(No Model.)

P. F. GIVEN.

SAFETY GUARD FOR RAILWAYS.

No. 265,958. Patented Oct. 17, 1882.

Fig. 1.

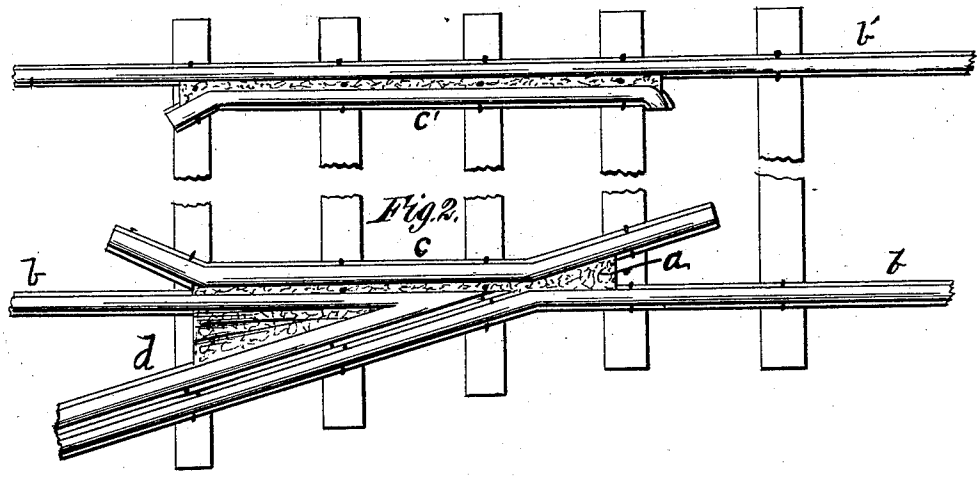


Fig. 6.

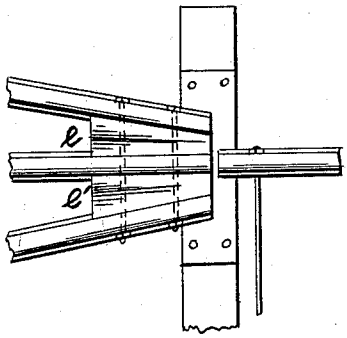


Fig. 4.

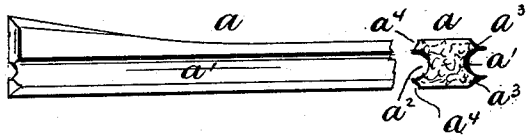


Fig. 5.

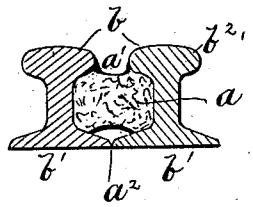
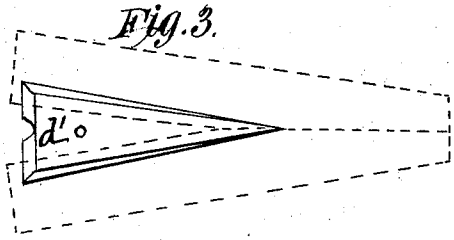


Fig. 3.



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UNITED STATES PATENT OFFICE.

PHILONZO F. GIVEN, OF CEDAR RAPIDS, IOWA.

SAFETY-GUARD FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 265,958, dated October 17, 1882.

Application filed November 15, 1881. (No model.)

To all whom it may concern:

Be it known that I, PHILONZO F. GIVEN, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Safety-Guards for Railways; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention has for its object to furnish an improved guard for railway frogs and switches, by which the feet of the workmen and other persons will be prevented from getting caught and held between the close-lying ends of the rails.

This invention consists in a reversible elastic cushion, made preferably of rubber, inserted between the closely-contiguous rails of a railway-frog, or between a guard-rail and the main rail, the said cushion being made thinnest along its middle longitudinal line equidistant from the said rails, and then gradually thickened on both its upper and under faces outwardly from said middle line to the points where it comes in contact with the outer edges of the heads and with the upper faces of the feet or bases of said rails. From these points of contact it is extended to and is firmly abutted against the adjacent vertical faces of the rails. It is thus given a firm seat, from which it cannot be easily displaced, and at the same time possesses an elasticity by which it adapts itself to the pressure of and will not be subjected to great wear or liability to injury from the passing car-wheels.

