

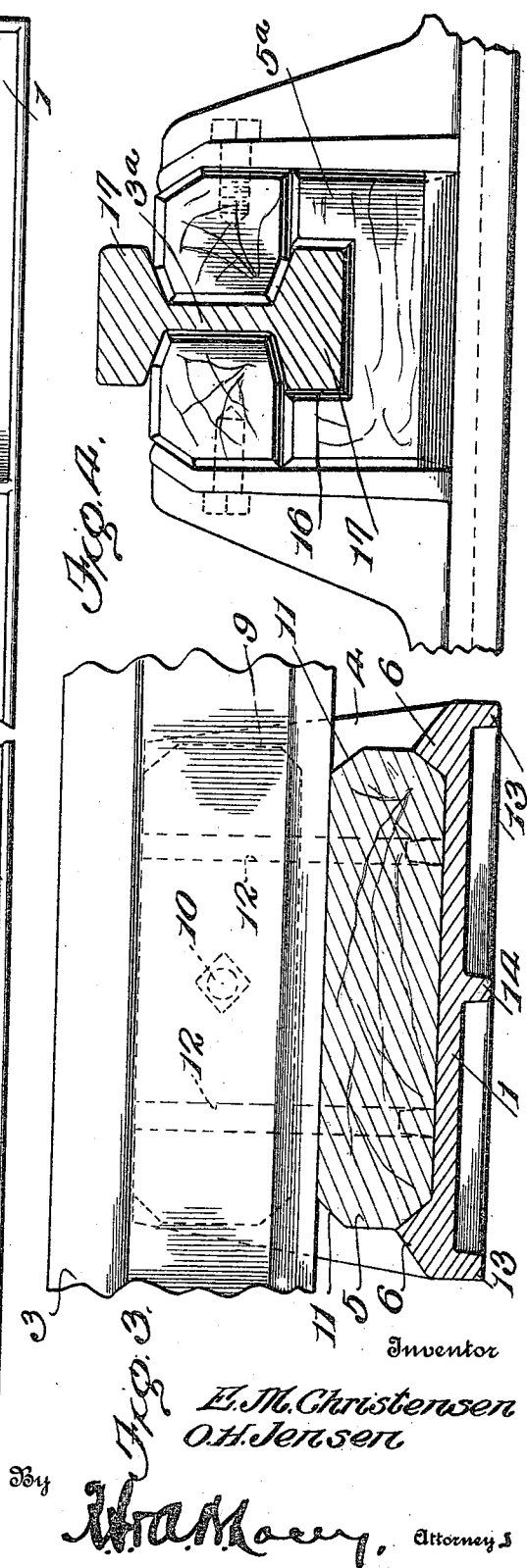
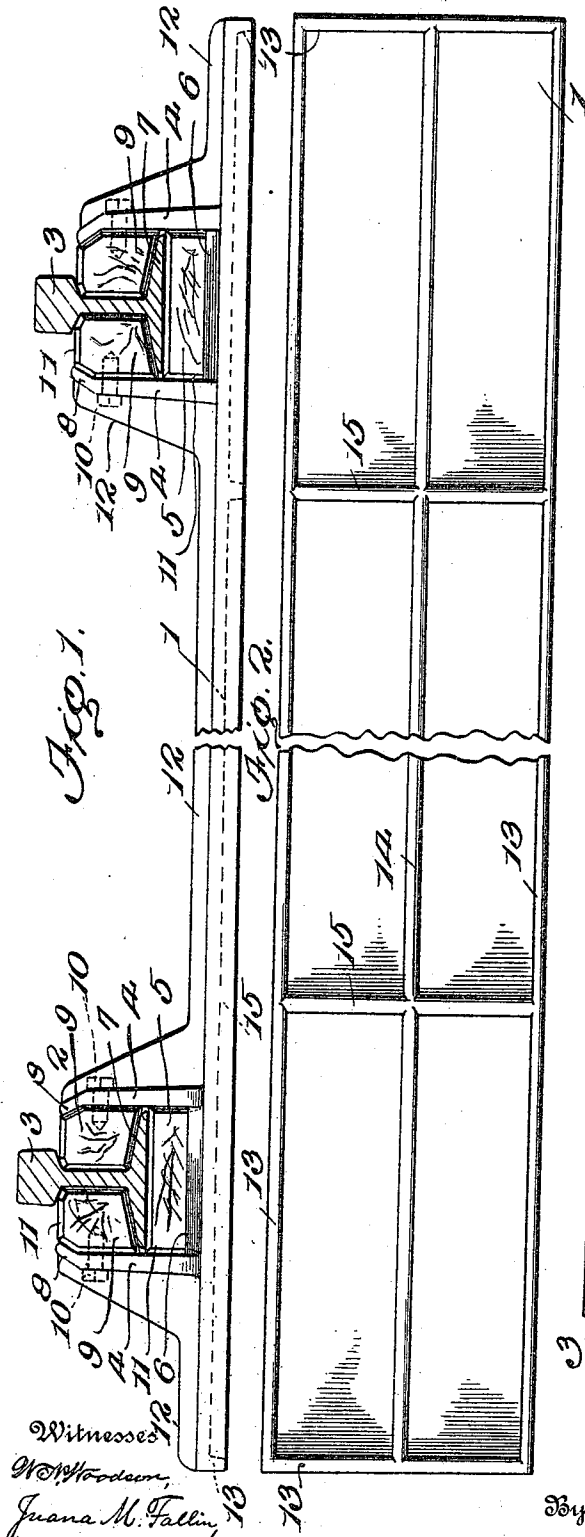
E. M. CHRISTENSEN & O. H. JENSEN.

