

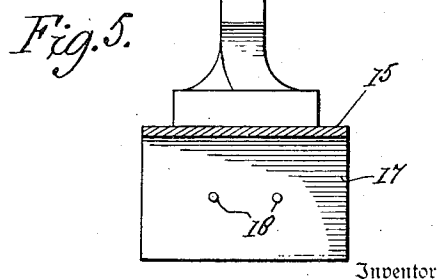
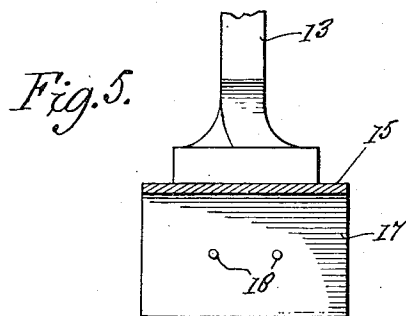
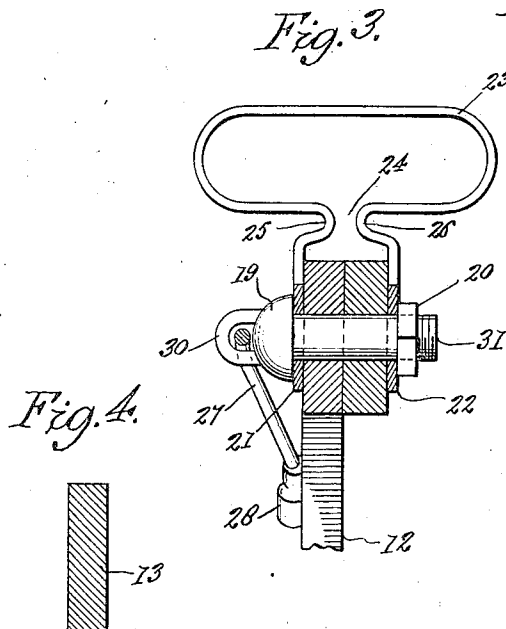
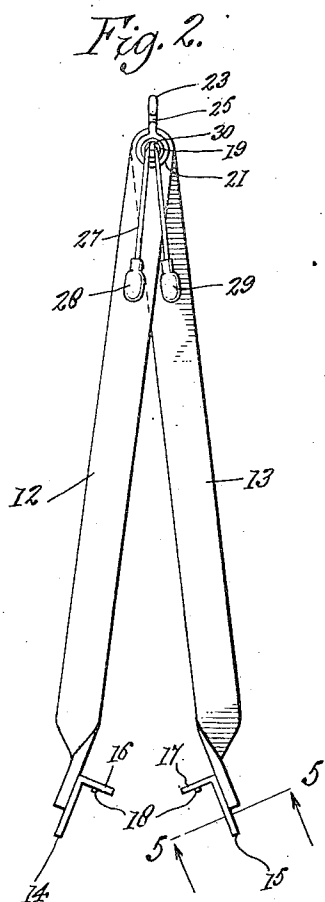
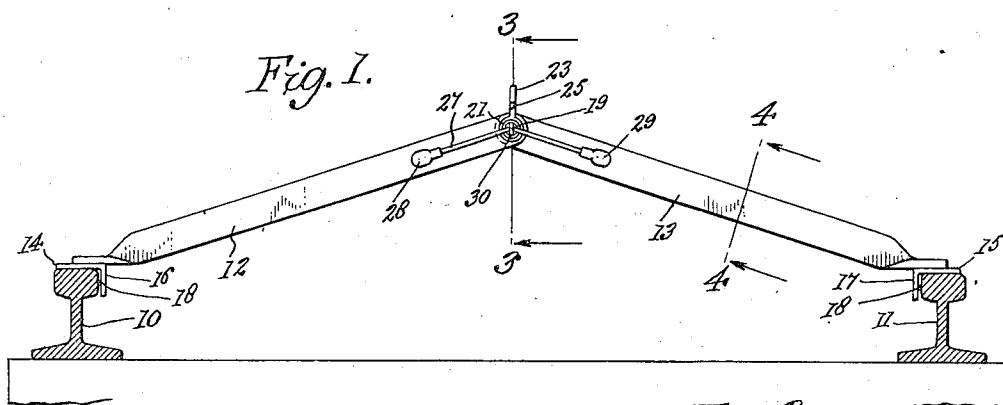
Jan. 1, 1946.

