T. Yates.

Railroad Track.

No. 45,552. Patented Dec. 20, 1864.

Fig. 1.

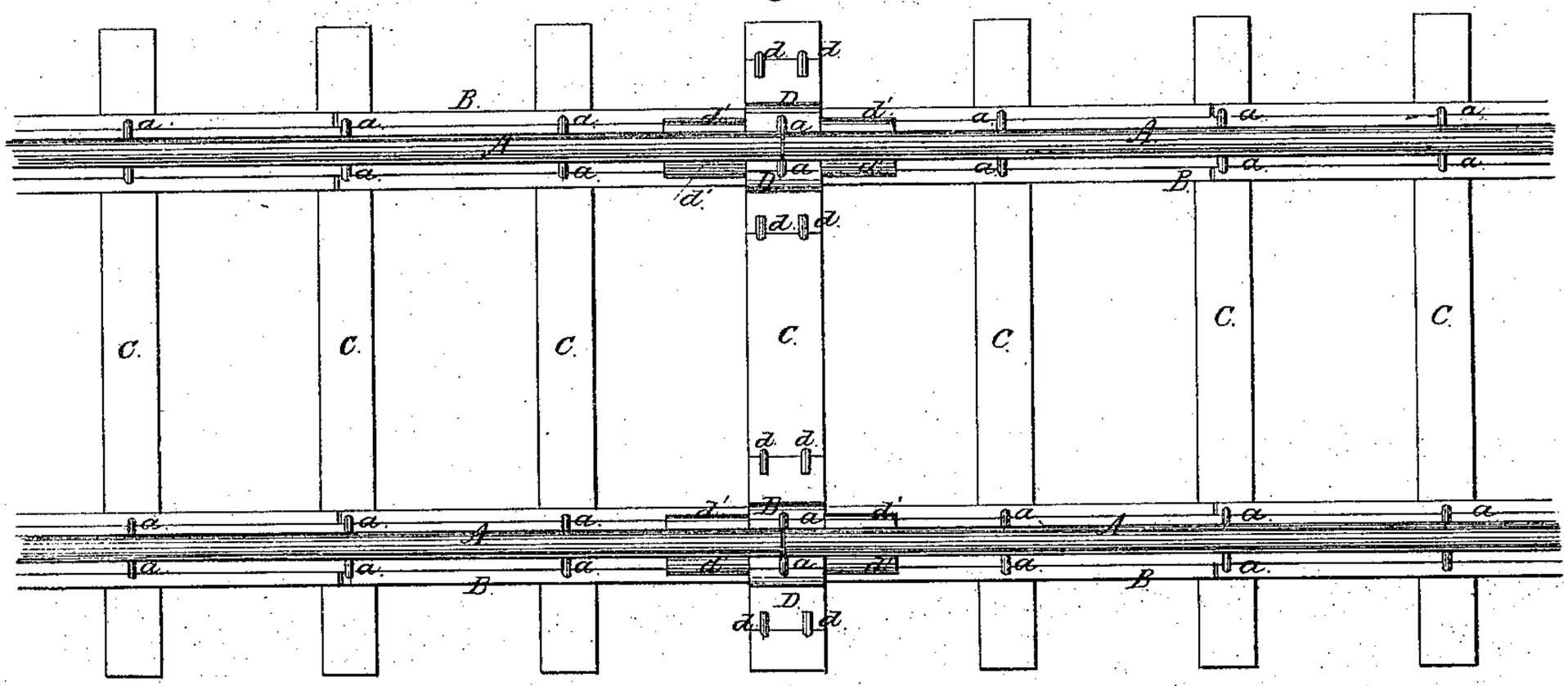


Fig. 2.

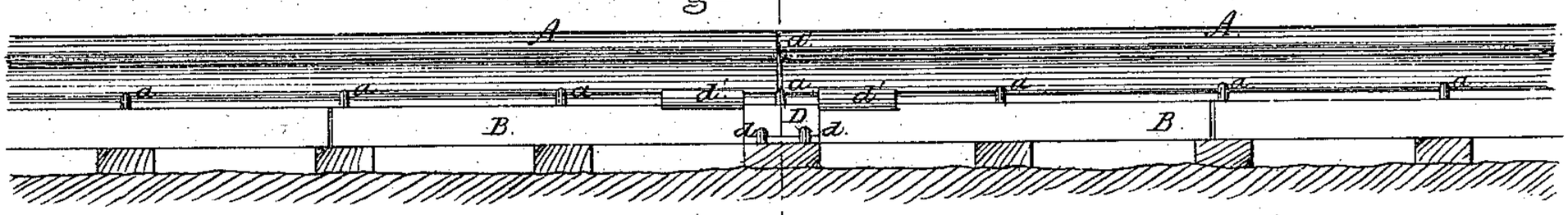


Fig. 3.

