J. H. REED.

METALLIC RAILWAY TIE.

APPLICATION FILED JUNE 1, 1910.

986,085. Patented Mar. 7, 1911.

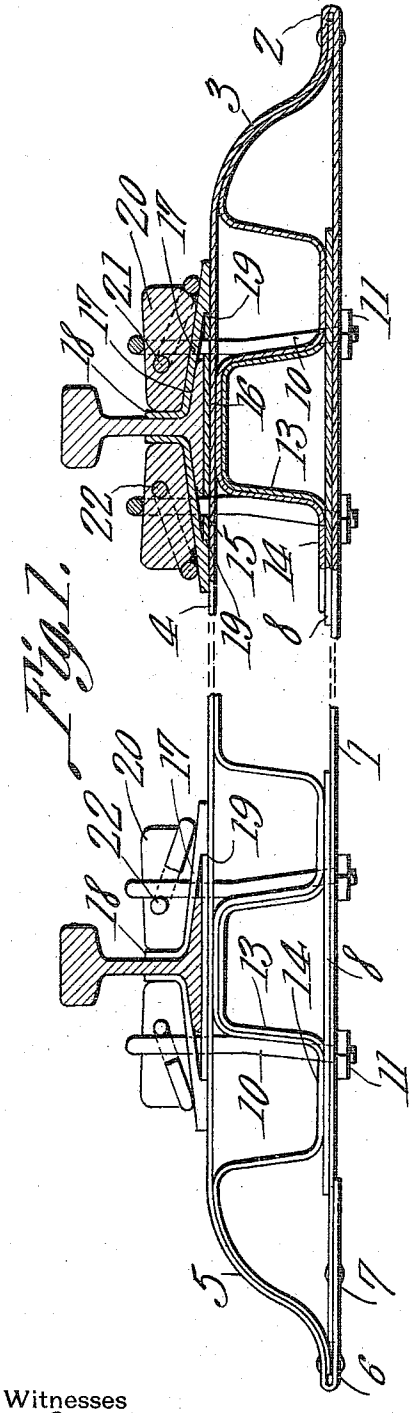

Fig. 1.

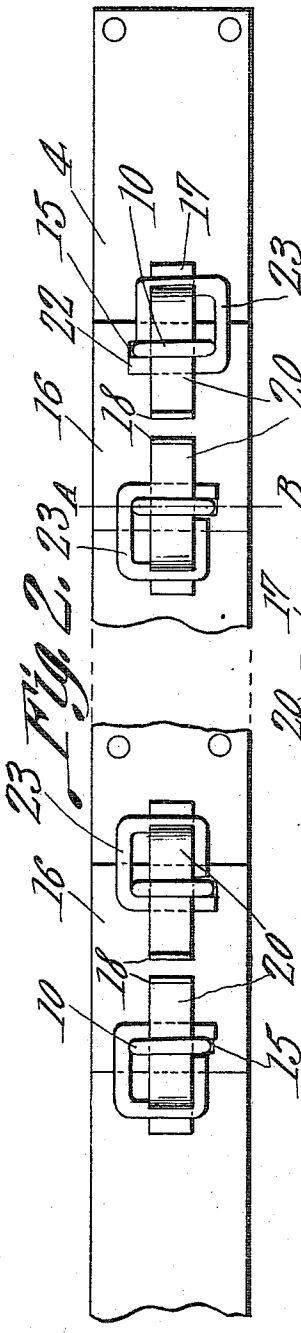

Fig. 2.

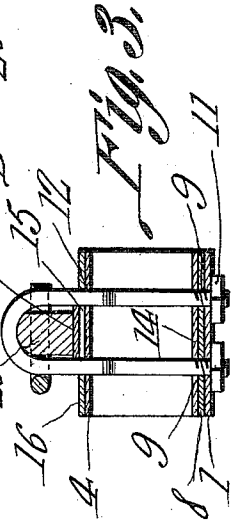

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

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METALLIC RAILWAY-TIE.

986,085. Specification of Letters Patent. Patented Mar. 7, 1911.

Application filed June 1, 1910. Serial No. 564,353.

To all whom it may concern:

Be it known that I, JOSEPH H. REED, a citizen of the United States, residing at Girard, in the county of Trumbull and State of Ohio, have invented a new and useful Metallic Railway-Tie, of which the following is a specification.

This invention relates to metallic railway ties and one of its objects is to provide a device of this character formed of sheet metal and which is adapted to support the rails with a desired degree of resiliency.

A further object is to provide a tie of this character which can be readily formed by machinery.

A still further object is to provide a tie having novel means for attaching rails thereto, said means being both simple and durable in construction.

With these and other objects in view the invention consists in certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a view partly in side elevation and partly in section of the end portions of a tie constructed in accordance with the present invention. Fig. 2 is a plan view of the tie, the middle portion thereof being removed. Fig. 3 is a section on line A—B Fig. 2.

