

WILLIAM FOSTER.

Improvement in Railway-Rail and Chair.

No. 127,860.

Patented June 11, 1872.

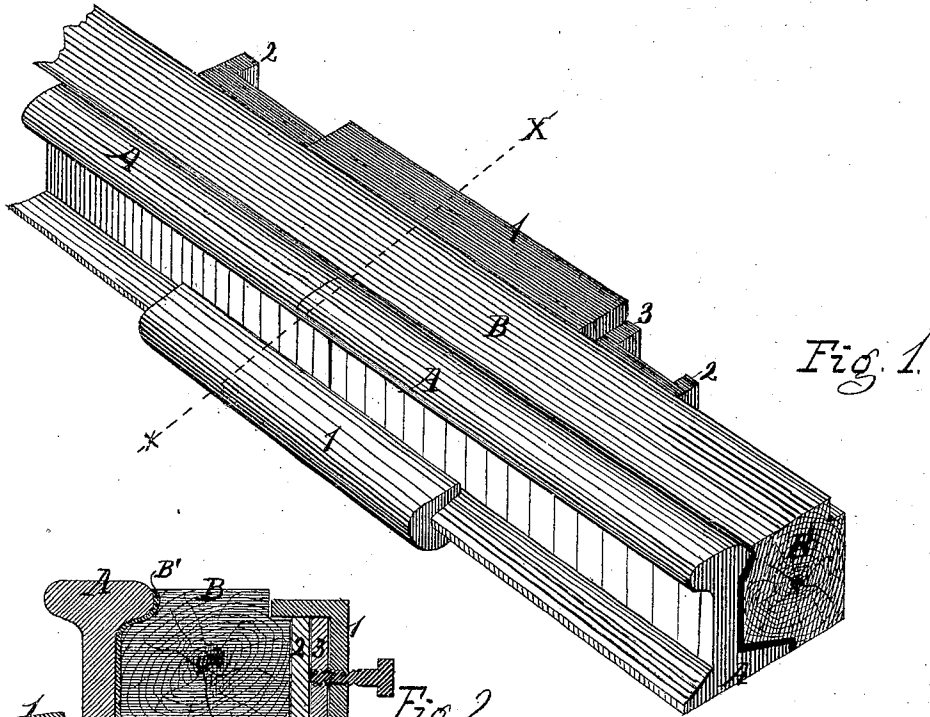


Fig. 1.

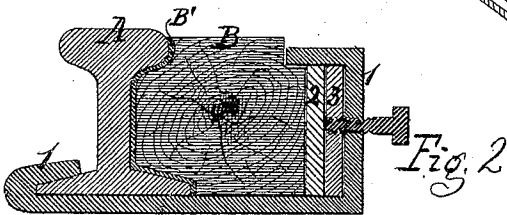


Fig. 2.

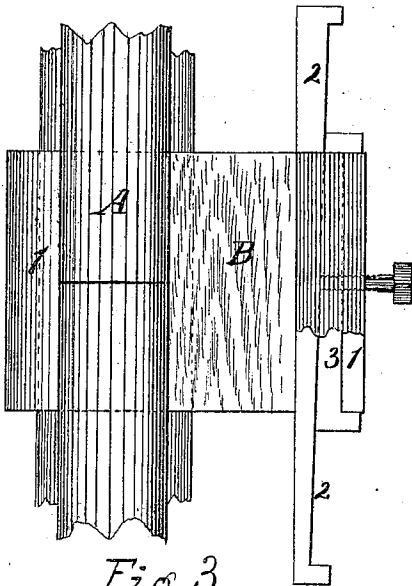


Fig. 3.

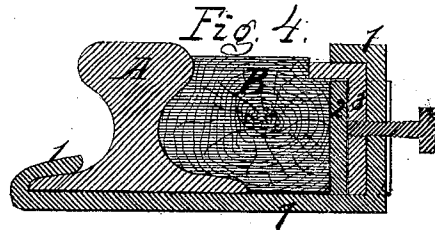


Fig. 4.

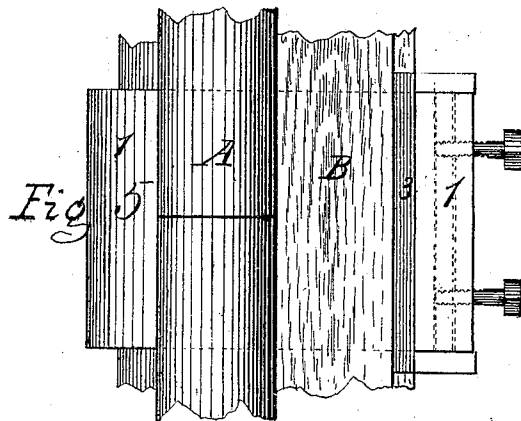


Fig. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM FOSTER, OF GOODLAND, INDIANA.

IMPROVEMENT IN RAILWAY RAILS AND CHAIRS.

Specification forming part of Letters Patent No. 127,860, dated June 11, 1872.

Specification describing certain Improvements in the Superstructure of Railroads, invented by WILLIAM FOSTER, of Goodland, county of Newton, and State of Indiana.

