No. 801,692. PATENTED OCT. 10, 1905.

F. F. ROBERTS.

METAL RAILWAY TIE.

APPLICATION FILED JULY 3, 1905.

Fig. 1.

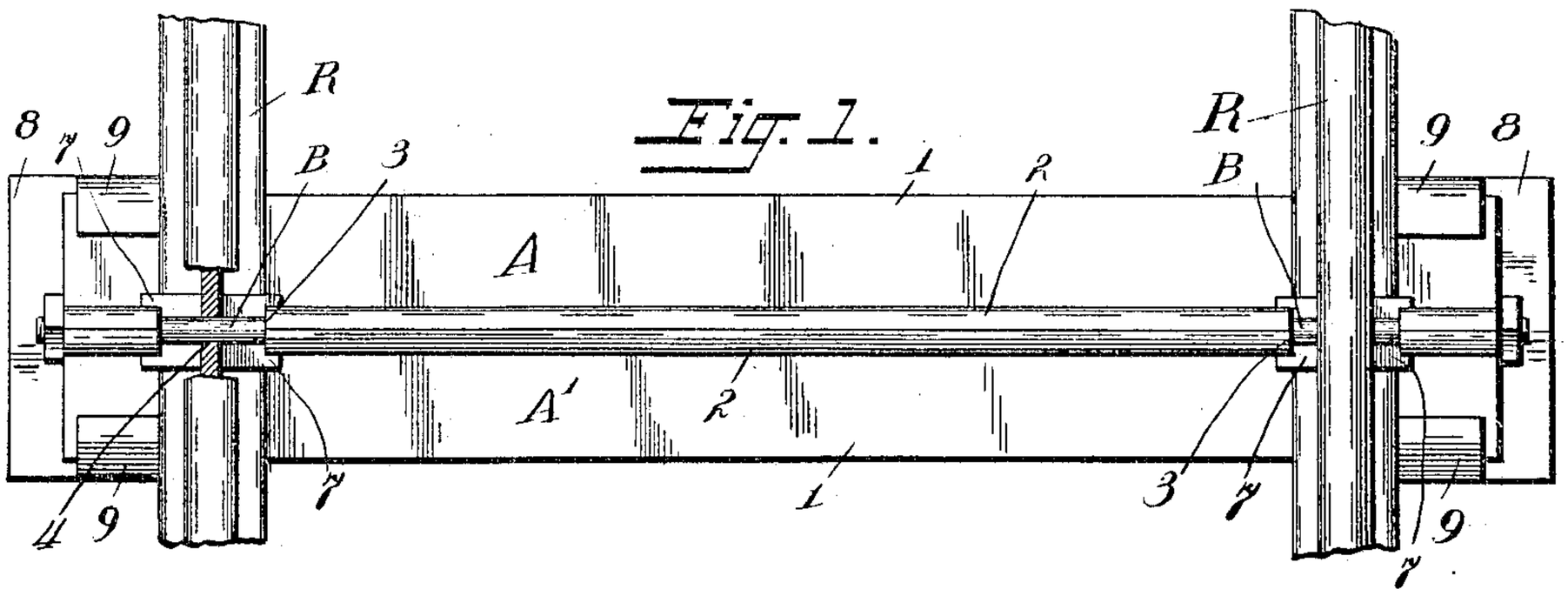


Fig. 2.

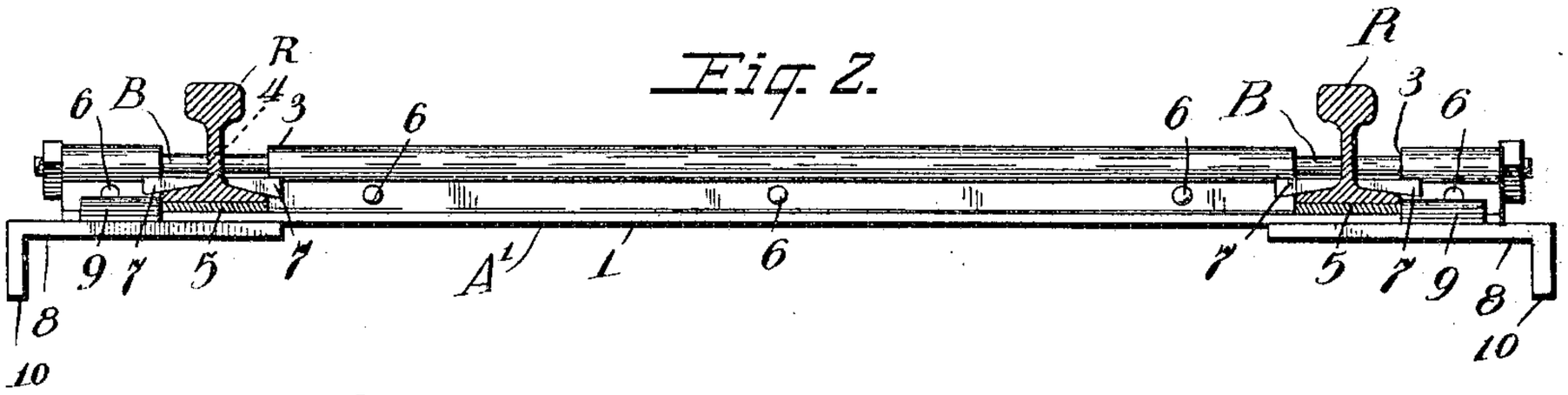


Fig. 3.

