(No Model.)

T. J. JONES, Jr.

MANUFACTURE OF RAILROAD TIES.

No. 455,337. Patented July 7, 1891.

Fig. 1.

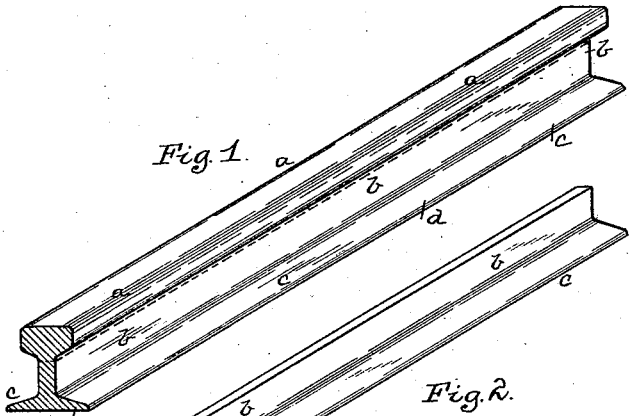


Fig. 2.

Fig. 5.

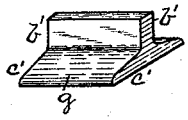


Fig. 3.

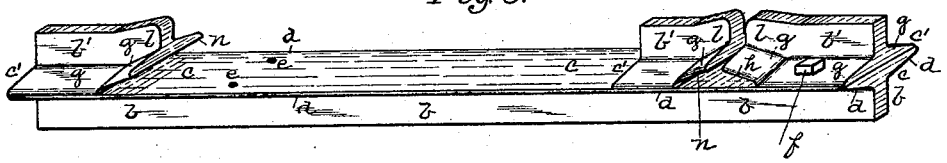
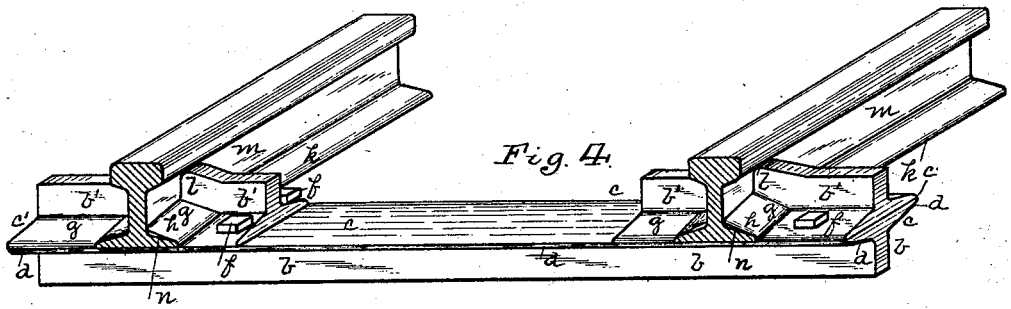


Fig. 4.



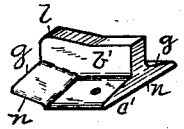


Fig. 6.

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UNITED STATES PATENT OFFICE.

THOMAS J. JONES, JR., OF PLANO, ILLINOIS.

MANUFACTURE OF RAILROAD-TIES.

SPECIFICATION forming part of Letters Patent No. 455,337, dated July 7, 1891.

Application filed March 16, 1891. Serial No. 385,217. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. JONES, JR., a resident of Plano, in the county of Kendall and State of Illinois, have invented a new and useful Improvement in the Manufacture of Railroad-Ties; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to the utilization of old railroad-rails and to the formation of railroad cross-ties therefrom. It is well known that a large number of rails become worn out each year and require replacing, while these old or worn-out rails are of such peculiar shape that it is exceedingly difficult to utilize them in the manufacture of other articles, this being especially the case with steel rails, which will not readily weld when formed in piles or fagots for rerolling. At the present time, however, the mass of these worn rails is composed of Bessemer steel, so that some economic means of utilizing the same is very desirable. At the same time it is well known that in certain districts the ordinary wooden cross-ties are becoming expensive, on account of the exhaustion of proper wood for making the same, while generally the wooden cross-ties are objectionable, for the reason that they will rot or decay and the hold of the spikes therein will be overcome, this being the cause of many accidents arising from the spreading of the rails.

My invention therefore has for its object the utilization of these old rails and the providing of a form of metallic cross-tie.

It consists, generally stated, in slitting the head from the railroad-rail, forming a cross-tie having a flat upper surface formed by the under surface of the tread portion and braced by the web portion of the rail, and securing the rail-fastening to such under surface of the rail-tread.

It also consists in welding part of the rail-fastening to the flat upper surface of the cross-tie formed by such under surface of the rail-tread.

It also consists in cutting part of such tread and web into short lengths and swaging one end of the tread portion of such short lengths up to fit the upper surface of the rail tread or flange resting on the tie and securing such fastening to the top face of the tie formed by the under face of the rail-tread.

It also consists in other improvements, as hereinafter set forth.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a perspective view of the rail. Fig. 2 is a like view of the same with the head portion removed, forming the cross-tie. Fig. 3 is a like view of the finished tie, showing the rail-fastenings thereon. Fig. 4 is a like view showing rails secured to the rail-fastening. Fig. 5 is a view of the blank from which the rail-fastenings are made, and Fig. 6 is a view of one of the rail-fastenings.