RAILWAY TIE.

APPLICATION FILED AUG. 7, 1909.

960,273.

Patented June 7, 1910.



UNITED STATES PATENT OFFICE.

ERASTUS M. CHRISTENSEN AND OLE H. JENSEN, OF SHELLEY, IDAHO.

RAILWAY-TIE.

960,273.

Specification of Letters Patent.

Patented June 7, 1910.

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To all whom it may concern:

Be it known that we, ERASTUS M. CHRISTENSEN and OLE H. JENSEN, citizens of the United States, both residing at Shelley, in the county of Bingham and State of Idaho, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification.

The present invention comprehends certain new and useful improvements in track equipment for railways, and the invention has for its object a particularly efficient railway tie that is designed to replace the conventional wooden tie which has been found so objectionable in practice.

Another object of the invention is a railway tie, the main or body portion of which is constructed of metal and is adapted to be permanently positioned in the road bed, the wearing portions of the tie being separate from the body portion and being susceptible of being quickly and conveniently removed therefrom and replaced by new parts when occasion requires, thereby effecting a material economy in the cost of the maintenance of the track.

A further object of the invention is a metal tie of this character wherein the rails are supported on cushion blocks of wood that afford the necessary yielding resistance to the pounding of the wheels of the rolling stock on the rails.

A still further object of the invention is a tie provided with chairs for the reception of the rails, the rails being secured in the chairs in an effectual manner without the use of bolts or the like which tend to weaken the parts and are liable to work loose, and thus require frequent attention.

With these and other objects in view that will more fully appear as the description proceeds, the invention consists in certain constructions and arrangements of the parts that we shall hereinafter fully describe and then point out the novel features thereof in the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawing, in which:

Figure 1 is a view in elevation, illustrating the application of our improved railway tie; Fig. 2 is a bottom plan view thereof; Fig. 3 is a transverse section; and, Fig. 4

is a modification hereinafter specifically described.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

Our improved railway tie is formed of suitable metal, as for instance, pressed steel, and consists essentially of a substantially flat base 1 that may be of any desired length or width and that is provided at suitable longitudinally spaced points with chairs 2 for the reception of the respective rails 3 of the track.

Each of the chairs comprises a pair of opposed cheeks 4 which are preferably formed integral with the base and upstand perpendicularly therefrom, the cheeks extending transversely with respect to the tie and being disposed longitudinally with respect to the rail. Removably fitted between the cheeks is a cushion block 5 of wood upon which the rail is yieldingly supported. The cheeks serve to confine the cushion block against any movement longitudinally of the tie, and the block is held against transverse movement relative thereto in any approved manner. As one means for accomplishing this object, the base is formed at its side edges with upturned ribs 6 that extend between the cheeks and constitute abutments for the block, the ribs preferably having double inclined walls and the blocks being beveled at their lower edges to fit the ribs, as illustrated in Fig. 3.

