

P. W. MOSHER.
ELECTRIC DANGER ALARM FOR RAILROADS.
APPLICATION FILED JULY 26, 1911.

1,033,341.

Patented July 23, 1912.

Fig. 1

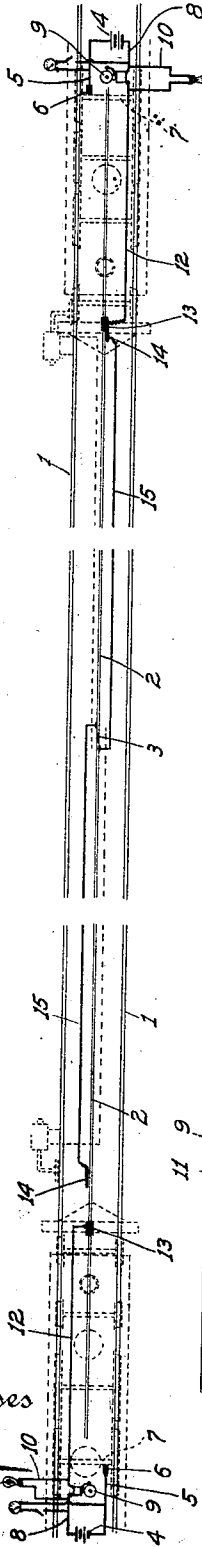


Fig. 2

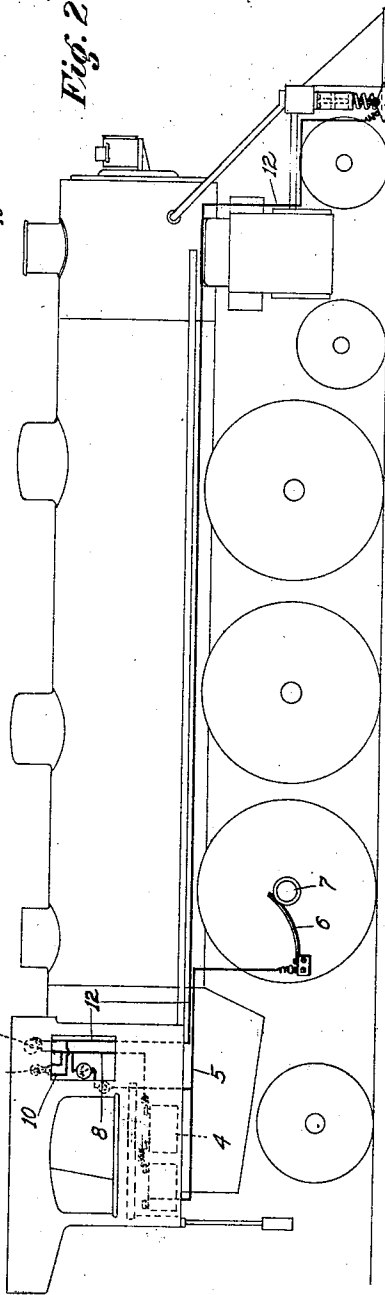


Fig. 4

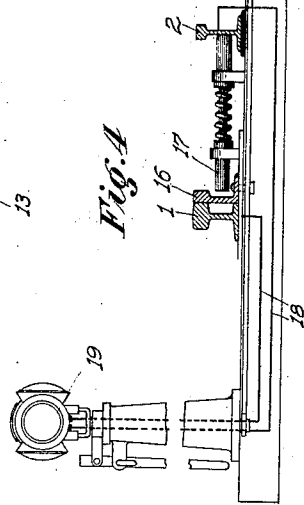
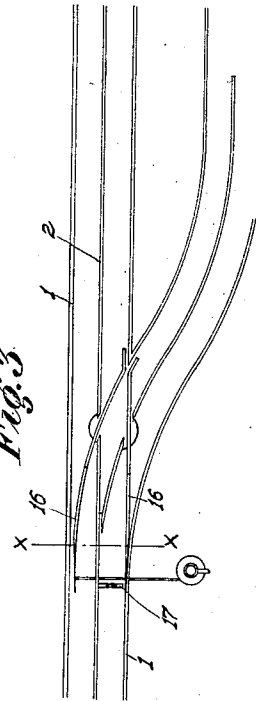


Fig. 3



Witnesses

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ELECTRIC DANGER-ALARM FOR RAILROADS.

1,033,341.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PETER W. MOSHER, a citizen of the United States, residing at Stockton, in the county of San Joaquin, State of California, have invented certain new and useful Improvements in Electric Danger-Alarms for Railways; and I do declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in railway equipment, and particularly to a means for giving an alarm when two trains are approaching each other in a manner likely to cause a collision and also to give an alarm when a train is approaching an open switch which is not supposed to be open.

