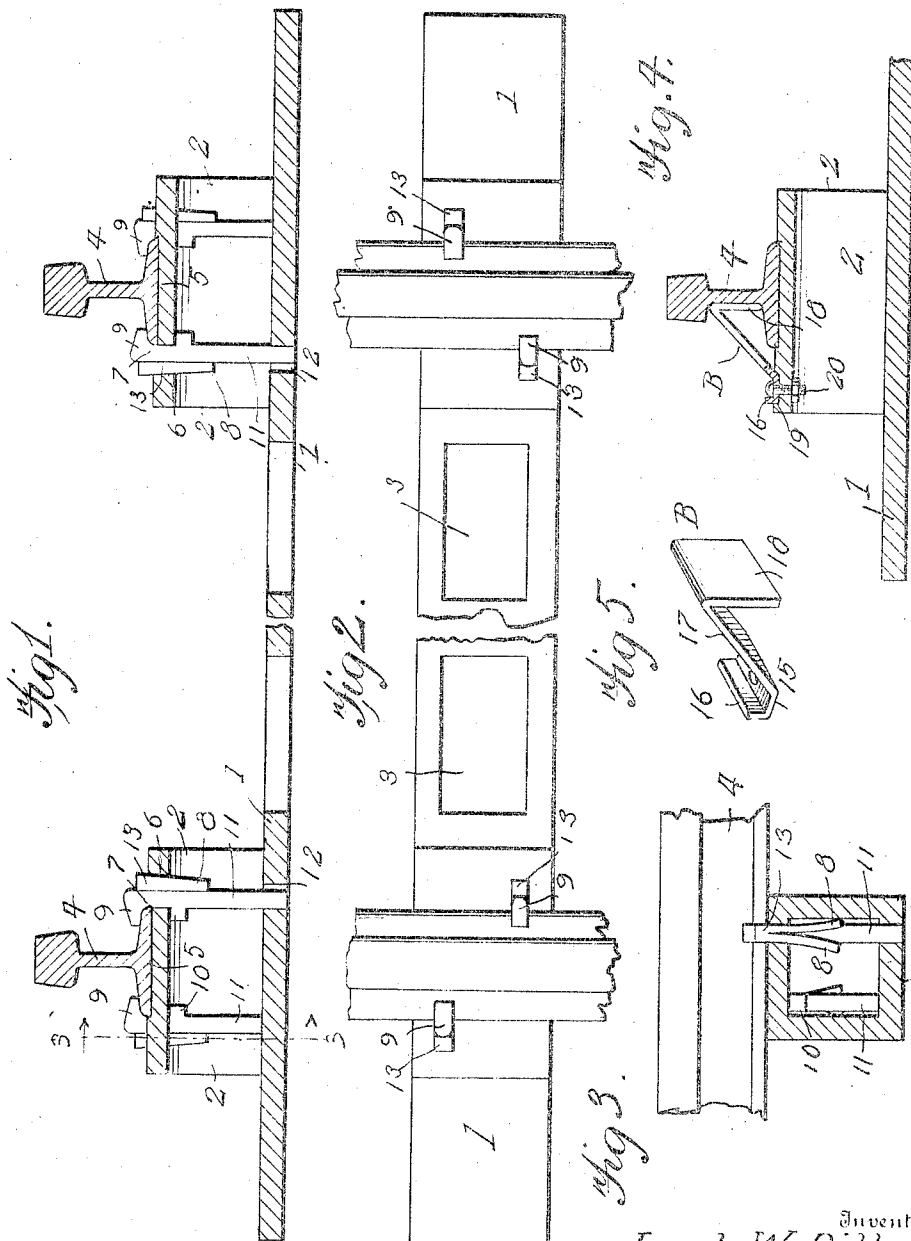


J. W. BILLER.
RAILROAD TIE.
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901,870.

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RAILROAD-TIE.

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To all whom it may concern:

Be it known that I, JACOB W. BILLER, a citizen of the United States of America, residing at Summit Point, in the county of Jefferson and State of West Virginia, have invented new and useful Improvements in Railroad-Ties, of which the following is a specification.

This invention relates to railroad ties, and it has for its object to provide a metallic railroad tie of simple and improved construction which shall be thoroughly efficient for the purpose of retaining the rails supported thereon and in proper position without danger of displacement.

A further object of the invention is to provide a construction whereby the rails will be supported in such a manner as to positively avoid the possibility of the heads of the spikes or securing members being shorn off by the tendency of the rails to lateral movement in an outward direction; a still further object of the invention is to provide improved fastening means for securing the rails in position in such a manner that they may be readily removed and replaced, when required; a still further object of the invention is to provide an improved bracing device adapted to be used in places where the rails are subject to special stress or strain in an outward direction, as upon short or sharp curves.

Further objects of the invention are to simplify and improve the construction and operation of this class of devices.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawing has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the invention may be resorted to when desired.

In the drawing, Figure 1 is a longitudinal vertical sectional view of a metallic railroad tie constructed in accordance with the invention, and showing also the rails supported thereon. Fig. 2 is a top plan view of the

same. Fig. 3 is a transverse sectional view taken on the plane indicated by the line 3—3 in Fig. 1. Fig. 4 is a longitudinal sectional detail view taken through one end of the tie and illustrating the brace used in connection with the invention. Fig. 5 is a perspective detail view showing the brace member detached.