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2,392,064

RAILROAD SAFETY DEVICE

Filed June 16, 1944



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2,392,064

RAILROAD SAFETY DEVICE

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Application June 16, 1944, Serial No. 540,697

8 Claims. (Cl. 246—34)

The present invention relates to improvements in railroad safety devices, and more particularly relates to an improved device for electrically bridging the rails in much the same way as the presence thereon of a train in order to set the automatic block signals and which will have the effect to automatically stop trains in train control territory.

An object of the invention is to provide an improved device of the character above indicated which is adapted to perform its assigned function under all circumstances heretofore encountered in railway operation, and which admits of its placement on the rails in the matter of a few seconds of time.

Another object of the invention is to provide a safety device having shoes adapted to fit over the rails which are made of bronze with hard steel points to contact the sides of the rails.

A further object of the invention is to provide an improved safety device of the character indicated which will have a pyramidal shape so that if for any cause it is not removed from the track it will extend in such a form as to enable the pilot of a following engine to lift and fold the same and discard it without injury at the side of the track.

A still further object of the invention is to provide a railroad safety device so constructed and arranged as to be operable through snow and ice formations on the tops of the rails.

A still further object of the invention is to provide pivoted members or sections which are so bonded together as to safe-guard the joint from corroding and to electrically bridge the members or sections at the joint to insure the operativeness of the device even where oil in the joint might otherwise insulate the same.

With the foregoing and other objects in view, the invention will be more fully described herein-after, and will be more particularly pointed out in the claims appended hereto.

In the drawing, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a cross section taken through the companion rails of a standard railroad and showing the improved safety device in operative position thereon.

Figure 2 is a side elevation of the improved device in the folded condition.

Figure 3 is a vertical section, taken on an enlarged scale, through the center joint along the line 3—3 of Figure 1.

Figure 4 is a transverse section taken on the line 4—4 of Figure 1.

Figure 5 is a section taken on the line 5—5 of Figure 2.

Referring more particularly to the drawing 10 and 11 designate the rails of a standard or other railroad and 12 and 13 represent bars or sections of metal or some other good electrical conducting material. The body portions of the bars 12 and 13 may be of strap steel and of the rectangular configuration indicated in Figure 4, although the type of cross section and material may be varied to suit tastes or conditions.

The outer ends of the bars 12 and 13 are 15 equipped with shoes comprising ball contacts 14 and 15 and side rail contacts 16 and 17, the latter having hard steel pins 18 through the side plates 16 and 17 of the shoes and projecting inwardly thereof so as to engage the inner side faces of the rails 10 and 11.

The proximate ends of the bars 12 and 13 are overlapped and perforated in registration for the passage of a pin or bolt 31, shown more particularly in Figure 3. Between the head 19 of the bolt and a nut 20 threaded on the threaded end of the bolt 31 are also included the perforated end ring portions 21 and 22 made of strap or other metal or material which is fashioned intermediate its ends into a handle 23. The handle 23 is in the form of a loop or a closely completed loop save for the gap 24 which enables the handle loop to exert a resilient tension on the bolt head 19 and nut 20 as well as upon the overlapped adjacent end portions of the bars 12 and 13. In order to accentuate such resilient frictional action, the legs of the handle are crimped mutually inwards as indicated at 25 and 26, the crimps overlying the overlapped ends of the bars as indicated in Figure 3 and thus biasing the legs 21 and 22 to a mutually pinching or closing action upon the relatively external faces of the overlapped ends of the bars 12 and 13. In this way the device 23 serves in the dual capacity of a handle and of a tension device which will assist in maintaining the device in place because of its resistance to relative movement of the bars 12 and 13 about the pivotal connection 31.

A copper or other cable 27 is bonded at its ends as indicated at 28 and 29 to the bars 12 and 13 respectively at points remote from the center joint 31. The bolt head 19 may be equipped with an eye 30 through which the central portion of the cable 27 is threaded in order to dispose the cable properly with reference to the center joint 31 and also to provide an anchorage about 55 which the central portion of the cable 27 may

fold and rotate as indicated by the comparison of Figures 1 and 2.