Referring to the figures by characters of reference 1 designates an elongated metallic strip constituting the base of the tie, said strip being folded upon itself at an intermediate point, as shown at 2 and then curved upwardly and inwardly as at 3 and merging into a top strip 4. Said top strip extends parallel with the base strip 1 and has a curved end portion 5 similar to the curved portion 3 and which extends to a fold 6, the terminal of the strip being extended under the adjoining end of the base strip 1 as shown at 7 and being riveted thereto or otherwise secured. Reinforcing strips 8 are arranged upon the base strip 1 under the rail supporting portions of the top strip 4 and these strips 8, as well as the base strip 1, have openings 9 therein for the reception of the threaded ends of holding staples or keepers 10, said threaded ends being engaged by nuts 11 and the intermediate or crown portions of the keepers being extended above the top strip 4 as clearly indicated in the drawings. It is of course to be understood that the top strip has openings 12 therein practically alining with the apertures 9 and through which the keepers extend. Metallic reinforcing arches 13 are interposed between the strips 8 and the top strip 4 at those points where the rails are to be supported by the tie and these reinforcing arches fit snugly within certain of the arched portions of a sinuous filling or reinforcing strip 14 formed of metal and which extends from one end to the other of the tie, all portions of this strip 14 being interposed between the strips 1 and 4 and the ends of said strip 14 being extended into the folds 2 and 6.

The strips 1, 4 and 14 are held together at desired intervals by means of rivets or the like and, by reason of the peculiar contour of the filling strip 14, it will be apparent that the tie will be capable of yielding to a limited extent when subjected to the weight of a car.

The upper portions of the keepers 10 project through slots 15 formed within rail chairs or supporting plates 16 resting on the top strips 4. Rail engaging plates 17 are extended through the keepers 10 and have upstanding end portions 18 adapted to fit against the web of the rail while transverse shoulders 19 are formed upon the lower faces of these plates 17 and are adapted to abut against the ends of the plate 16. Wedges 20 are insertible into the keepers 10 at points above the plate 17 and are adapted, when driven tightly into the keepers, to bind the plates 17 firmly against the plates 16 and against the webs of the rails and the base flanges thereof. Transverse openings 21 are formed in the wedges and receive keys 22 each key having a substantially U-shaped extension 23 adapted to extend across the outer end of the wedge 20 and partly under said end. This key and its extension is preferably formed of heavy wire which can be bent so as to properly hold the wedge after it has been adjusted.

When it is desired to secure a rail in place upon the tie, the keepers 10 are inserted through the openings 12 and 9 and secured by means of nuts 11. The plate 16 is then placed upon the upper portions of the keepers and the rail is placed thereon and between the keepers. Plates 17 are then inserted through the keepers and into engagement with the base flanges and the web

of the rail and after they have been forced tightly thereagainst, the wedges 20 are driven into the upper portions of the keepers so as to become firmly engaged with the plate 17. Keys 22 are then inserted through the openings 21 and the extensions 23 are bent around the ends of the wedges and partly under said ends so as to bind the wedges tightly upon the plates 17.

By referring to the drawing it will be seen that the arches 13 and the adjoining portions of the strips 14 are formed with downwardly diverging portions so that, when the rails are subjected to a load, these portions will yield to a limited extent, thus rendering the tie sufficiently resilient to overcome all of the disadvantages incident to a non-resilient metallic tie. As all of the parts except the keepers and wedges are formed of sheet metal, the entire tie can be readily shaped by machinery and it will be cheap to manufacture, durable and efficient.

Various changes can of course be made in the construction and arrangement of the parts without departing from the spirit or sacrificing any of the advantages of the invention as defined in the appended claims.

What is claimed is:—

1. A metallic railway tie including a single strip of metal folded upon itself and having its ends secured together, said strip constituting top and base portions, and an intermediate, sinuous filling strip contacting with the top and bottom strips directly under the rails to support said rails and the top strip.

2. A metallic railway tie consisting of a single length of metal folded to form top and base strips, the meeting portions of said strips forming terminal folds, and a sinuous filling strip interposed between the top and base strips and having its ends secured within the folds.

3. A railway tie including a continuous length of metal folded to form a top strip and a base strip, the ends of the strip of metal being secured together, and said strips forming folds at the ends of the top and base strips, and a resilient filling strip interposed between and secured to the top and base strips and having its ends secured within the folds.

4. A railway tie including top and base strips a resilient filling strip secured thereto and interposed therebetween, and rail fastening means including keepers extended through the strips, rail engaging members, and wedging devices insertible through the keepers and engaging said members.

5. The combination with a tie including top and base strips and an intermediate filling strip, of keepers extending through the strips and detachably connected thereto, a rail supporting plate removably mounted upon the keepers and bearing on the top strip, rail engaging members upon the plates, wedging devices engaging the keepers and bearing upon the rail engaging members and keys for locking said devices within the keepers.

6. The combination with a metallic railway tie including top and base strips and an intermediate filling strip, of staple like keepers extending through the strips and projecting above the top strip, rail engaging members insertible through the keepers, wedging devices bearing on said members and seated within the keepers, and a bendable key extending transversely through each wedging device and lapping an end of said device.

7. The combination with a metallic railway tie consisting of top, base and intermediate strips, of staple like keepers detachably secured within and extending above said strips, rail supporting plates removably mounted on the keepers, rail engaging members, wedging devices insertible into the keepers and bearing upon said members, and a key insertible transversely through each of the wedging devices and having a U-shaped extension bendable across and under one end portion of the wedge.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOSEPH H. REED.

Witnesses:
C. D. GOODRICH,
EVAN REDMAN.