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I. ILLINE.

APPARATUS FOR RAILWAY FOG SIGNALING.

(Application filed July 7, 1899.)

(No Model.)

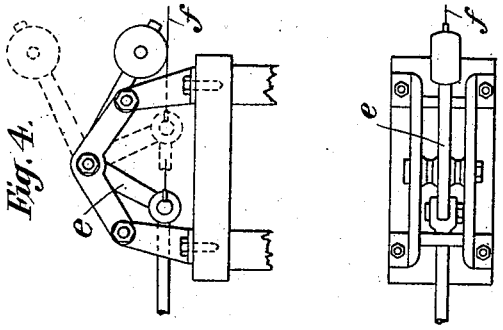

Fig. 4.

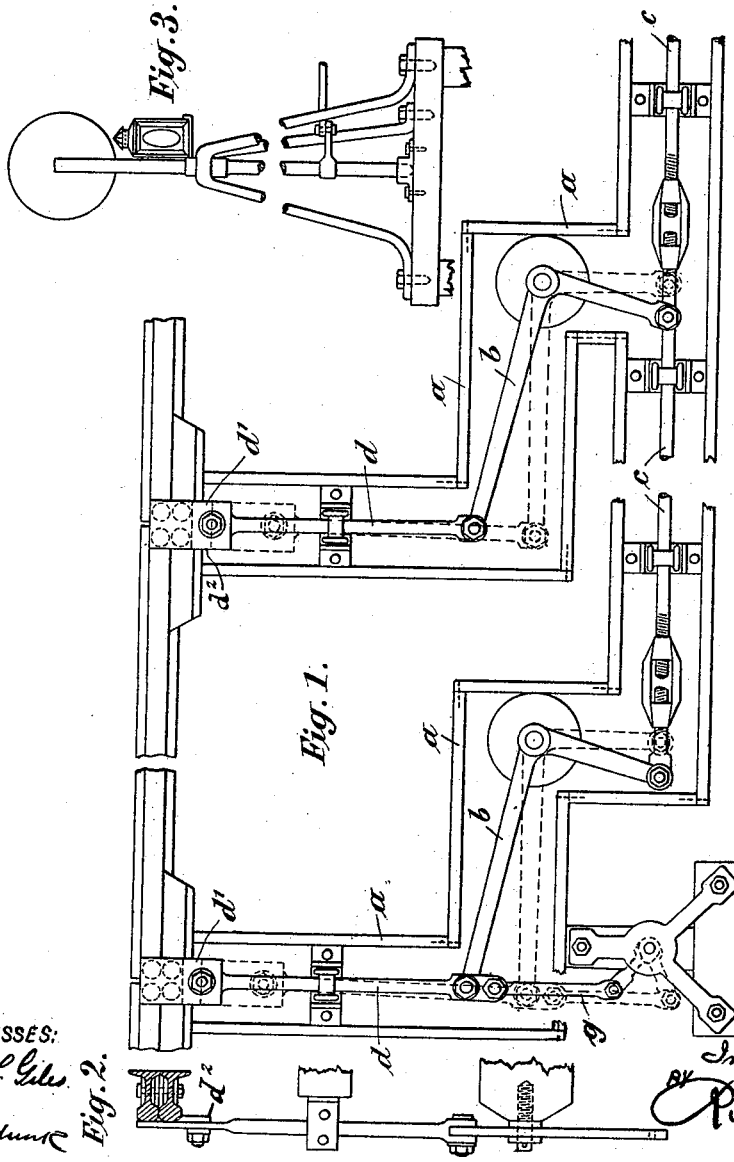

Fig. 3.

Fig. 1.

Fig. 2.

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APPARATUS FOR RAILWAY FOG SIGNALING.

SPECIFICATION forming part of Letters Patent No. 648,108, dated April 24, 1900.

Application filed July 7, 1899. Serial No. 723,079. (No model.)

To all whom it may concern:

Be it known that I, IVAN ILLINE, engineer, a subject of the Emperor of Russia, residing at Kharkov, in the Province of Charkow, Russia, have invented certain new and useful Improvements in Apparatus for Railway Fog Signaling; and I 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 appertains to make and use the same.