Like letters of reference indicate like parts in each figure.

In practicing the invention the ordinary imperfect, old, or worn-out railroad-rail is fed to any suitable shearing or slitting machine, and the head portion *a* thereof is slit therefrom, as indicated in dotted lines, leaving the web portion *b* and the tread *c*, as shown in Fig. 2. The web and tread are then cut to the desired length for the cross-tie, as illustrated in Fig. 2, it being understood that the rail may be cut into these lengths and the head then cut therefrom, or the head cut from the entire rail and then the web and tread cut into the desired length, as may be found most convenient. I thus obtain by a simple shearing operation a railroad cross-tie in which the tread forms the flat upper portion of the tie, on which the rail can have a broad bearing, giving a full and sufficient support thereto, and this upper portion of the tie is suitably and strongly braced by the web portion *b*, which extends under the same, as shown in Figs. 3 and 4, while the flanges (which formed the tread portion of the rail) extend out from such web and rest upon the stone or other ballast employed to support the same, a much stronger and stiffer cross-tie than the ordinary wooden tie being thus obtained, and one which is practically indestructible. With such cross-tie any suitable form of rail fastening or chair may be employed, the rail-fast-

ening being secured to the upper face of the tie, which is formed by the under face of the rail-tread, the flanges *d* being punctured, as at *e*, to receive the securing-bolts *f*, which may be secured in place either by nuts screwing onto the same on the under surface of the flanges or may screw into the holes *e*, which may be threaded for their reception.

In order to form chairs or fastening devices, I also prefer to utilize the body of the old rail, this being done in the following way: The head having been removed, the web *b'* and tread *c'* are cut into short lengths, forming a T-shaped blank, such as shown in Fig. 5, and the one end of this blank is heated and swaged in suitable dies, so that its flanges *g* are raised, so that the under face thereof, as at *h*, will fit over the flange or tread *k* of the rail to be secured to the cross-tie, while the upper edge of the web portion *b'* of the blank is swaged down, as at *l*, to fit against the web portion *m* of the rail to be secured to the tie. The flat under face *n* of such chair or fastening, formed by the tread *c'* of the rail from which it is cut, will fit upon the flat top face of the cross-tie, and such fastening may be secured in place by the bolts *f* passing through the flanges *g* thereof and passing through the holes *e*, formed on the flanges *d* of the cross-tie; or the two flat faces in the cross-tie and rail-fastening formed by the under faces of the old rail may be welded together, so permanently securing that portion of the fastening to the cross-tie. In practice I prefer to weld to the cross-tie one of such fastenings to extend over one side of the rail, while the other fastening is secured by bolts, as illustrated. I am thus enabled to form these cross-ties from imperfect, old, or worn-out rails at practically small expense—namely, only the expense of slitting and shearing to length and securing the fastenings thereto, there being no necessity of reheating or rerolling the parts—and as such imperfect, old, or worn-out rails are of low cost the cross-ties can be made very cheaply, and at the same time, on account of the flat upper face formed by the under face of the tread, the support that the web portion *b* gives to the flat body *c* and the broad flanges to rest upon the ballast a very efficient form of cross-tie is obtained. The cross-tie can be used at all places desired, not only on the ordinary track, but on curves for switch-rods, &c.

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

1. The herein-described method of forming cross-ties, consisting in slitting the head from a railroad-rail and forming the cross-tie of the web and tread portions thereof and securing the rail-fastenings to the upper face of the cross-tie formed by the under face of the rail-tread, substantially as and for the purposes set forth.

2. The herein-described method of forming cross-ties, consisting in slitting the head from the rail, leaving the tread and web thereof, cutting other portions of the tread and web into short lengths, and swaging one end of short lengths to fit to the rail-flange, and securing the under face of the fastening device so obtained to the upper face of the cross-tie formed by the under face of the rail-tread, substantially as and for the purposes set forth.

3. The herein-described method of forming railroad cross-ties, consisting in slitting the head from the rail and forming the cross-tie of the web and tread portions thereof and welding part or all of the fastening devices to the upper face of the cross-tie formed by the under face of the rail-tread, substantially as and for the purposes set forth.

4. A railroad cross-tie formed of the tread and web portions of a railroad-rail, the head of such rail being removed, and a rail-fastening secured to the upper face of such cross-tie formed by the under face of the rail-tread, substantially as and for the purposes set forth.

5. The herein-described method of forming a rail-fastening, consisting in cutting the tread and web portions of a railroad-rail into short lengths and swaging up one end of such blank to cause the tread portion thereof to fit the upper face of the rail-flange, substantially as and for the purposes set forth.

6. A rail-fastening formed of the tread and web portions of a rail, one end of which is swaged up to fit the upper face of the rail-flange, substantially as and for the purposes set forth.

In testimony whereof I, the said THOMAS J. JONES, Jr., have hereunto set my hand.

THOMAS J. JONES, JR.

Witnesses:
HARRY M. ZULL,
ALBERT H. SEARS.