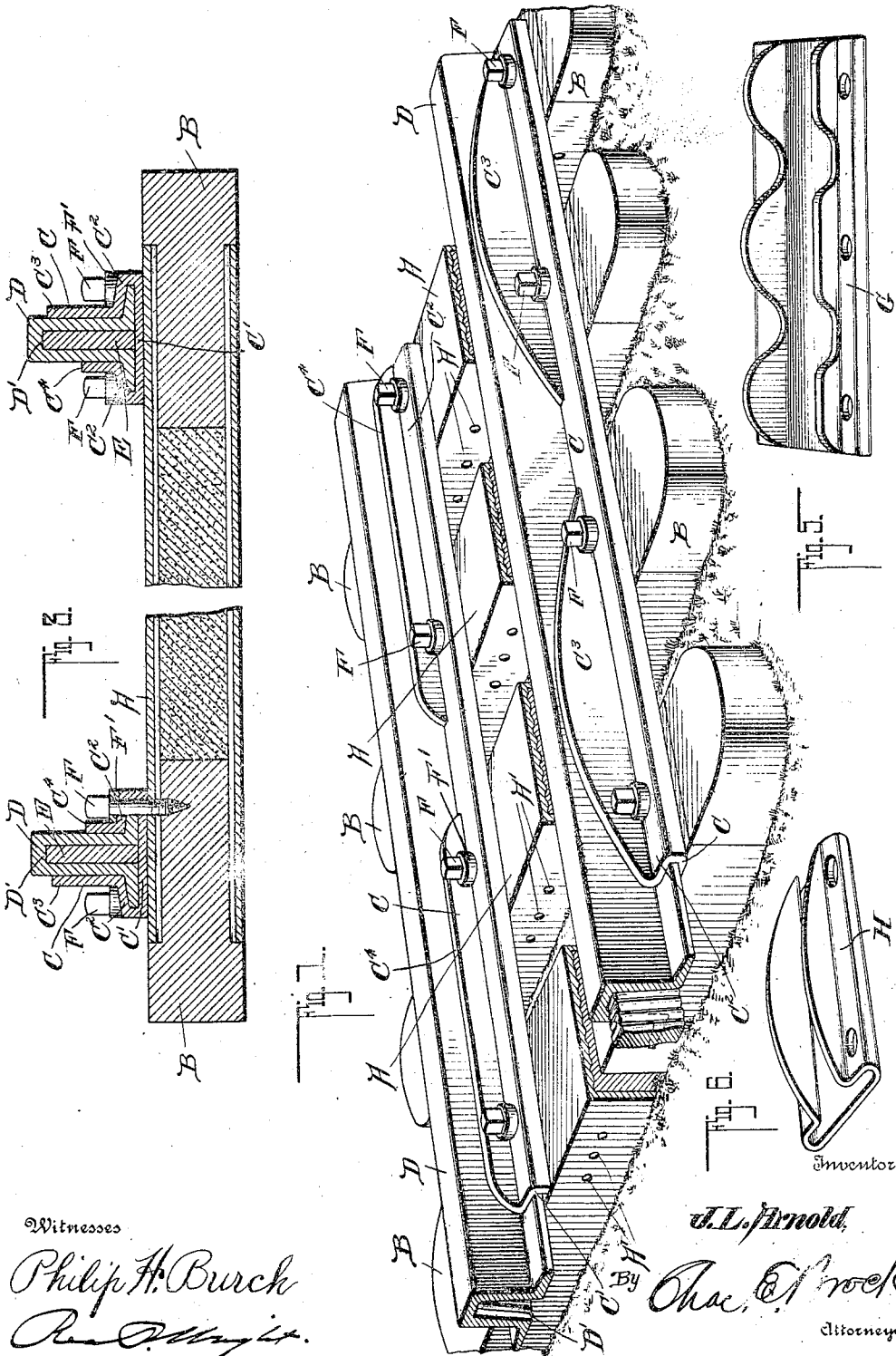


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RAILROAD RAIL, RAIL JOINT, CHAIR, AND TIE.
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Patented Aug. 8, 1911.
2 SHEETS—SHEET 1.



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RAILROAD RAIL, RAIL JOINT, CHAIR, AND TIE.

1,000,225.

Specification of Letters Patent.

Patented Aug. 8, 1911.

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To all whom it may concern:

Be it known that I, JOHN L. ARNOLD, a citizen of the United States, residing at New York city, in the county and State of New York, have invented a new and useful Improvement in a Railroad Rail, Rail Joint, Chair, and Tie, of which the following is a specification.

This invention relates to a railroad construction and has for its object to provide means for securing a rail, tie and joint more securely than other devices heretofore constructed.

Another object of my invention is to provide a hollow tie which is adapted to be filled with sand, said tie having openings formed in its sides through which the sand is adapted to pass out when the same is jolted by a train passing over so as to cause the sand to keep the tie tamped at all times.

A further object of the invention is to provide very novel means for securing the ends of the rails together whereby all danger of the ends moving laterally with respect to each other is prevented.

A still further object of my invention is to provide a hollow tie with wooden heads having plugs extending into the tie into which the fastening member of the chairs is adapted to pass.

With these various objects in view, my invention consists in the novel features of construction, arrangement and combination of parts, all of which will be hereinafter fully described, and pointed out in the claims.

