

C. W. BAEDER.

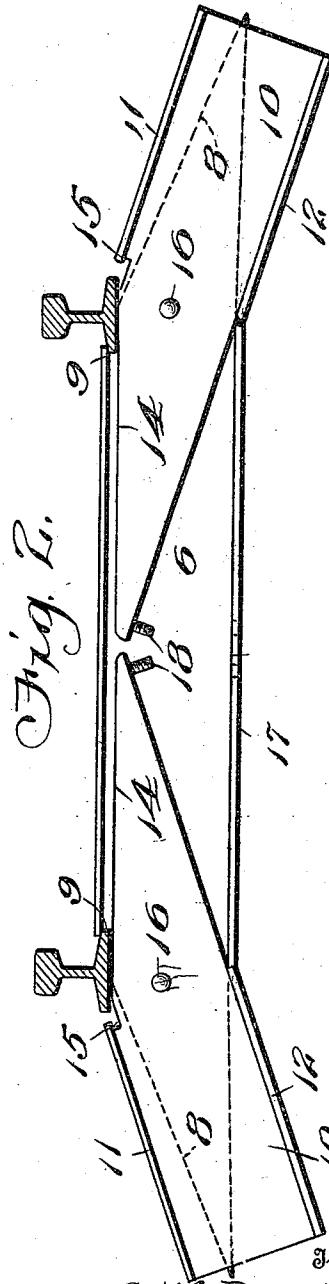
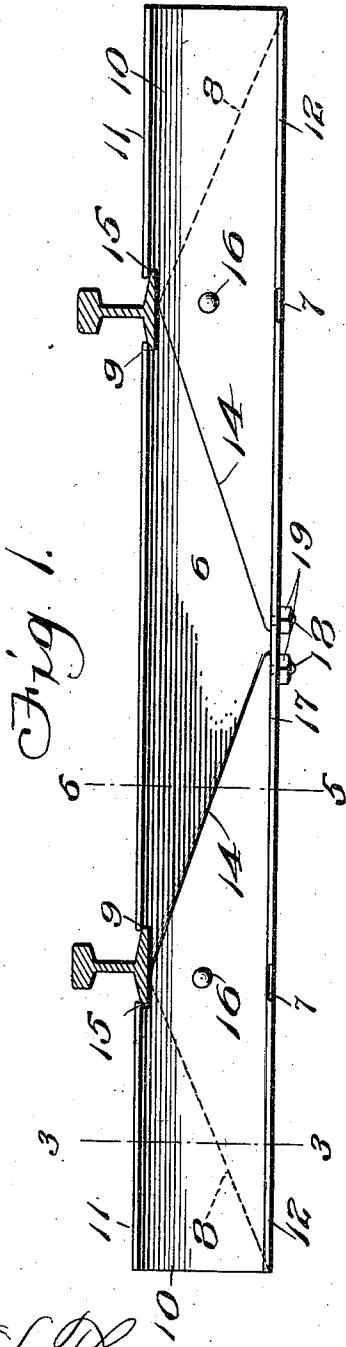
RAILWAY TIE.

APPLICATION FILED NOV. 2, 1909. RENEWED SEPT. 28, 1910.

991,188.

Patented May 2, 1911.

2 SHEETS—SHEET 1.



Witnesses

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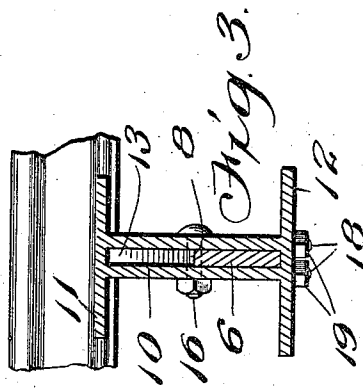
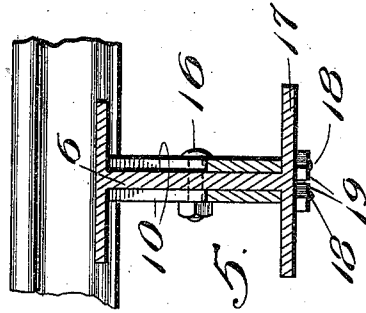
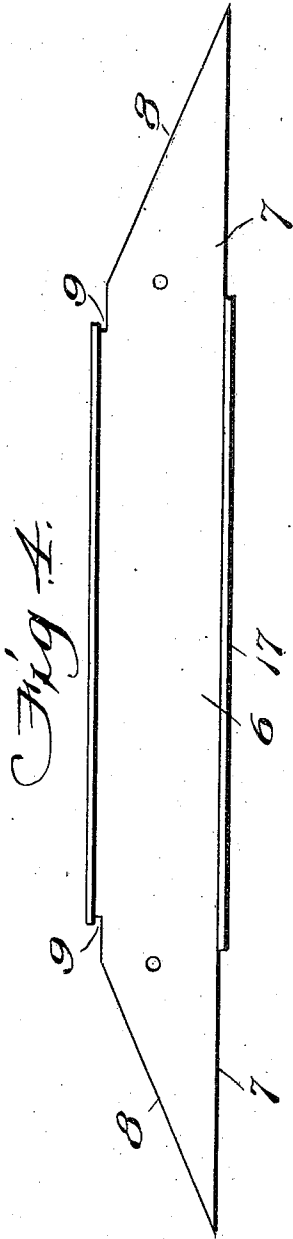
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UNITED STATES PATENT OFFICE.

