder being located on the single line of track, where it can be acted on by the passing train before it reaches a branch track or crossing.

I claim as my invention—

The combination, with two or more visual signals, the posts supporting the same, and the links and levers for actuating such signals, of one torpedo-signal apparatus and its connecting rods or ropes and levers, the lever F, and the slotted links I and I′ to the respective weighted signal-levers R^2 and L^2, whereby the torpedo-signal apparatus is actuated by either one of the visual signals, substantially as specified.

Signed by me this 9th day of October, A. D. 1885.

HARRY ROSER.

Witnesses:
MICHAEL CLAVEN,
DANIEL NOBLE.