

UNITED STATES PATENT OFFICE.

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RAIL-FASTENING CONSTRUCTION.

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My invention relates to a rail fastening construction.

One of the objects of my invention is to provide a rail fastener which will have great strength and durability to enable it to withstand the rough usage to which such fasteners are subjected.

A further object is to provide a rail fastener which will contribute to safety of travel by preventing rail spreading.

A further object is to provide a rail fastener which will be cheap to manufacture and install.

A further object is to provide a construction which will not require the use of skilled labor in installation.

A further object is to provide a construction which will facilitate the repair or replacement of the rails, plates, shims, or cushions resting on the base member without disturbing the base member.

A further object of my invention is to provide a rail fastener which will lengthen the life of the rail and prevent rail creeping by holding the rail absolutely tight to the base member.

A further object of my invention is to provide a fastener which will permit the use of cushions, plates or shims under the rails for giving resiliency to the track.

A further object is to provide a fastener which can be used with any size or weight of rail.

A further object of my invention is to provide a simple, strong, and economical rail guide or guides to be used in any base or foundation for railroad rails.

Further objects will appear from the description and claims.

In the drawings, in which several embodiments of my invention are shown,

Figure 1 is a vertical transverse section showing a pair of fasteners holding the rail in place on the base member such as a tie or slab;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a section showing a slightly different form of fastening member.

Fig. 4 is a vertical section showing still another form of fastening construction.

Fig. 5 is a vertical section showing a different form of recess or opening in the base member, and

Fig. 6 is a section on the line 6—6 of Fig. 5.

Referring to the drawings in detail, and first to Figs. 1 and 2, the construction shown therein comprises a foundation or base member 1 (which in the form shown may be a concrete tie, but which might be a concrete slab, or a wooden tie, or any other suitable form of foundation or base member), a rail 2 secured to this base or foundation member, and a pair of fastening members 3 which extend into recesses or openings 4 in the foundation member and which are secured in these openings by pouring molten metal 5 into the recesses around the fastening members which solidifies and securely holds the fastening members in the holes or recesses with the heads 6 of the fastening members snugly engaging the lower flanges 7 of the rail, thus absolutely preventing any spreading or creeping of the rails. Before pouring the molten metal into the holes around the openings, the holes may be partially filled with dirt, sand, or any other convenient material 8 to prevent the molten metal from running through and to avoid using more molten metal than is necessary. This molten metal may be lead or any other suitable material which can be readily handled and which will have the desired quality of securely holding the anchor members in place. It is desirable that the holes in the concrete base or foundation member should taper upwardly so that when the molten metal solidifies it will be in effect a sort of wedge, the smaller end being uppermost so that it is absolutely prevented from being pulled upwardly or pulled out of the opening in the base, or pushed sideways, this construction thus absolutely preventing endwise movement of the rail (creeping) and also absolutely preventing sideways movement of the rail (spreading).

A shim or plate 9 of any suitable non-metallic material such as wood, fiber, or other rubber-like or cushioning material, is provided between the lower flange of the rail and the foundation member if the base member is of concrete or metal. If a wood tie is used a metal plate might be used.

The construction shown in Fig. 3 is substantially the same as that shown in Fig. 1 except that here the upper end of the fastening member is threaded for a clamping nut

10 which may be screwed down on the split lock washer 11 which engages the flange of the rail. If necessary or desirable a cotter pin 12 may be provided for preventing the nut from unscrewing.

The construction shown in Fig. 4 is substantially the same as that described in connection with Fig. 1, except that here the hole in the cement base, instead of being tapered, is enlarged at the bottom so that the molten metal when solidified forms a sort of collar 13 around the enlarged head 14 of the fastening member, thus forming a firm, strong anchorage.

15 The construction shown in Figs. 5 and 6 is substantially the same as that shown in Figs. 1 and 2 except that the hole is rectangular in cross-section, thereby preventing any possibility of the solidified metal twisting or turning and thus becoming loose in the hole in the base.

It will be seen that this construction provides a rail fastener which has great strength and durability and one which will effectually hold the rail to prevent it from spreading or creeping. It will furthermore be noted that the construction is such that it can be readily installed without the use of skilled labor, as it involves simply positioning the parts and pouring in the molten metal.

It will furthermore be seen that the construction facilitates repair or replacement of the rails since if it is desired to remove the

35 rail the head of the fastener can be twisted off or cut off with a blow-torch and the shank of the fastener with the surrounding metal can be driven down through the tie far enough into the ground to permit a new fastener to be inserted into proper position in the hole. If the poured metal sticks in the hole so that it is hard to drive out, it can readily be removed by melting.

40 While I have shown several embodiments of my invention it is obvious that it may be embodied in other forms covered and defined by the appended claims.

I claim:

1. A method of securing a rail to a base member comprising forming a recess in said base member, inserting a fastener into said recess in position to hold the rail on said base member, and pouring a moldable material into said recess around said fastener whereby when the said material hardens it will hold the fastener in the recess.

2. A rail fastening construction comprising a base member having a recess therein, a rail supported on said base member; a rail fastener for holding the rail on the base member, said fastener having an enlargement in said recess and poured metal in said recess around said enlargement for holding the fastener in the recess.

65 In witness whereof, I have hereunto subscribed my name.

WILLIAM COOK.