The base flanges 7 of the rail, which is of conventional form, rest upon the upper surface of the cushion block that is arranged at a considerable distance below the upper edges of the cheeks 4, the upper portions of the cheeks being turned obliquely inwardly in upwardly convergent relation to form flanges 8 overhanging the cushion block, as best seen in Fig. 1. As the preferred means for retaining the rail and the cushion block against upward displacement in the chair, wooden wedges 9 are utilized and are driven longitudinally on opposite sides of the rail between the web thereof and the respective cheeks 4, the wedges being beveled to fit under the flanges 8. The wedges fit between the base flanges of the rail and the overhanging portions of the head thereof, and thus serve to materially brace the latter against excessive strain. As a precautionary measure lag screws 10 are inserted through

the cheeks and embedded in the wedges to maintain the same against accidental displacement. In practice the wedges and the cushion block are coated with tar, so as to be prevented from decaying, or shrinking, or swelling from exposure to the weather. For convenience the end edges of the wedges and cushion blocks are beveled, as indicated at 11, so as to be adapted to be more easily driven into position when assembling the parts.

In the present instance, one or more flanges or webs 12 upstand from the base 1 and extend longitudinally thereof between the chairs 2 and from the chairs to the ends of the rail in order to brace the cheeks 4 and prevent the same from spreading apart under excessive strain. The base is formed in its lower face along its side and end edges with ribs 13 and also with a medial rib 14 and a plurality of cross ribs 15 intersecting the latter. These ribs serve to materially strengthen the structure of the tie as a whole and permit it to be formed of comparatively thin metal so as to render it lighter without sacrificing its strength. Attention is also directed to the fact that the ribs on the lower face of the tie form depressions in which the ballast is received, whereby to insure against accidental displacement of the tie therein.

From the foregoing description in connection with the accompanying drawing, it will be apparent that we have provided an improved railway tie which admits of the rails being expeditiously applied thereto and is arranged to hold the rails in place in an effectual manner, so as to require no subsequent attention. Among the many advantages residing in this structure, it is to be observed that the cushion blocks or wearing portions of the tie may be quickly removed and replaced by new ones without disturbing the body portion of the tie in the ballast; that the tie as a whole is more durable than the customary wooden ties in general use and embodies to a marked degree the characteristics of simplicity and strength; and that it may be easily and cheaply manufactured so as to warrant its general adoption.

The cushion blocks are of different styles according to the form of the rails with which they are employed. By way of illustration, I have shown in Fig. 4, a cushion block 5^a that is formed in its upper face with a groove 16 for the reception of one of the heads 17 of a double headed reversible rail 3^a. The rail is held in the chair in sub-

stantially the same manner as before described, the only difference being that the wedges have a slightly different contour to conform to the rail. It is to be observed therefore, that by providing cushion blocks and wedges of suitable forms, the chairs may be employed to seat rails of different types.

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

1. A metallic railway tie including a base, a pair of opposed cheeks upstanding from the base, a cushion block resting upon the base and fitting between the cheeks and supporting the rail, the cheeks projecting upwardly beyond the upper surface of the block and being formed at their upper ends with inwardly directed flanges spaced above the base flanges of the rail, substantially horizontally disposed wedges driven longitudinally between the opposite sides of the rail and the upper portions of the adjacent cheeks and inserted beneath the flanges of the latter, whereby to be held against upward displacement, and set screws working through the upper portions of the cheeks and engaged with the wedges to maintain the same against longitudinal displacement.

2. A metallic railway tie including a base, a pair of opposed cheeks upstanding substantially perpendicularly from the base and extending transversely thereof, the base being formed at its side edges with relatively short upstanding ribs extending longitudinally between the cheeks, a cushion block resting upon the base and fitting between the cheeks and the ribs and of greater height than the latter and of less height than the former, the cushion block supporting the rail, the cheeks being formed at their upper ends with inwardly directed flanges spaced above the base flanges of the rail, horizontally disposed wedges conforming to the contour of the opposite sides of the rail and driven longitudinally between the same and the upper portions of the respective cheeks and inserted beneath the flanges of the latter, whereby to maintain the parts against upward displacement, and members removably inserted through the cheeks and engaged with the wedges to hold the same against longitudinal displacement.

In testimony whereof we affix our signatures in presence of two witnesses.

ERASTUS M. CHRISTENSEN. [L. s.]
OLE H. JENSEN. [L. s.]

Witnesses:

R. H. BRADSHAW,
W. J. MALLORY.