J. D. ELLIS.

RAILWAY TIE.

APPLICATION FILED APR. 5, 1911.

994,827. Patented June 13, 1911.

Fig. 1.

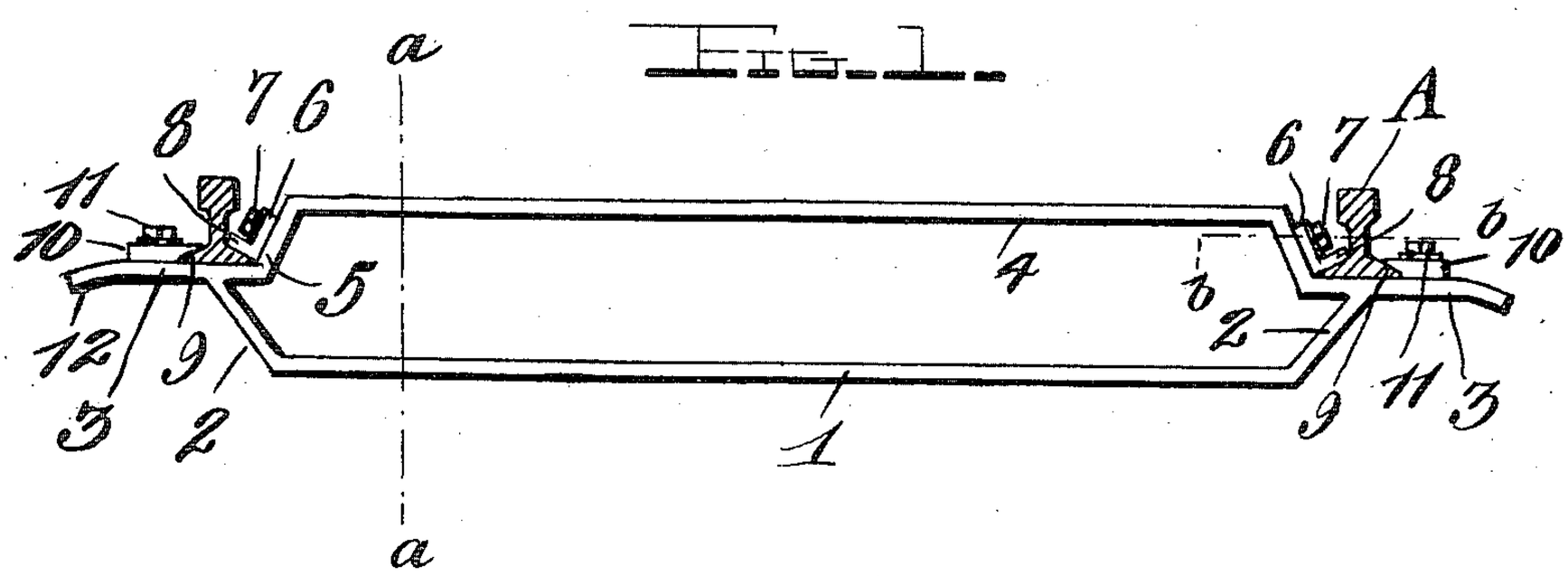


Fig. 2.

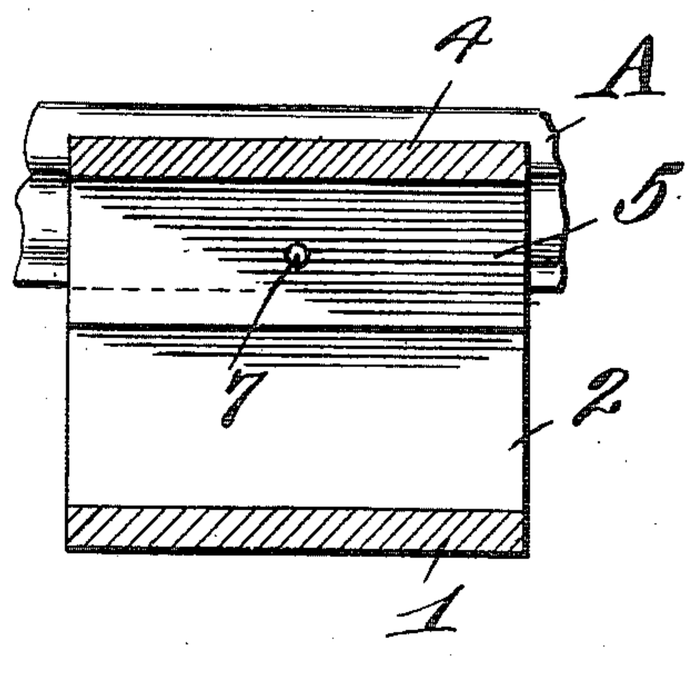
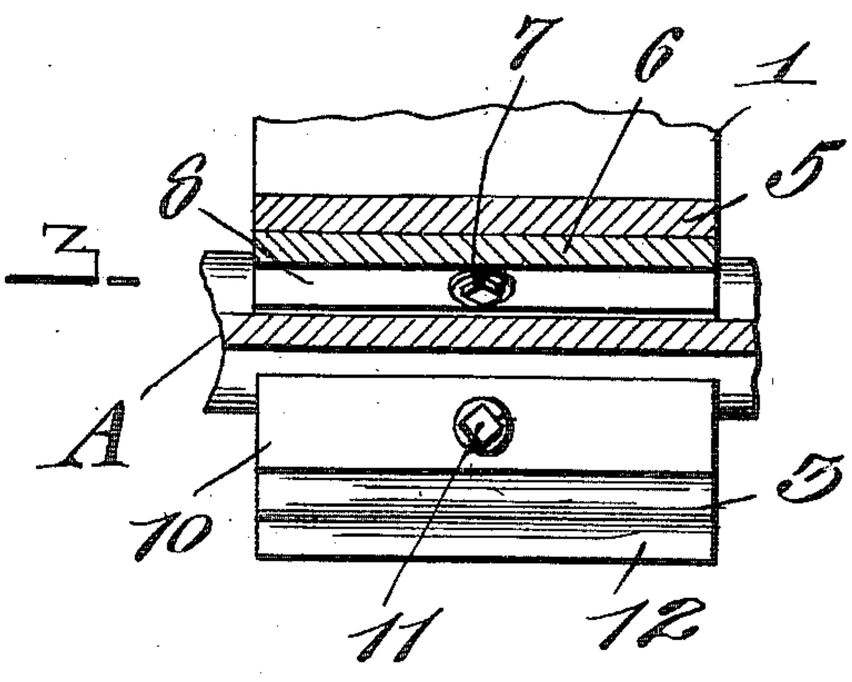