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RAILWAY-TIE.

991,188.

Specification of Letters Patent.

Patented May 2, 1911.

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To all whom it may concern:

Be it known that I, CHARLES W. BAEDER, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification.

This invention relates to railway ties, and particularly to metallic railway ties, and has for its object to provide an improved tie having parts which also serve to fasten the rails to the tie without the use of the ordinary attaching devices connecting the rail base and the tie.

The construction is characterized by the use of a middle piece and two end pieces, the end pieces being pivotally connected to the middle piece so as to swing up or down, to close or open the fastening or grip which holds the tie to the rail. There is an absence of small or weak parts, the rail clamping means being such that the rails can not be loosened without obtaining access to the bottom of the tie by removing the ballast. The fastening means are also self-locking to the extent that additional weight placed on the rails tends to increase the grip with which the rails are held.

In general form the tie consists of an I-beam cut into sections as stated, and the top flanges of the beam serve to grip the base of the rail when the tie is put in place.

The invention is illustrated in the accompanying drawings in which—

Figure 1 is a side view of the tie, with the parts closed on the rail. Fig. 2 is a similar view of the tie "broken" or opened to allow the rails to be placed or removed. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is a side elevation of the middle piece of the tie. Fig. 5 is a section on the line 5—5 of Fig. 1.

Referring specifically to the drawings, 6 indicates the middle piece of the tie. This is an I-beam with the ends specially cut and shaped. At each end the lower flanges of the beam are removed as indicated at 7 and the web is cut on an inclination 8, forming a pointed end on the web. The upper flanges, at the junction therewith of the incline 8, are undercut or notched as shown at 9 to form a seat for one edge of the rail base,

which when in position fits in the notch under the overhanging part of the flanges. Both ends of the section are similarly shaped. Connected to the middle section thus described are two end sections each of which has the general form of an I-beam 10 with top flanges 11 and bottom flanges 12, but the web of the beam instead of being single as usual is double, with a space between as indicated at 13 in the sectional views. The inner end of each end section has its base flanges removed, and the web at the end is inclined as indicated at 14, in a manner similar to the inclination 8 in the web of the middle piece, and the tapered ends of the middle section fit between the webs 10 of the end sections, as clearly shown in the sectional views. At the top of the incline 14 each end section is notched or undercut as indicated at 15, to match with the notch 9, to form a recess of proper shape to receive the rail base, which thus rests on the webs 6 and 10, the space between the webs 10 being of proper width to receive the web 6 at a snug fit. The middle and end sections are connected together by pivot bolts 16 which extend through holes in the webs.

As will be seen the inclined ends of the end sections are arranged to fit on opposite sides of the web 6 of the middle section and to rest upon the base flanges 17 of said middle section, and also, the inclined ends of the web 6 fit between the webs 10 and are arranged to rest upon the base of the end sections. At the inner ends of the webs 10 threaded lugs 18 are formed, depending to fit through holes in the base flanges 17 of the middle section, and these lugs receive nuts 19 on the underside of said flanges to hold the parts together. The threads and nuts may be omitted, plain lugs being provided, but by using nuts the rigidity of the tie is assured. The pivot bolts 16 are offset slightly outwardly from the center line of the rails so that the excess of weight inside of the pivots will tend to close the sections upon each other and thus increase the grip on the rails as the pressure is increased. The base flanges of the middle and end sections are cut off at such a point that they will practically meet when the tie is set up, thus forming substantially continuous lower

flanges along the whole tie; and the upper flanges are also continuous except for the recesses in which the rails set.