In the drawings, Figure 1 shows a portion of a railway-track provided with a guard-rail. Fig. 2 shows a frog and guard-rail. Fig. 3 shows a triangular-shaped filling-piece, and Fig. 4 is a slightly-enlarged view, showing part of a filling-piece to be placed between a guard-rail and the main rail. Fig. 5 shows a cross-section of two rails having a filling-piece between them, and Fig. 6 shows a switch having the filling-pieces between the ends of the fixed rails.

The filling-piece which I employ is constructed with longitudinal grooves on its upper and under sides for the purpose of giving it greater flexibility, so that it will yield readily when pressed by the flange of a passing car-wheel. The flanges on the wheel of different cars are not made of a uniform width from the tread of the wheel outward. The result of this is that the filling-piece will be pressed hard by one wheel, while it will receive little or no pressure from another. The ordinary safety-pieces employed are unyielding, and are soon broken and rendered useless by the action of the wider flanges on the car-wheels.

My device is made thinner at its central portions, and is gradually made thicker as it extends to the rails. At its outer edges it is carried upward in a thin lip, a projection which fits snugly to the side of the rail and close under the side of T. When thus constructed it will bend downward at its central portions along the line of the channels or grooves, whenever it is pressed at a point near the rail by the flange of the passing wheel. As soon as the pressure is removed the piece springs back to its first position, and has suffered no injury by the blow given by the flange of the wheel. The filling-piece gives good satisfaction when constructed with a single channel formed in its top surface. It gives far better satisfaction when provided with an additional channel formed in its under surface and immediately opposite the channel in the upper surface.

In the drawings the construction of my device is shown clearly in Figs. 4 and 5. *a* is a filling-piece, which is made concave in its upper and under faces, having formed in the latter the longitudinal channels a' a^2. The piece *a* fits snugly between the sides of the rails and between the bases and tops of the latter, as shown clearly in Fig. 5. It is seated firmly on the bases and fits snugly to the under side of the head or top part of the rails *b*. Each filling-piece is also provided with longitudinal lips or flanges a^3, which project upward, and are arranged to lie snugly against the sides of the rails and fill up the small space between the body of the filling-piece and the curved under faces of said rails. These lips are so formed and arranged that they extend upward just to the point where the flange of the car-wheel bears against the sides of the head b^2

of the rails, and they fill up the entire space below this point of contact, and form, with the sides of the rails, vertical walls from the said point of contact downward to the body of the said filling-piece. These longitudinal lips prevent the foot of a workman from being caught and held fast between the two adjacent rails. If the foot be pushed down between the rails and into the body of the filling-piece, the elastic lips or flanges will be outside of the sole of the shoe and the latter can easily be drawn out. In ordinary devices of this kind the small space between the rail and body of the filling-piece is left open and the soles of the shoe will catch under the head of the rail. In my device I have provided against all such accidents, and have also provided a device so constructed that it will not soon be rendered worthless by the blows of passing wheels.

In Figs. 1 and 2 I have shown the filling-piece applied to guard-rails. In Figs. 2 and 3 I have shown a triangular piece adapted to the meeting-rails composing a frog, and in Fig. 6 I show filling-pieces placed between the ends of several tracks arranged to connect with a single switch-rail. The filling-piece may be secured by bolts passed through them and the two adjacent rails, as shown in Fig. 6, or by spikes driven through them into the tie below. It will be seen that these filling-pieces, being made alike on their upper and under sides, may be reversed and adapted to different localities. The piece *a*, having wide end and placed between rails, as shown in Fig. 2, may be turned end for end and inverted, and the wider end will fit between the opposite end of the guard-rail *c* and the rail *b*, so the same piece *a* will be adapted for the space between guard-rail *c'* and rail *b'*, so the piece *d*, Fig. 1, will fit into a frog on either side of the track.

The pieces *e e'*, Fig. 6, may be used interchangeably.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination, with the track-rails and the guard-rails in a railway frog or switch, of a reversible elastic cushion having its upper and under faces alike and made with longitudinal central grooves or channels extended from end to end, and having its ends fitted snugly against the vertical faces of the adjacent rails and against the under face of the head of the rail and rested on the upper face of the foot of the rail, substantially as set forth.

In testimony whereof I affix my signature, in presence of two witnesses, on this 11th day of November, 1881.

PHILONZO F. GIVEN.

Witnesses:
J. R. KINNEY,
S. C. BEVER.