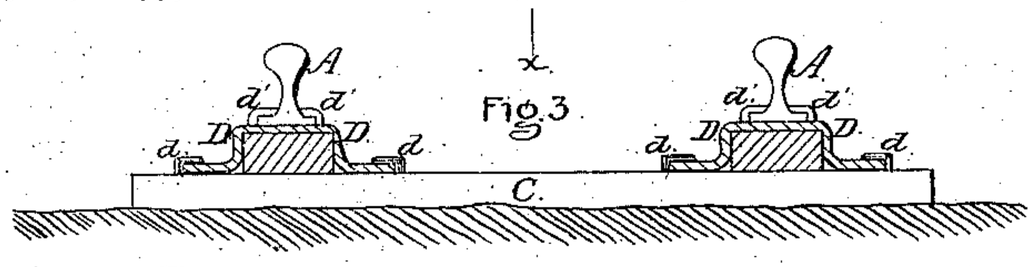
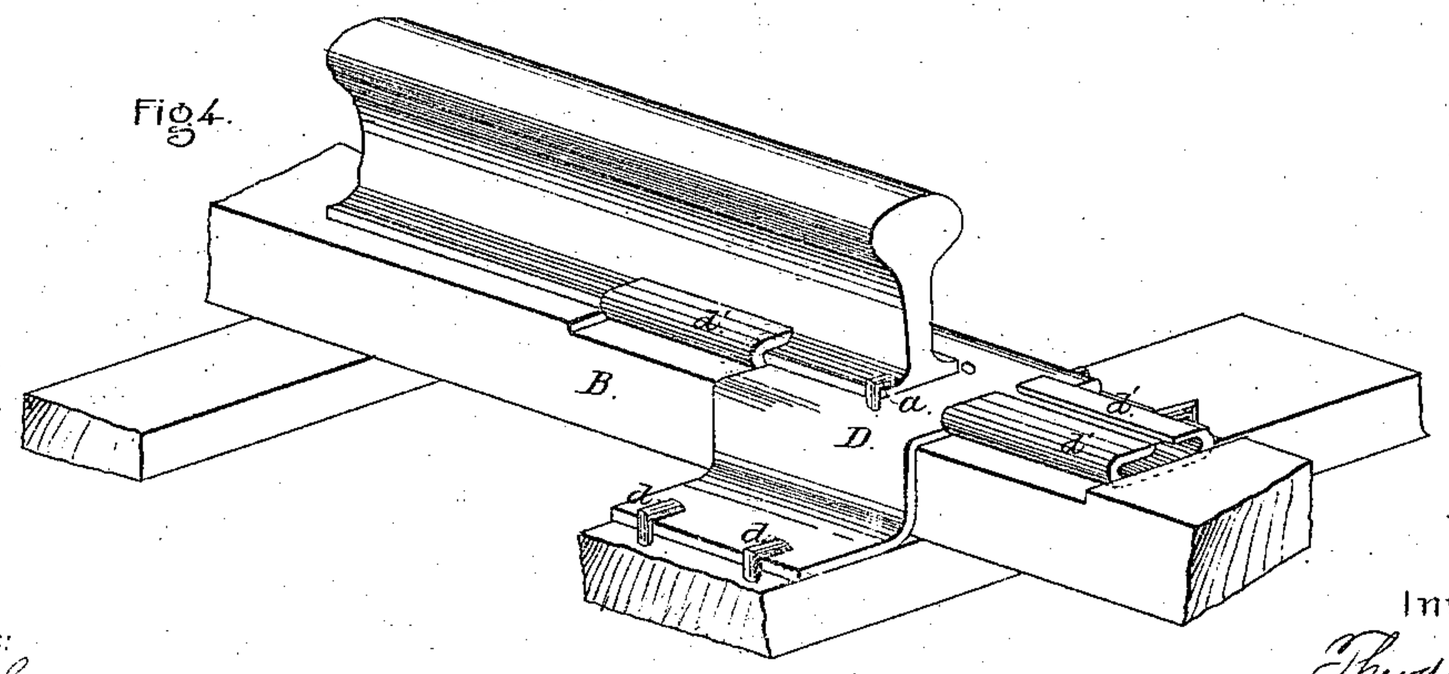


Fig. 4.