The ordinary visible signals which regulate the approach and departure of trains at railway-stations are not reliable in dull foggy weather, as either they are entirely invisible to the engine-driver on the train or else can only be seen from such a short distance that a stoppage within the prescribed limits is not possible. In such cases so-called "fog-signals" are used, which consist of explosive matter inclosed in capsules fastened on the rails. The capsule explodes by means of the pressure of the wheels going over it and by its sharp report rouses the attention of the train officials. These fog-signals require special officials, who walk along the track and secure the capsules on the rails by hand. There are, however, considerable objections to this plan. At small stations the proper person may not be momentarily available, while at large stations with a great deal of traffic there is much risk to the workmen in dull or foggy weather who have to place the fog-signals. The present invention is designed to remedy these defects, while enabling the fog-signals to be laid from the station preferably at the same time as the actuation of the visible signals. This takes place in a very simple manner by placing angle-levers at a suitable distance from the station to an arm of which one or more fog-signals are fixed. The angle-lever can be moved from the station by means of rods and draw-wires in such a manner that in case of need by simply moving a lever at the station the arm of the angle-lever containing the fog-signals is pushed onto the rail, so that a train passing over must explode the fog-signal. Several such angle-levers can of course be arranged one behind another, if desirable. Also they can be connected with the visible signals.

In the accompanying drawings, Figure 1 illustrates the apparatus in plan view, and Figs. 2 to 4 illustrate single parts thereof.

Near the railway-track an angle-lever *b* is arranged in a box *a*. In Fig. 1 two such levers are illustrated, one behind the other, which are connected by means of a movable rod *c*. One arm of the lever *b* engages with a bar *d*, which is suitably guided and has at its other end a widened extension *d'*, on which can be placed a thin metal casing containing the fog-signals. (Four in the construction shown.) The fog-signals may of course be applied to the bar in other suitable ways. The levers *b* are preferably fixed on the sleepers, as shown in Fig. 1. The bars *d* are connected, by means of the rod *c*, with one arm of the angle-lever *e*, movable in the perpendicular direction in a bearing, the free end of which angle-lever bears a heavy weight. On the same arm of the angle-lever *e* a draw-wire *f* is secured, which wire extends to the railway-station and is there fastened to a hand-lever. The lever *b*, like the lever *e*, is usually in the position indicated by dotted lines. If the fog-signals are to be laid down, then the hand-lever at the station is shifted, and this by means of the wire *f*, causes the angle-lever *e* to be set free, the weighted arm of which is sufficiently heavy to bring the lever into the position indicated by the dotted lines. In this position the widened ends *d'* of the bar *d* rest on the rail, which at this point can be widened by means of an auxiliary rail. A train passing over this point will consequently cause the fog-signal to explode.

In order to bring the apparatus back to a state of rest, the regulating-lever at the station is pulled over into the opposite position, and the weight of the weighted arm of the angle-lever draws back the rod *c*, so that the bar *d* moves away from the rails.

Devices of this kind suffer from the great drawback that there is a possibility that the wheels of the passing train will push the lever *d*, with its detonating signals, from the rail, so that the fog-signals remain inactive. To avoid this, a flat cross-piece d^2 is arranged at the lower side of the enlargement *d'*, Figs. 1 and 2. When the rod *d* is advanced, this cross-piece d^2 presses with its straight front side firmly against the counter-rail, and thus prevents a lateral displacement of the rod *d*,

as the rod when pushed at its end to move would have to describe a sector-like course. The flat cross-piece d^2, having a long bearing on the rail, will prevent this movement, so that a train passing over the track must explode the detonating signals under all circumstances.

It is preferable to connect the present apparatus with a visible signal with the object of sparing the fog-signal whenever the former can be seen. The best is the simple signal illustrated in Fig. 3, consisting of a disk and lantern connected with the first of several angle-levers *b*, lying one behind the other, by means of a rod *g*, which assists in the movement of the angle-lever, and thereby moves the visible signal as desired.

The connection of the separate parts with each other and also with the station can obviously be made in any preferred manner.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a railway signaling device, the combination with the rail, a pivoted lever, means operated from a distance for tilting the lever, a cartridge-carrier movable at right angles to the rail secured to one end of the lever, and a bearing-plate secured to the carrier extending a distance parallel to said rail and designed to abut the same when the carrier is in its forward position and above the rail to prevent the swinging movement of said carrier.

In witness whereof I have hereunto set my hand in presence of two witnesses.

IVAN ILLINE.

Witnesses:
M. BREITFUSS,
E. LOURIE.