Fig. 3.



Witnesses

Chas. L. Griesbauer.

L. G. Ellis.

Inventor

J. D. Ellis,

By Watson E. Coleman,

Attorney

UNITED STATES PATENT OFFICE.

JACOB D. ELLIS, OF CASTLE ROCK, COLORADO.

RAILWAY-TIE.

994,827. Specification of Letters Patent. **Patented June 13, 1911.**

Application filed April 5, 1911. Serial No. 619,115.

To all whom it may concern:

Be it known that I, JACOB D. ELLIS, a citizen of the United States, residing at Castle Rock, in the county of Douglas and State of Colorado, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification, reference being had to the accompanying drawings.

This invention is an improved metallic railway tie which is resilient so as to yield somewhat to the weight of passing trains, is provided with securing devices which enable the rails to be secured on and removed from the tie without the necessity of moving or disturbing the latter and is also adapted to be readily and firmly anchored in place in the road bed, the invention consisting in the construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawings—Figure 1 is partly a side elevation and partly a sectional view of a tie constructed in accordance with my invention, showing the same in place in a road bed and also showing a pair of rails secured in place on the tie, the rails being indicated in transverse section; Fig. 2 is a vertical transverse sectional view on the plane indicated by the line *a*—*a* of Fig. 1; and Fig. 3 is a horizontal sectional view on the plane indicated by the line *b*—*b* of Fig. 1.

My improved tie is made of metal and is preferably, but not necessarily, an integral structure. In practice, I prefer to make my tie of spring steel or iron. The base 1 of the tie is a bar of suitable dimensions, from the ends of which rise standards 2. These standards incline outwardly from the ends of the base and at their upper ends are rail supporting arms 3 which project outwardly from the said standards and also project inwardly therefrom and over-hang them. The upper side of the tie is formed by a bar 4 which is spaced a suitable distance above the bar 1. The ends of the upper bar 4 are connected to the inner, over-hanging ends of the rail supporting arms 3 by means of downwardly and outwardly inclined braces 5.

The rails A bear on the supporting arms 3 at points above the upper ends of the standards 2. The inner base flanges of the rails are engaged by plates 6 which are secured on the inclined outer sides of the braces 5 by means of bolts 7 and are provided at their lower ends with flanges 8 which bear directly on the upper side of the inner base flanges of the rail. The outer base flanges of the rails are engaged by flanges 9 at the inner ends of plates 10 which are secured on the supporting arms 3 by means of bolts 11.

In practice, the lower portion of the tie is buried in the road bed so that the base bar 1 and the standards 2 are covered, the supporting arms 3 bearing on the surface of the road bed. If desired, these supporting arms may have their outer ends curved downwardly as indicated at 12. The upper bar 4 and the braces 5 extend above the road bed and the said upper bar together with its braces 5, form, in effect, a spring arch which connects the inner ends of the rail supporting arms 3, the lower portion of the tie, including its base bar 1 and standards 2 forming, in effect, a spring supporting arch for the rail supporting arms 3. Hence, my improved tie is rendered resilent and elastic to a certain extent so that it is enabled to yield somewhat to the weight of passing trains, its resilience adding greatly to its durability, reducing the liability of breakage and also causing the cars of the train to ride more easily. The detachable securing plates 6 and 10 enable the rails to be secured on and removed from the tie without the necessity of disturbing the latter, as will be understood.

While I have herein shown and described what I now consider the preferred embodiment of my invention I will have it understood that changes may be made in the form, proportion and construction of the several parts without departing from the spirit of my invention and within the scope of the appended claims.

In practice the bolts 7 and 11 will be locked by a steel spring and lock washers.

Having thus described my invention I claim:

1. A tie comprising a base, standards rising from the ends of the base, rail supports on the upper ends of the standards and an upper bar, spaced from the base and connecting said rail supports.

2. A tie of the class described comprising reversely arched base and upper members and rail supporting devices to which the ends of said base and upper members are connected.

3. A tie of the class described comprising reversely arched base and upper members and rail supporting devices to which the

ends of said base and upper members are connected, the said base and upper members being resilient.

4. A tie comprising a base, standards rising from the ends thereof and inclining outwardly therefrom, rail supports on the upper ends of the standards and extending outwardly and also extending inwardly from the standards, an upper bar, and braces connecting the ends of the upper bar to the inner ends of said rail supports.

5. A tie comprising a base, standards rising from the ends thereof, rail supports on the upper ends of the standards extending outwardly and also extending inwardly therefrom, an upper bar, downwardly and outwardly inclined braces connecting the ends of the upper bar to the inner ends of the rail supports, and rail securing devices detachably secured to the said braces and said rail supports.

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

JACOB D. ELLIS.

Witnesses:
CHARLES S. HEIMANN,
F. A. CURTIS.