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UNITED STATES PATENT OFFICE.

THEODORE YATES, OF MILWAUKEE, WISCONSIN.

IMPROVEMENT IN CONSTRUCTION OF RAILWAYS.

Specification forming part of Letters Patent No. **45,552,** dated December 20, 1864.

To all whom it may concern:

Be it known that I, THEODORE YATES, of the city and county of Milwaukee, in the State of Wisconsin, have invented a certain new and useful Improvement in the Construction of Railways; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a top view or a railway constructed upon my improved plan. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse section in the line *x x*. Fig. 4 is a detached perspective view illustrating the manner of securing the rail and sub-rail to the ties at the joints.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a railway in which the common T-rails are so applied and secured to sub-rails or longitudinal sleepers resting upon the ties that the track is rendered more firm and durable and less liable to derangement than when laid in the ordinary manner, as will be hereinafter fully explained.

In order that others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe it.

In the accompanying drawings, A A represent the iron rails, which may be constructed in customary manner. B B are wooden sub-rails or longitudinal sleepers, upon which the rails A are fastened by hook-headed bolts *a*, and which, at points between the joints of the rails A, are securely fastened to the ties C by bolts, the sub-rails B being made of wood and of such size and shape as experience and locality may dictate. The rails A are placed upon the wooden sub rails with the joints of the former between those of the latter, in order that the rails A shall afford as firm a bearing at each joint as the intervening parts. It is apparent that the breaking of the joints in this way prevents the damage which occurs when the rails are supported directly upon the ties, or when the joints of the wooden sub-rails occur at the same points as those of the iron rails, this damage being the result of the depression of the ends of the rails upon which the cars are supported and the striking of the wheels against the ends of the adjacent rails, which are left exposed by the depression above referred to.

The repeated striking of the wheels against the ends of the rails, in the manner above alluded to, seriously impairs the wheels themselves, and splinters the ends of the rails until they are rendered totally useless, and a replacing of the sections becomes necessary.

To prevent the ends of the rails from being struck by the passing car-wheels, chairs of various kinds have been devised; but even when these are applied the rails will spring and draw the bolts or break, except the sub-rails be employed in the manner I have described.

To secure the iron and wooden rails A B to the ties C at the joints of said iron rails, and protect the sub-rails beneath said joints, I have devised a clamp, D, of peculiar construction. This clamp is formed in one piece of strong sheet or plate metal, and, embracing the top and sides of the sub-rail, is fastened to the tie beneath the joint of the rails A by bolts *d*, or otherwise.

The clamp D is formed with flanges *d'*, which, at each side of the joint *a'* and upon each side of the rails, are bent over the flanged base of each of the latter, so as to firmly connect them to the sub-rail B, upon which they rest. This method of securing the rails and sub-rails to the ties is at once simple, effectual, and attended with little expense.

The employment of the sub-rails B does not add to the expense of the track, as it is unnecessary to use in connection with them the large number of ties required when the rails rest directly upon the latter.

If one tie or more should sink in the ground when it is soft and yielding, the rails above such tie or ties are not subjected to undue strain, nor liable to break in frosty weather, inasmuch as the sub-rails B serve to distribute the weight of the passing train to the adjoining ties. No accident can result from the breaking of a rail laid according to my improved plan, for the reason that the sub-rails afford a firm bearing at all points, and the bolts *a* are located at such distance asunder as to retain the rail in place after the occurrence of the break. Other advantages are derived from the application of my invention, but it is needless to mention them in detail.

It may be here remarked that the sub-rails

may either rest upon the tops of the ties or be let into the same by dovetailing or otherwise, or they may rest upon any other suitable substratum or foundation; also that the sub-rails may, instead of being continuous, extend each about one-third (more or less) of the length of the rail-sections on each side of the joints. This construction of railroad enables me to use, successfully, an inferior quality of wrought-iron rails, or rails made of cast-iron, which can only be done by means of such continuous supports as I obtain.

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

1. The combination of the T-rail A, wooden sub-rails or longitudinal sleepers B, and the clamps or chairs D, or their several equivalents, arranged and employed substantially in the manner and for the purposes herein set forth.

2. The clamp D, constructed in one piece, as described, and employed in the described combination with the longitudinal sub-rails B, to secure the iron rails at their joints and protect the wooden sub-rails beneath said joints, as set forth.

THEO. YATES.

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