Figure 1 is a perspective view, showing a portion of two rails of ordinary construction, a safety-rail of wood, an elastic substance which is placed between the iron and wooden rails, and a chair of peculiar construction. Fig. 2 is a sectional elevation through the line *x x* of Fig. 1, showing the clamp, the gib, and the key, and showing, also, one of the iron rails, the wooden rail, and the elastic substance between them, the rails being in position and the chair secured to them. Fig. 3 is a plan view of the chair with portions of the rails, and showing, also, how a set-screw may be used to hold the key in position. Fig. 4 is a sectional elevation, showing a modification of the chair and of the rails, they being shown as without the elastic substance between them, and the clamping device as having in it two plates held in position by set-screws alone; and Fig. 5 is a plan view of the modified clamp and rails, showing the position of the parts.

Corresponding letters of reference in the several figures refer to like parts.

It is well known that radical defects exist in the rails of which railroads are composed, and also in the fastenings with which the joints or ends of such rails are secured in position; and the object of this improvement is to provide a remedy for such defects by providing a support for the entire length of the rails, which shall, to a great extent, protect them from the lateral strain put upon them by the passage of the trains, and at the same time to protect the ends of the iron rails from lamination, the two, when united, forming what may be termed a continuous safety-rail, the parts of novelty in which will be more fully described hereinafter.

In constructing rails and fastenings of this type I use any approved form of iron rails A, which may be of any length usual for such rails. These rails are to be slotted for the reception of the spikes, such slots being far enough from the ends of the rails to admit of the application of the chairs. Upon the outside of the rails A there is placed a safety or strengthening rail, B, of wood by preference, but which may be of metal, if preferred,

its inner surface being made to fit the outer surface of the rail A, its lower surface resting upon the chair or fastening soon to be described, its outer surface being pressed upon by a key, as shown in Fig. 1 of the drawing, or by a plate of metal held in position by screws, as shown in Fig. 5. The additional rail should extend the entire length of the iron or usual rail, its joints, or the place where two are united, being at some point between where the iron rails are joined, one of the chairs or fastenings being used for holding the ends of the wooden rails and for keeping both rails in close contact with each other. For the purpose of providing an elastic surface for the outer surface of the iron rail to bear against, a sheet of rubber, B', or of some other elastic substance, may be placed between the two rails, as shown, so that the iron rail may be allowed to spring slightly in its bed as the lateral strain is put upon it. This elastic substance may, however, be dispensed with and the surfaces of the two rails be allowed to come in contact with each other, as shown in Fig. 4. The office of the additional rails B being to provide additional safety as well as strength, their upper surfaces are made to come up nearly to the upper surface of the iron rails, so that if any of the wheels of a passing train should be thrown from the iron rails the flanges of the wheels would penetrate the wood to some extent, and thus be guided along upon the surface of such rail, and not allowed to fall down upon the ties, and thus preventing accidents, which are of frequent occurrence. One important advantage resulting from the use of this kind of rail, or of the combination of the two rails, is that a lighter iron rail may be used, and yet the required amount of strength, both vertically and horizontally, be present. For the purpose of properly uniting these rails, and also for forming the proper supports of the ends of the iron rails, I provide a clamp or chair, 1, which consists of a plate of metal of the required length and thickness, and which may be either of cast or wrought metal, its under portion being curved on one side, as shown in Figs. 2 and 4, to allow it to take a firm hold upon the base of the rail, while from this curved portion it extends outward under the lower surface of both rails far enough to allow said rails to be placed

therein, and then upward, and then inward far enough to cause its projecting lip to fit into a rabbet formed upon the outer upper edge of the wooden rail. Into the recess formed in the clamp or chair 1 there is fitted a gib, 3, as shown in Fig. 1, or a plate of metal, as shown in Fig. 4, and between it and the outer surface of the wooden rail a key for the purpose of tightening the parts; or it may be another plate of metal held by set-screws, both methods being shown in the figures last named.

It is presumed that when the key is used it will be held in position and prevented from working loose by its contact with the wooden rail, and especially when the elastic material used between it and the iron rail, and that all that will be required will be for the proper person, when it becomes necessary to tighten up the joint, to drive up the key; but should it be found that the key should work loose as a consequence of the jar caused by the passage of trains, then a set-screw may be used, as shown in Figs. 2 and 3.

Having thus described my improvement and one modification thereof, I wish to say that I do not confine myself to the particular form of the parts of which it is composed, as it may be varied to suit them to different constructions without changing the character of the invention; or the chair or fastening may be

used with equal advantage without the continuous wooden rail, and in places where said wooden rail constitutes splice-pieces only.

I do not now propose to claim, broadly, a wooden safety-rail extending the entire length of the iron rails, as I have been made aware that this feature is described in a rejected application on file in the Patent Office. The wooden rail there shown is perforated at intervals for the reception of bolts, by which it is secured to the iron rail. My safety-rail differs from that one in leaving the wood intact, without perforations, which must necessarily weaken it.

What I claim, and desire to secure by Letters Patent, is—

The combination of the clamp or chair 1, the rail B, and the rails A A with or without the intervening elastic material B', the gib and key or other equivalents being arranged to press upon the outer surface of the rail B, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM FOSTER.

Witnesses:

D. P. HOLLOWAY,
B. EDW. J. EILS.