Dec. 16, 1930. H. ETHERIDGE 1,785,251

SUPPORT FOR RAILWAY RAILS

Filed Feb. 12, 1930

Fig. 1

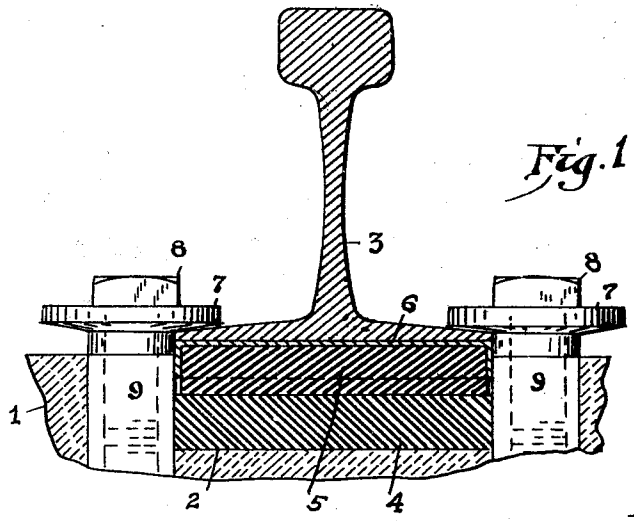


Fig. 2

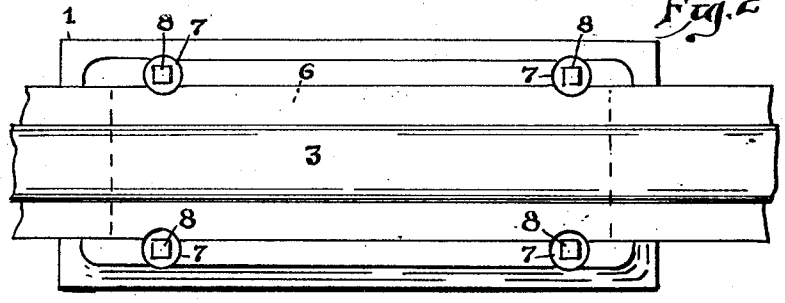


Fig. 4

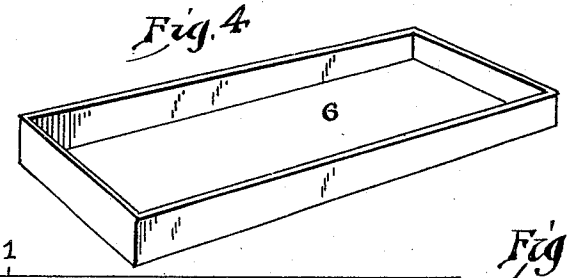
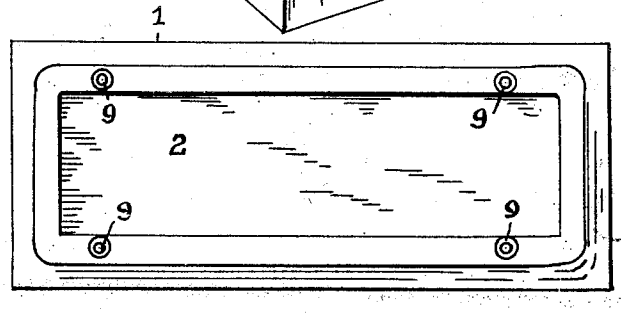


Fig. 3



INVENTOR

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UNITED STATES PATENT OFFICE

HARRY ETHERIDGE, OF ZELIENOPLE, PENNSYLVANIA

SUPPORT FOR RAILWAY RAILS

Application filed February 12, 1930. Serial No. 427,829.

More particularly my invention is intended for use in connection with rail-supports, such as railway ties and other forms of supporting means which are formed of relatively non-elastic material such as concrete and the like, although my invention may be applied with rail-supports formed of other materials.

Where rail-supports of relatively rigid material such as concrete are used, it is customary to interpose between the base of the rail and the support some sort of a cushion to prevent the hammering of the rail on the support, which would in time cause a deterioration of the support and which is jarring to the wheels of passing traffic.

Such cushions are preferably of resilient material, and are frequently formed of the composition of asphaltum, rubber and rag stock.

These cushions are mounted in the sunken seats in the rail supports and protrude upwardly therefrom so as to hold the rail out of contact with the rail-support.

I have found in practice that it is better to use a two-pad cushion, a softer and more or less elastic pad being placed in the bottom of the seat and a harder and less elastic pad being superimposed on the bottom pad and protruding upwardly above the surface of the support sufficiently to prevent contact between the rail and the support when the rail is depressed under passing traffic.

My use in railway practice of cushion pads extending over a period of years, demonstrates their practical utility, but I have found that in very warm weather the cushion, or in the case of a two-pad cushion, the top pad, becomes softened and, as the rail is depressed by passing traffic, becomes spread laterally, thereby losing its effectiveness and permitting the rail to hammer on the rail-support.