In the drawings forming a part of this specification: Figure 1 is a perspective view of my improved railroad rail, rail joint, chair and tie constructed in accordance with my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a sectional view taken on the lines 3—3 of Fig. 2. Fig. 4 is a longitudinal sectional view taken on the lines 4—4 of Fig. 2. Fig. 5 is a perspective view of a modified form of chair. Fig. 6 is a perspective view of another modified form of chair.

Referring to the drawings A indicates a hollow open end metallic tie substantially rectangular in cross section having longitudinally ribbed walls in the ends of which are secured the longitudinally ribbed plug B' of wooden heads B the plug portions of the head extending into the tie under where

the rail is secured as will be hereinafter fully described. The sides of the tie are provided with spaced openings A' and the ties are adapted to be filled with fine sand so that the jolting of the ties caused by a train passing over the same will cause the sand to pass out through the openings and keep the tie tamped.

Arranged on the ties adjacent each end is a chair C' which is adapted to be of such a length that when placed upon a number of ties, it will rest upon about four and consists of a base plate C' on which the base of my improved U-shaped rail D is adapted to rest. The plate C' is provided with upwardly and inwardly projecting sides forming horizontal grooves in which the flanges of the base of the rail are adapted to fit so that the rail will be securely held therein. Extending upwardly from the inwardly projecting flanges are oval shaped bracing members C³ at each end adapted to bear against the outside of the rail D and extending upwardly from the opposite flange are bracing members C⁴ adapted to bear against the inside of the rail, the bracing member C³ being of a greater height than the member C⁴ so that the outside of the rail will be securely braced where it is most needed so that all danger of the rail twisting or spreading is prevented. A longitudinal base groove is formed in the rail throughout its length which is provided with transverse ribs so as to strengthen the same and form locking means as will be hereinafter fully described. Where the two ends of the rails meet, a locking bar is placed within the same having transverse ribs adapted to co-act with the transverse ribs formed on the inside of the rails so as to securely lock the ends together. It will be seen that by this construction it is only necessary to place a locking bar in the meeting ends of a pair of rails to securely fasten the ends together.

The chairs are secured on the ties by screw bolts F having squared heads said bolts extending through the chair and notches in the flanges of the rail and through openings in the tie into the wooden plugs. A washer F' bears against the inwardly projecting portions of the sides of the chair so as to securely hold the sides over the flange of the base of the rail whereby all danger

of the flange yielding or giving in any way is prevented and at the same time the chair is securely locked in position on the tie.

In Fig. 5, I have shown a chair G with three pair of bracing members instead of two and in Fig. 4, I have shown a chair formed with only one pair of bracing members, it of course being understood that any suitable construction of chair can be used for holding the rails with the same result, but I have found by experimenting that a chair constructed as heretofore described will securely hold the rails in position in such a manner that all danger of the rails spreading or moving in any way is prevented.

It will be seen that I have provided a hollow rail having annular ribs formed on its inner face. In the grooves formed by said ribs are adapted to fit the ribs formed on a locking bar which is placed within the meeting ends of the rails so as to securely lock the same together and it will be seen that by this construction, the meeting ends of the rails are securely locked together without the use of bolts, but it is of course understood that in use, the meeting ends will be placed on a chair which will greatly strengthen the same.

From the foregoing description, it will be seen that I have provided a railroad rail, rail joint, chair and tie which are exceedingly simple and cheap in construction and one which can be easily and quickly placed in position. It will also be seen by this construction that the rails and chair and tie will all be held in their proper position at all times without any danger of the parts becoming loose thereby overcoming the disadvantages now existing with devices of this character now in use.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A rail substantially U-shaped in cross section, a plurality of transverse ribs formed upon the under face of said rail, and a ribbed locking bar adapted to fit beneath

the meeting end portions of the rails, the ribs of the bar cooperating with those of the rails.

2. A U-shaped rail provided with a series of continuous transverse ribs upon its under face, a locking bar adapted to fit within said rail and also ribbed, and a chair adapted to receive the meeting end portions of the rails, and also to furnish a base for said bar.

3. A device of the kind described comprising a U-shaped rail having continuous vertical and transverse ribs thereupon, said ribs being upon the inner under face of the rail, a ribbed locking bar fitting within the meeting ends of the rails, and a chair adapted to inclose the rail flanges, and also forming a base for said locking bar.

4. A device of the kind described comprising a wall having a continuous longitudinal downwardly open groove, the side and top walls of said groove being provided with ribs, a chair adapted to fit the meeting ends of the rails, said chair forming a bottom for the groove, and a rib locking bar adapted to be held in the grooves of adjacent rails, said bar resting upon said chair, the ribs of the bar cooperating with those of the rails and preventing longitudinal movement of the rails with respect to each other.

5. A device of the kind described comprising a U-shaped rail the under interior face of which is provided with a series of continuous transverse ribs, a locking bar having continuous side and top ribs, said ribs being adapted to fit between the ribs of the rail, and a chair having a base adapted to form a support for said bar and to hold the same within the rail, and flanges formed upon the chair base, said flanges engaging the rail base, and one of said flanges extending inwardly and upwardly to engage a side of the rail, as and for the purpose set forth.

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