

S. B. RICE.
 MEANS FOR SHORT CIRCUITING BLOCK SIGNALING SYSTEMS.
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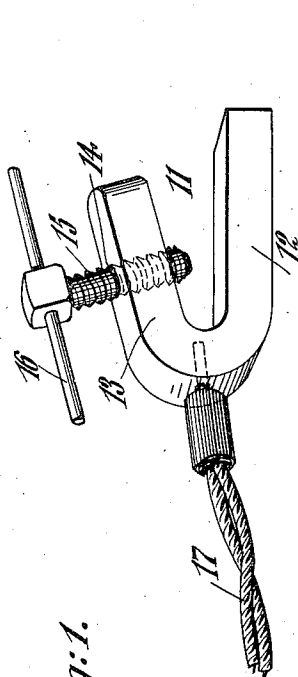


Fig. 1.

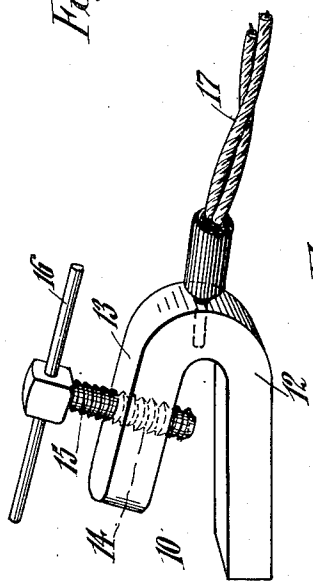


Fig. 2.

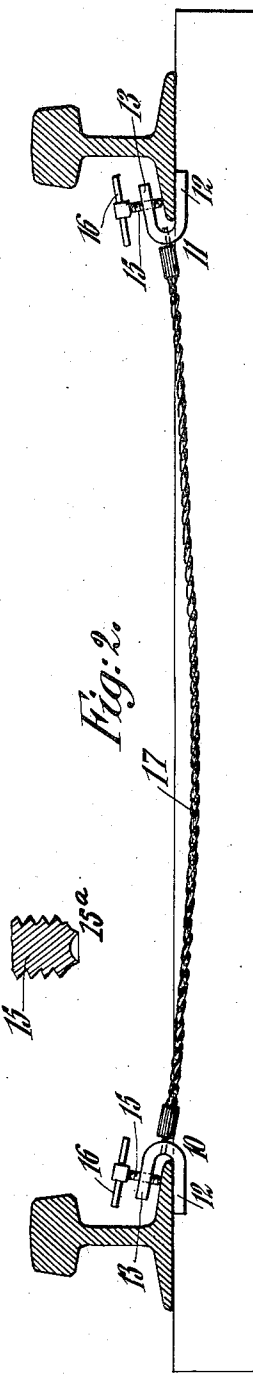


Fig. 4.

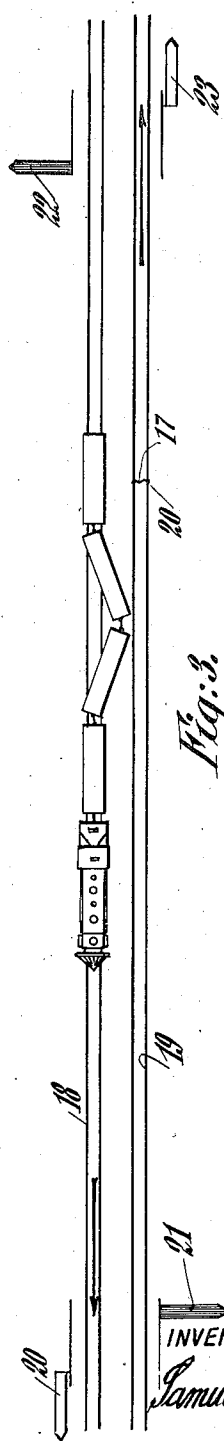


Fig. 5.

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MEANS FOR SHORT-CIRCUITING BLOCK-SIGNALING SYSTEMS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SAMUEL B. RICE, a citizen of the United States, residing at Richmond, in the State of Virginia, have
5 invented certain new and useful Improvements in Means for Short-Circuiting Block-Signaling Systems, of which the following is a specification.

Heretofore serious accidents have occurred
10 on railway lines provided with block signaling systems, as, for instance, where a train going in one direction on one track would foul a train going in opposite direction on another track, which has occurred in the
15 case of a train going in one direction and having a broken axle which resulted in fouling the train which was due on the adjoining track.

The present invention resides in an appliance which can be secured to the rails of a track other than the track on which the fouling has taken place. To this end, one of the objects of the present invention is to provide an appliance which can be readily
25 attached to, and detached from, the adjoining rails of a track, as by a flagman, said appliance being provided with means for gripping and forming an electrical contact with the rails and the electric conductor connecting such gripping and contact means.