Again the exposure of the pad to the weather eventually results in its deterioration.

The object which I have in view is the provision of means for confining and protecting the cushion to prevent its lateral spreading and also to protect it from deterioration. For this purpose I provide the exposed portion of the cushion in a suitable protective inclosure whose closed top rests upon the top of the cushion and supports the rail from below and whose sides and ends fit into and extend down within the sunken seat, thus laterally enclosing the cushion, but the inclosure being too shallow to permit its walls coming into contact with the bottom of the seat when the cushion is depressed by traffic. The inclosure thus seals the cushion and protects it and prevents it from lateral spread.

In the case of a two-pad cushion the sides of the inclosure may and preferably do enclose the top pad, which latter is of proper dimensions to fit within the inclosure while the bottom pad is of full dimensions for the recess.

In the accompanying drawing, wherein I have illustrated a practical embodiment of the principles of my invention, Fig. 1 is an incomplete cross sectional view showing a rail mounted on a rail-support and my improved cushion construction interposed between them.

Fig. 2 is a plan view of the same on smaller scale.

Fig. 3 is a plan view of one of the rail supports with the rail and cushion removed.

Fig. 4 is an inverted perspective of the inclosure.

Referring to the drawings, 1 represents the rail support. In the specific embodiment shown in the invention this support comprises a concrete block extended longitudinally of the rail, but it will be understood that my invention may be applied to any form of rail-support, such for instance as cross ties. The upper surface of the rail-support is provided with a sunken seat 2 which is located beneath the position of the rail and which in the case of the support shown in the drawings is elongated longitudinally of the support. The seat is preferably rectangular.

In the seat is stepped the resilient cushion which supports the base of the rail 3 in such manner that the rail base does not come into contact with the support 1 even when the rail is depressed under passing traffic.

The cushion shown in the drawings com-

prises two pads, a lower pad 4 which is placed in the bottom of the seat and an upper pad 5 which rests upon the pad 4 and is of sufficient thickness to protrude for the required extent from the seat.

I have found in practice that the best material for these pads is a composition of asphaltum, rubber and rag stock, and that a better result may be obtained by making the bottom pad softer and more elastic than the top pad.

6 represents the device which I employ to confine, seal and protect the cushion. It comprises a metal box-like inclosure which can be made of galvanized sheet iron or other suitable material and which is inverted and placed down over the cushion, the inclosure being of proper dimensions to fit into the seat and its walls being of proper height so as to prevent contact between said walls and the bottom of the seat even when the cushion is depressed by passing traffic.

Where the cushion is of two-pad character, the inclosure may be deep enough to contain the top pad, and when the cushion comprises a single pad the inclosure is only of sufficient depth to permit its walls to extend part way down the pad. The top of the inclosure forms a chair or plate under the base of the rail.

The rail may be fastened to the rail-support by any convenient means. Thus I have shown the form of rail fastener which is the subject matter of Letters Patent No. 1,586,617, issued to me on June 1, 1926, wherein rail clamps 7 engage the base of the rail and are held in place by bolts 8 which are screwed down into threaded socket members 9 which are embedded in the material of the rail support.

It is evident that the metal inclosure will confine and seal the cushion so that when softened by high temperatures it will not spread out and lose its efficiency but the material of the cushion will be confined within the inclosure and the seat. It is further evident that the material of the cushion will be protected from atmosphere and thus will not be subject to deterioration.

It is also evident that the top of the inclosure acts as a rail plate, projecting the top of the cushion from cutting or injury by the rail. Without this protection when the cushion becomes softened by high temperatures the rail would tend to bear down into the cushion, thereby reducing its effective thickness and causing the rail base to hammer on the support.

What I desire to claim is:—

1. In railway track construction, the combination with a rail support extending beneath the rail and longitudinally thereof and having formed in its upper surface a seat extending longitudinally of the rail support and beneath the position of the base of the rail and means carried by the support and engaging the sides of the base of the rail to prevent lateral displacement of the rail but permitting a limited vertical movement, of a resilient pad stepped in said seat and extending sufficiently above the top surface of the support to at all times hold the rail out of contact with the support, and an inverted metal box having its bottom interposed between the rail base and the top of the pad and having its sides extending down into the seat and having a sliding fit with the walls of the seat, the upper portion of the pad being inclosed by the box.

2. In railway track construction, the combination with a concrete rail support extending beneath the rail and longitudinally thereof and having formed in its upper surface a seat extending longitudinally of the rail support and beneath the position of the base of the rail and means carried by the support and engaging the sides of the base of the rail to prevent lateral displacement of the rail but permitting a limited vertical movement, of a resilient pad stepped in said seat and extending sufficiently above the top surface of the support to at all times hold the rail out of contact with the support, and an inverted metal box having its bottom interposed between the rail base and the top of the pad and having its sides extending down into the seat and having a sliding fit with the walls of the seat, the upper portion of the pad being inclosed by the box.

Signed at Pittsburgh, Pa., this 10th day of February 1930.

HARRY ETHERIDGE.