The pivotal connection at the bolts 16, and
 5 the bevel ends of the sections of the tie, allow the tie to be "broken" or flexed to open the recesses, as illustrated in Fig. 2, the webs of the respective sections sliding in contact with each other. When the rails
 10 are to be placed on the tie the end sections are flexed or bent down in the manner indicated and the base of each rail is put in the recess made to receive it. The end sections are then straightened up and the rail base is
 15 gripped under the top flanges of the opposite sections, the threaded lugs 18 passing through the holes in the base flanges of the middle section. The nuts 19 are then applied, holding the sections closed and effectively clamping the rails and fastening the
 20 same to the tie. These nuts are buried in the ballast and consequently cannot be tampered with by mischievous persons. No other fastenings for the rails are needed. To
 25 remove the rails the nuts 19 are taken off after removing the ballast around the same, and the end sections are then swung down on their pivots sufficiently to release the grip. New ties can be placed without taking up
 30 the rails, by slipping the tie in under the rails and then lifting the same to proper position and straightening and fastening the end sections.

The scope of the invention is especially not
 35 limited to the particular construction shown, but embraces the idea of forming a metallic tie in sections pivoted together, whereby the rails can be releasably clamped by flexing the sections on the pivots.

40 What I claim as new is:—

1. A metallic railroad tie comprising I-beam sections pivotally connected together and having cooperating rail-engaging devices arranged to grip a rail when the sections
 45 are turned one way on the pivot and to release the rail when turned the opposite way.

2. A metallic railroad tie comprising I-beam sections pivoted together at the webs, each section having a rail-engaging notch
 50 under the top flange, said notches being located opposite to each other to engage therein opposite edges of the rail base.

3. A metallic railroad tie comprising a
 55 middle I-beam section and end beam sections pivoted to opposite ends thereof respectively, said sections having cooperating rail-engaging devices at the top thereof, engaged or disengaged by turning said sections on the
 60 pivots.

4. A metallic railroad tie comprising a middle I-beam section, and end beam sections pivoted to opposite ends thereof, said sections having cooperating rail-engaging devices
 65 and seats at the top thereof, said de-

vices being actuated by turning the sections on the pivots, the pivots being located outside of the line of weight on the rails.

5. A metallic railroad tie comprising I-beam sections pivoted together and provided
 70 with depressed rail seats at the top, the pivots being located under said seats, the top flange of each section having an overhanging part beside each seat, arranged to engage over the rail base when the sections
 75 are turned on the pivots to bring their tops toward each other.

6. A metallic railroad tie comprising I-beam sections having lapped webs pivoted together, said sections also having rail engaging devices at the top which are opened
 80 and closed by turning said sections on the pivots.

7. A metallic railroad tie comprising I-beam sections having top and bottom base
 85 flanges and extended webs pivoted together by pivots passing through the webs, the extended parts of the web of one section resting on the base flange of the other section when the tie is straightened, and cooperating rail-
 90 gripping devices located at the top of the sections and opened or closed by flexing or straightening the sections on the pivots.

8. A metallic railroad tie comprising a middle I-beam section having extended webs
 95 at the ends thereof and top and bottom flanges, and end beam sections having inwardly extending webs which lap the web of the middle section against opposite sides thereof, and also having top and bottom
 100 flanges, pivots connecting the webs of the middle and the end sections, so that they may be flexed with respect to each other, the upper flanges of the sections being cut away and formed with undercut recesses in which
 105 the rails are seated and gripped, said recesses being opened or closed by turning the sections on the pivots.

9. A metallic railroad tie comprising a middle I-beam section the web of which is
 110 extended and tapered at the ends, and end beam sections having extended and tapered webs which lap said web, pivots connecting the webs of said sections whereby they may be turned to an angle with each other, and
 115 rail engaging devices at the top of said sections constructed to be opened and closed by turning said sections on the pivots.

10. A metallic railroad tie comprising I-beam sections pivoted together and having
 120 cooperating rail-gripping devices released or engaged by turning the sections on the pivots, and means to hold the sections with the devices in engaged position.

11. A metallic railroad tie comprising a
 125 middle I-beam section having flanges at top and bottom and a tapered web projecting at the ends thereof, end beam sections having flanges at top and bottom and webs projecting at the inner ends to lap the ends of
 130

the web of the middle section, pivots connecting said lapped ends, rail-engaging devices at the top of the sections, released or engaged by flexing or straightening the sections with respect to each other, and fastening devices between the sections to hold them in straight position.

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

CHARLES W. BAEDER.

Witnesses:

LANG McCORMACK,
C. W. DAVIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