In the use of the device, the handle 23 provides for easy portability to the point of use. When the device is lifted by the handle 23 the superior weight inherent in the bars 12 and 13 will overcome any resistance in the tension device 21, 22 and consequently the bars 12 and 13 will fall into a position of collapse as shown in Figure 2. However, the bars may be readily spread across the rails to the position indicated in Figure 1. In fact if the device in the condition indicated in Figure 2 is lowered to the ground so that the weight is taken off the handle 23 and transmitted to the shoes 14 and 15 the latter will tend to spread and separate. In other words the folded device has a natural tendency when lowered to spread to the operative position which will facilitate its placement upon the rails in the manner indicated in Figure 1 where the top flanges 14 and 15 lie upon the balls of the rails 10 and 11 with the side flanges 16 and 17 engaging the inner sides of the rail heads where there is no tendency of ice or snow to clink to the rails. Thus the inner sides of the rails offer a good surface of electrical contact and this contact is enhanced by the presence of the projections or pins 18 which would tend to penetrate through any extraneous layer of foreign material on the rail to the iron side wall of the rail. Thus good electrical contact is assured.

Bronze shoes with hard steel pins in the sides and copper bonded in the center cooperate to give the best possible contact and conduction.

The device is sufficiently heavy to retain itself in the proper position as indicated in Figure 1 and the flat wide forms of the shoes insure the stability of the device. The device is easily handled both in its placement and in its removal. Moreover the device is extremely inexpensive.

The device has been tested under all known conditions and has been found to satisfactorily set automatic block signals at stop, to automatically stop trains in train control territory and to operate all crossing danger signals connected with the rails.

The device is simply designed as to construction for quickness in operation and for complete effectiveness in purpose and result. It contributes a new factor of safety in the operation of trains.

While I have illustrated and described only one form of the invention it will be understood that the invention is susceptible in many mechanical forms and I reserve the right to all such embodiments as may fall within the scope of the following claims.

What is claimed is:

1. A safety device for railroads comprising bars pivoted together at their near ends, contact shoes at their far ends designed to contact the rails, the overall length of the bars when spread being greater than the gauge to cause the bars centrally to ridge and form a pyramidal construction arched upwardly to such a degree that the pilot of a locomotive will enter beneath the same.

2. An improved safety device for railroads comprising a pair of bars of conducting material pivoted together at their proximate ends and constructed and arranged at their distal ends to engage the companion track rails of the railroad, the overall length of said bars when spread being in excess of the gauge between the rails to cause the arching of the central portion of the device for the purpose of enabling the pilot of a locomotive to enter beneath the same.

3. A safety device for railroads comprising conducting means having end conformations to engage companion rails of the railroad, said means being substantially of bar form with the central portion arched upwardly to such a degree that the pilot of a locomotive will enter beneath the same.

4. A device as claimed in claim 3, characterized by the fact that said means comprises a plurality of conducting bars having their inner higher ends pivoted together to enable the bars to be folded together, and a handle located at the center pivot point whereby lifting by the handle automatically causes collapse and folding of said bars.

5. A safety device for railroads as claimed in claim 1 further comprising means for bonding the said bars across the pivot.

6. A safety device for railroads as claimed in claim 3 wherein the rail contacting portions of the bars have pins for making contact with the rails.

7. A safety device for railroads according to claim 1 characterized by the fact that the contact shoes include only and wholly two members each one horizontal and one vertical with the horizontal member adapted to rest on the ball of the rail, and the vertical member depending from the inner edge of the horizontal member to position said vertical member for contact with the inner side wall of the rail.

8. An improved safety device for railroads comprising pivoted bars, a copper or cable bonded across the pivot to said bars, bronze shoes carried at the free ends of said bars and shaped to engage the ball and inner sides only of the rails, and hard steel pins projecting from said shoes for contacting said rails, the combined length of the bars and shoes being greater than the gauge to cause the bars to arch upwardly to their pivoted ends to such a degree that the pilot of a locomotive will enter beneath the same.

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