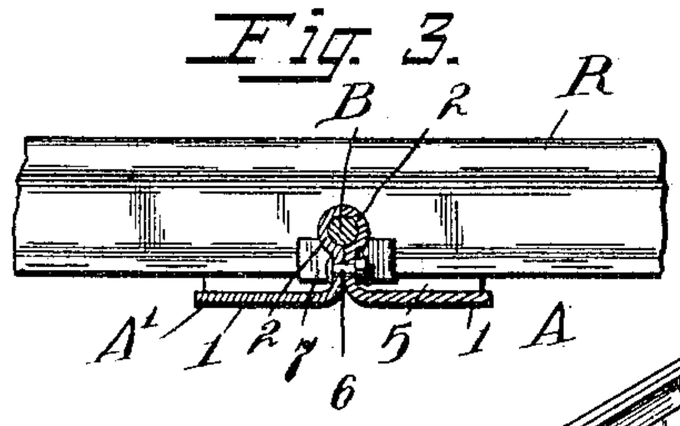


Fig. 4.

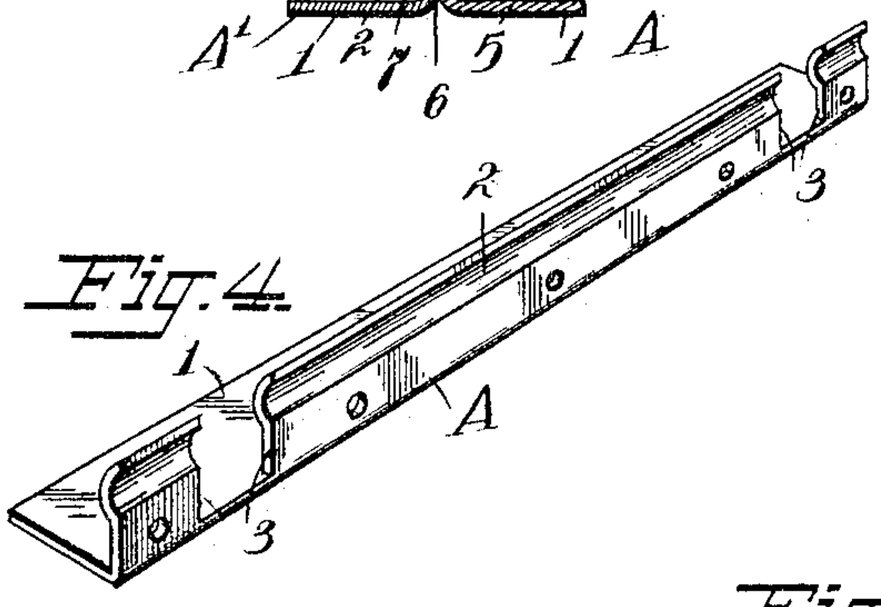


Fig. 5.

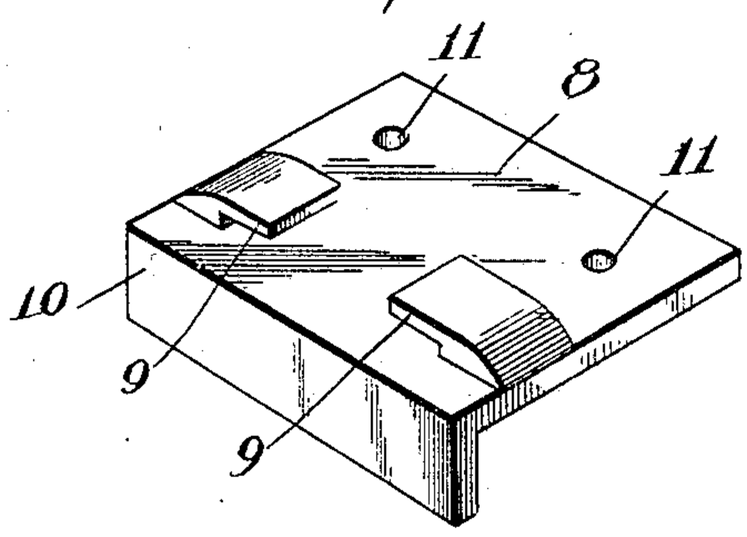
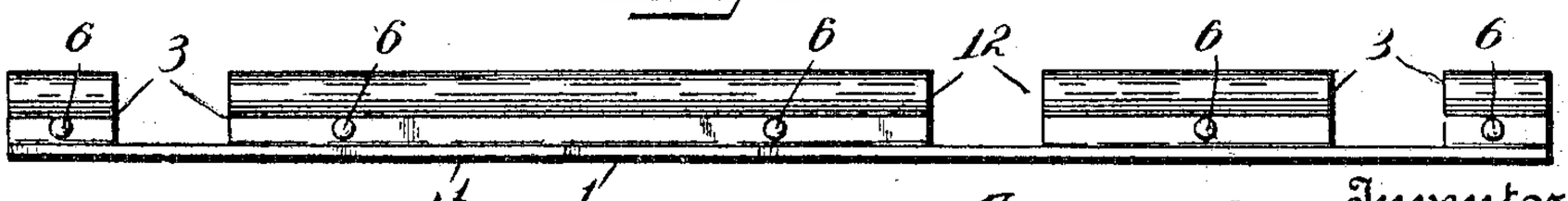


Fig. 6.