The main object of the invention is to produce an electrically operated means for giving such alarm, said means consisting in a third rail or over head trolley whereby electric power may be transmitted from one train to the other and operate an alarm mechanism whenever two trains come within a predetermined distance of each other or are likely to run into an open switch.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purposes for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claim.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a top plan view of a railway showing a diagrammatic outline of two locomotives carrying my improved signal mechanism. Fig. 2 is a side elevation of an outline of a locomotive showing the improved alarm mechanism therein. Fig. 3 is a top plan view of a switch mechanism showing the application of my alarm system thereon. Fig. 4 is a sectional view of the same, showing the alarm mechanism and a signal post.

Referring now more particularly to the

characters of reference on the drawings, 1 designates the rails of a railway and 2 a third rail disposed intermediate thereon (or an over head trolley may be used as may be found most desirable), which third rail is divided into a series of sections of predetermined length separated at certain points as at 3. In the cab of each engine is located a storage battery or other suitable battery 4, connected by a wire 5 and a spring shoe 6 at one of the axles 7 of the locomotive and by a wire 8 with an alarm bell 9 and by a subsidiary wire 10 with an electric light 11, there being a wire 12 running from said electric wire and bell to a spring operated shoe 13 adapted to ride on said third rail at a point near the front of the locomotive.

In practice when two locomotives get on one of the sections of the third rail 2 at the same time, then a circuit is completed from one of the batteries 4 through the wire 5, shoe 6, axle 7, through the third rail 2 to the shoe 13 of the other locomotive, back through the wire 12 of such last named locomotive, through the bell and light to the storage battery, thus forming a circuit, which rings the bell and lights the light, thus giving both a visible and audible alarm to the engineer or fireman or both. By the use of the commonly used block system if the engineer or fireman or both happen to be occupied with their duties at the time the signal was set, this would prevent their seeing the same. By the use of improved structure however, the audible alarm would call their attention to the danger whether or not they were occupied with their duties.

In order that two locomotives might not approach each other head on to a point too close to a division of a section, as at 3, I provide an auxiliary rail 14 at approximately a quarter mile at each side of said division point 3, and connect the same by a wire 15 with the next adjacent section, whereby a signal will be given of trains approaching head on at a sufficient distance in order to enable them to stop in time to avoid a collision.

In the case of a switch rail 16, I provide a spring pressed pin 17 against which said switch rail will impinge when the same is turned open, such spring pressed pin 17 contacting with the third rail 2 whereby when the switch is open a circuit will be completed through the bell and light of the

approaching locomotive and a signal given. Also I provide a wire connection 18 between the third rail 2, and the switch light 19, whereby when the switch is opened the light will be lighted, and thus give a visible signal of the open switch on the switch post as well as giving the visible and audible signal in the cab of the locomotive

In using my improved third rail electric alarm mechanism, no hand or push cars used on the railway need be insulated as is the case with the present block system, for the reason that they will not make any connection or circuit with any approaching train, for the reason that they will not be equipped with my improved structure. Another advantage of the third rail is that it will be to hold trains on the grade in case of derailment, since it will act as a guard rail in that respect. Also the third rail will act to hold the track in alignment and will permit of the main rails being laid with the joints in square alignment, which will lessen the lateral motion of the train now due to passing over the rail joints laid in alternate order. In case of the train being derailed, the engineer then can connect a wire from my improved apparatus to the rails and thus give an approaching train equipped with my apparatus, a signal of the danger. The space 3 between the sections of the third rail may be an open space or formed of any insulating material, such as wood, paper or rubber or the like.

From the foregoing description it will readily appear that I have produced such a

device as substantially fulfils the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such details may be resorted to as do not form a departure from the spirit of the invention.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:—

An electric alarm system for railways comprising the combination with a railway and a locomotive mounted on said railway, of a third rail divided into sections of predetermined length, an auxiliary rail spaced a distance from each end of each section, a wire connecting each auxiliary rail with the rail adjacent to the rail along the side of which the auxiliary rail is disposed, a spring pressed shoe carried by said locomotive and adapted to ride on said third rail and said auxiliary rails, an alarm in said locomotive, a source of electric energy on said locomotive, a wire connecting said shoe and said alarm, a wire connecting said alarm and said source of electric energy, and a wire connecting said source of electric energy and one of the axles of said locomotive, as described.

In testimony whereof I affix my signature in presence of two witnesses.

PETER W. MOSHEK.

Witnesses:

JOSHUA B. WEBSTER,
FRANK H. CARTER.