Corresponding parts in the several figures are denoted by like characters of reference.

The improved metallic railroad tie in its preferred form consists of a casting comprising a base plate 1, which is preferably of a length approximately equal to that of the cross ties ordinarily employed; said base being provided adjacent to the ends thereof with upwardly extending approximately rectangular sleeves 2, 2 of suitable dimensions. The base 1 may be provided with openings or apertures 3 for the purpose of reducing the weight and lessening the expense of material.

The sleeves 2, 2, upon which the rails 4 are supported, are provided in their upper sides with transverse recesses 5 constituting seats in which the bottom flanges of the rails are fitted and supported. The rails will thus be held in perfect alinement with absolute certainty, and lateral displacement of the rails, and consequent danger of injury to the fastening members whereby the rails are held in position will be positively prevented.

The sleeves 2 are provided adjacent to the rail seats 5 with slots or apertures 6 for the passage of the fastening members, which latter include the holders 7 and the keys or wedges 13, having narrowed terminals 8. The holders 7 are provided at their upper ends with heads 9 adapted to engage the foot flange of the rail; said holders are also provided near their upper ends with laterally extending lugs 10 adapted to catch beneath the upper portions of the sleeves, thus serving to bind the rails securely in position. The lower extremities of the shanks of the holders are extended through slots or apertures 12 formed in the base plate 1 in registry with the slots 6.

The slots or apertures 6 are sufficiently large for the passage not only of the holders 7, but also of the fastening members 13 which are driven adjacent to the holders; said fastening members consisting of split keys or wedges, which, after being driven, are operated upon by means of cold chisels or other suitable tools, whereby the limbs of

said wedges are spread or forced apart, as will be clearly seen in Fig. 3 of the drawing, so as to make it impossible for said fastening members to be accidentally displaced or lost. It will be readily seen that the lower extremities of the fastening members 13 are readily accessible through the open ends of the sleeves 2, thus enabling said fastening members to be very readily operated upon for the purpose of securing them in position or for the purpose of detaching, when desired.

It will be readily seen that by means of the wedge-shaped fastening members 13 the holders 7 are held very securely and intimately with relation to the rails, which latter are thus held very firmly and securely in position. The lower extremities of the holders 7 being entered into the slots 12 are thereby prevented from twisting or turning, and the security of the fastening device is thereby materially increased. The fastening members 13 when spread or expanded, as shown in Fig. 3 of the drawing, serve to assemble the parts of the device with perfect security, and said fastening members, when desired, may be readily compressed and removed, thus enabling the rails to be disassembled from the tie.

At certain points along the line and especially where short curves are encountered there is a pronounced tendency for the outer rail to spread in an outward direction; at such point I propose to reinforce my device by means of a brace B which is shown in detail in Fig. 5 of the drawings and which is composed of a metallic plate bent to form a foot portion 15 having at its outer edge an upstanding flange 16, said foot piece being provided at its inner edge with an obliquely disposed upwardly and inwardly extending brace portion 17 having a terminal downturned flange 18, which latter is fitted adjacent to the web of the rail, as will be clearly seen in Fig. 4 of the drawing, the foot portion 15 being seated in a recess 19 in the upper side or face of the sleeve 2, where it is secured by means of a fastening member, such as a bolt 20. This brace, which is simple and easily applied will efficiently resist any tendency of the rail adjacent to which it is placed to expand in an outyard direction.

From the foregoing description, taken in connection with the drawing hereto annexed, the operation and advantages of this invention will be readily understood by those skilled in the art to which it appertains.

The construction is simple and inexpensive, and the improved rail tie will be found extremely durable and efficient in operation.

Having thus described the invention, what is claimed as new, is:—

1. A metallic railroad tie comprising a base plate having open-ended rail-supporting sleeves provided with grooves constituting rail seats and slots adjacent the said grooves, in combination with rails fitted in the seats, holding members having heads engaging the rail flanges, and laterally extending lugs engaging the undersides of the tops of the sleeves, and fastening means for securing the holders.

2. A metallic railroad tie comprising a base plate having rail supporting sleeves provided with slots in their upper sides, the base plate being provided with apertures registering with said slots, in combination with rails supported upon the sleeves, holders having rail-engaging heads and sleeve-engaging lugs, said holders being provided with shanks extending into the apertures in the base plate, and fastening means for securing the holders in rail-engaging position.

3. A metallic railroad tie comprising a base plate having rail supporting sleeves provided with slots in their upper sides, said base plate being provided with corresponding apertures, in combination with the rails supported upon the sleeves, holders having rail engaging heads, sleeve-engaging lugs, shanks extending into the apertures of the base plate, and split keys or wedges driven adjacent to the holders.

4. In a metallic railroad tie, a base plate having open-ended rail-supporting sleeves provided with slots in their upper sides, rails supported upon the sleeves, holders engaging the slots of the sleeves and having rail-engaging heads and sleeve-engaging lugs, and fastening members consisting of split keys or wedges driven adjacent to the holders and accessible through the open ends of the sleeves.

5. A metallic railroad tie comprising a base plate having open-ended rail-supporting sleeves provided with recesses or seats at their upper sides or faces, rails supported upon the sleeves, brace members comprising foot pieces fitted in the seats of the sleeves and having inclined brace members provided with terminal downturned flanges engaging the rail webs.

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

JACOB W. BILLER.

Witnesses:

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