Another object of the invention is to provide an appliance of this nature which can be placed in position in a comparatively few seconds, which is inexpensive, and which
35 can be conveniently handled.

These being among the objects of the present invention, the same consists of certain features of construction and combinations of parts to be hereinafter described and then claimed with reference to the accompanying drawings illustrating one embodiment of the invention, in which—

Figure 1 is a perspective view of the appliance;

45 Fig. 2 is a transverse section taken through two adjoining parallel rails of a railway track, showing the approved appliance secured to said rails in operative position;

Fig. 3 is a diagrammatic plan view of a
50 block signaling system showing the utility of the improved appliance, the same being applied to one of the tracks; and

Fig. 4 is a detail section of one of the set-screws.

55 Referring to Figs. 1 and 2, the improved appliance preferably comprises a pair of

similar jaws 10, 11, preferably composed of a simple bar of iron or other conducting material, each of said jaws being substantially V-shaped. Each jaw is provided with an
60 arm 12, and with a second arm 13, so as to form a V-shaped recess, the arm 12 being adapted to have a bearing against the under side of the base-flange of a rail, while the other arm 13 is arranged at an acute angle
65 to the arm 12, and is adapted to be placed over the upper surface of said base-flange, so that there will be somewhat of a space between the arm 13 and the base-flange. Each arm 13 is provided with a screw-
70 threaded hole 14, which receives a set-screw or screw-threaded stud 15 which is provided with a handle 16 for turning it.

Electrically connected with the two jaws 10, 11, so that their V-shaped recesses flare
75 away therefrom, is a conductor 17 which may be in the form of a cable, comprising a number of conductors properly insulated. The electrical conductor 17 is of such length that when the two jaws 10, 11 are applied
80 to opposite parallel rails of a track,—that is, to the base flanges thereof, so as to receive said flanges in their V-shaped recesses—as shown in Fig. 2, it will span the distance from rail to rail.

85 Preferably, the inner ends of the set-screws which comprise the gripping or clamping means for the jaws are formed as at 15^a so as to cut their way through in sand or cinder on the rails, and to embed themselves in the
90 bases of the rails, thereby making a positive electrical contact.

The manner of using this simple short-circuiting appliance will be obvious from the diagram, Fig. 3. In this figure a railway
95 line comprising two tracks 18, 19, is illustrated, said tracks being for traffic in opposite directions. The arrows indicate the directions in which the trains move. Semaphore signals 20, 21, 22 and 23 are indicated,
100 and it will be seen that the semaphore 22 has been set to "danger" by a train on the track 18 to which something has happened, as a broken axle, causing said train to foul the track 19. The flagman of the train on
105 track 18 should immediately take one of the short-circuiting appliances such as described, and screw it to the rails of the adjoining track 19, thereby short-circuiting the block at that point, as indicated at 20. This
110 will result in setting semaphore 21 of track 19 to "danger" position, as illustrated.

When the obstruction has been removed the appliance can be removed from track 19.

Short-circuiting appliances such as described may be used to equip all engines and flagmen. They can be attached to the flagman's equipment and be at hand and ready for service at all times. The device should be carried by both freight and passenger trains, and at the moment of derailment the device should be attached to the opposite track by both flagman and fireman.

What I claim as new is:

1. In combination with a block-signaling system for railways, similar devices with V-shaped recesses, and having gripping means for removably gripping and forming electrical contact with the inward base flanges of two opposite rails of a track in any block, the said recesses of the devices being somewhat higher than the thickness of said flanges to allow a slight space for the movement of said gripping means to bear upon the upper surfaces of said flanges, and an electrical conductor connecting said devices, said devices having their V-shaped recesses flared away from the ends of the conductor, and being adapted to be instantly engaged with, or disengaged from, said flanges.

2. In a device of the class described, two V-shaped jaws of conducting material, one arm of each of which is provided with a set-

screw, the inner end of which is formed with a cutting edge to make a good electrical contact, said screws constituting gripping means, and an electric conductor connecting said jaws.

3. In a device of the class described, two V-shaped jaws composed of a simple bar of metal, one arm of each of which is provided with a set-screw, the inner end of which is formed to make a good electrical contact, said screws constituting gripping means, and each jaw and its gripping means being similar to the others, and an electric conductor connecting said jaws.

4. In combination with a block-signaling system for railways, similar devices for removably gripping and forming electrical contact with the inward base flanges of two opposite rails of an installed track in any block, and an electrical conductor connecting said devices, each of said devices comprising a jaw to engage over the base flange of a rail, and a set-screw for engaging said flange, and the lower arm of each jaw constituting a substantially straight lower terminal which is free from interference by the roadbed during the installation of the electrically-connected devices, whereby each jaw may be directly engaged with the inward base flange by a mere outward movement of the jaw on to it.

SAMUEL B. RICE.