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UNITED STATES PATENT OFFICE.

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METAL RAILWAY-TIE.

No. 801,692. Specification of Letters Patent. Patented Oct. 10, 1905.

Application filed July 3, 1905. Serial No. 268,131.

To all whom it may concern:

Be it known that I, FRANCIS FREDERICK ROBERTS, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Metal Railway-Ties, of which the following is a specification.

My invention relates to an improvement in metal railway-ties; and the object is to provide a tie of such construction that it may be cheaply manufactured, easily put together in the installation of the road-bed, which will afford a safeguard against accidents by preventing the spreading of rails during washouts, and materially reducing the danger or possibility of train-robbers loosening or removing rails to derail a train.

With these several objects prominently in view my invention consists in certain novel features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view. Fig. 2 is a cross-section through the rails and longitudinal of the ties. Fig. 3 is a transverse section through one of the ties. Fig. 4 is a detached view of one section of a tie. Fig. 5 is a view of one of the base-plates, and Fig. 6 is a view of a tie-section adapted for three rails.

A and A′ are the two sections of the tie, they being precisely alike and rolled from sheet metal. These sections may be rolled in long strips or bars and then cut in suitable lengths and placed together to form counterparts of each other to complete the tie, each section comprising a flat base-flange 1 and an upturned flange 2, which, with its counterpart, forms a bolt-channel when together. Seats 3 3 are cut through these upturned flanges at distances apart to suit the gage of the road, and these seats are adapted to receive the rails R R. In this way the rails are deep-seated within the recesses of the flanges, so that spreading of rails is absolutely out of the question, and, furthermore, the removal of a rail from the ties is rendered almost impossible, should an unauthorized person attempt it to derail and wreck or hold up a train. The rails are held in their seats by the bolts B B, which extend through the bolt-channels of the ties and holes 4 4, drilled through the webs of the rails to receive them. Thus a secure lock is formed, and by making the nuts on the bolts B B of peculiar shape, if desired, the difficulty in the way of removing them is rendered even greater. A packing or pad 5, of some yielding material, is placed in the seats across the ties beneath the rails to cushion and deaden the sound of the wheels. The sections of the ties are held together by bolts 6 6. Bearing-blocks 7 7 are wedged between the bolts B B and the base-flanges of the rails in order to hold the rails securely in place.

To lengthen out the ties, if desired, at their ends and give them a greater bearing-surface upon the road-bed, the plates 8 8 are secured thereon. These plates preferably have upturned and inwardly-extending lips 9 9, by which they are slid and mounted upon the ends of the ties, and downturned flanges 10 10 on their outer edges enter the ballast and assist in anchoring them therein and prevent any tendency of the track to slide laterally on the road-bed. In bridgework these plates are provided with spike or bolt holes 11 11. These, however, are unnecessary when used on the ordinary road-bed.

Where a third rail is used for two gages of road or otherwise, the ties are simply provided with a third seat 12, as illustrated in Fig. 6 of the drawings.

From the foregoing it will be seen that I have provided a simple and substantial tie comparatively easy and cheap to manufacture and apply and one which affords a safeguard against wrecks, derailments, spreading of rails, and the like.

More or less slight alterations might be made in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

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

1. A railway-tie composed of two counterpart sections of metal having upturned flanges, which when together form a bolt-channel, rail-seats cut through these flanges, means for holding the sections together and for securing rails in the seats of the ties.

2. A railway-tie composed of two counterpart sections of metal having upturned flanges, which when together form a bolt-channel, rail-seats cut through these flanges, means for hold-

ing the sections together and for securing rails in the seats of the ties, said means comprising bolts or rods extending through the bolt-channels and holes formed therefor in the rail-webs.

3. A railway-tie composed of two counterpart sections of metal having upturned flanges, which when together form a bolt-channel, rail-seats cut through these flanges, means for holding the sections together and for securing rails in the seats of the ties, said means comprising bolts or rods extending through the bolt-channels and holes formed therefor in the rail-webs, and bearing-blocks fitted to and filling the spaces formed between the edges of the rail-seat, the rail-base flanges and the rod or bolt.

4. A railway-tie composed of two sections comprising each a base and a curved upturned flange, seats formed in the upturned flanges, and detachable plates fitted to the ends of the ties and provided with downturned flanges to prevent lateral movement thereof upon the road-bed.

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

FRANCIS FREDERICK ROBERTS.

Witnesses:

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