

L. E. YATES.
RAILWAY-TIE.

No. 182,984.

Patented Oct. 3, 1876.

Fig 1.

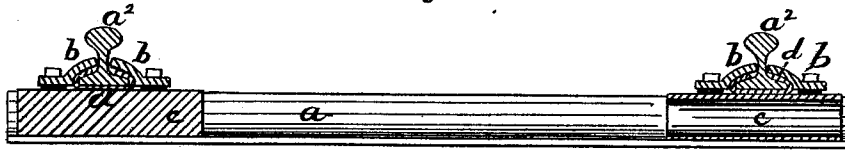


Fig 2.

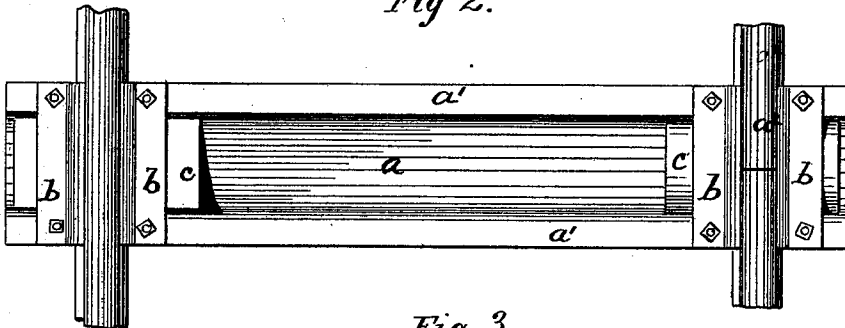


Fig 3.

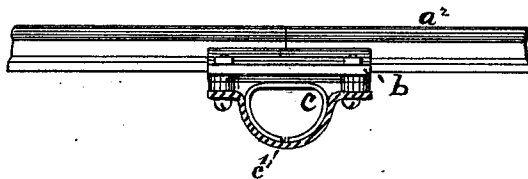


Fig 4.

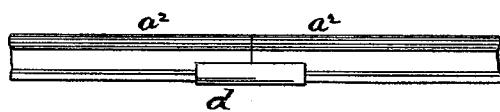


Fig 5.

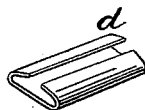


Fig 6.



Fig 7.

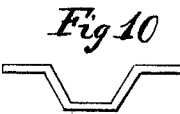


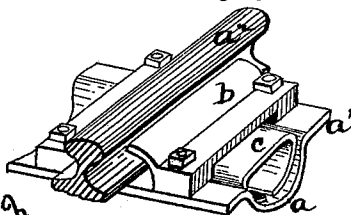
Fig 9.



WITNESSES:

B. C. Pole

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UNITED STATES PATENT OFFICE.

LEONORA E. YATES, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN RAILWAY-TIES.

Specification forming part of Letters Patent No. **182,984**, dated October 3, 1876; application filed April 12, 1876.

To all whom it may concern :

Be it known that I, LEONORA E. YATES, of Washington, in the county of Washington and District of Columbia, have invented certain new and useful Improvements in Railway-Ties and Rail Supports and Fastenings; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in railway ties or sleepers, and to the means of securing the rails thereto, the nature of which will be fully explained hereinafter, reference being made to the accompanying drawings, which represent my invention.

In the drawings, Figure 1 is a longitudinal section; Fig. 2, a plan, and Fig. 3, a cross-section, of a tie with rails attached, and constructed according to my invention. Figs. 4, 5, and 8 are detail views of parts thereof; and Figs. 6, 7, 9, and 10 show modifications of parts.

a is the tie. It is semi-cylindrical in form, and has formed on it the lateral wings or flanges *a*¹ *a*¹, which extend the whole length thereof, and which afford supports for and facilities for securing the rails thereto. It is made of rolled metal, the wings or flanges being turned without sharp angles, thereby avoiding liability of cracking or breaking in the process of rolling.

I prefer the semi-cylindrical form, as shown in cross-section, Fig. 2, because it can be readily laid down and ballasted, and because of the absence of sharp angles in its manufacture. Figs. 6, 7, and 10 show different forms in cross-section which may be used, that shown in Fig. 10 being the preferable, because of the absence of acute angles, which latter are objectionable because of their liability to break or crack in the process of rolling.

*a*² is the rail which rests on the flanges or wings *a*¹ *a*¹. *b b* are clamping-plates, placed across the ends of the tie at the point where the rail *a*² crosses, and they are so formed as to provide facilities for securing them to the flanges or wings *a*¹ *a*¹ and for securely holding the rail *a*² in proper position. They hold the sides of the tie in proper place, preventing any spreading apart thereof.

c is an elastic cushion or spring, placed in the trough or channel of the tie *a*, immediately under the rail *a*². It is made from a sheet of spring metal, bent into tubular form, with the edges left slightly separated, as shown at *c*¹, to permit of the necessary yielding to or vibration under the weight of the passing car. It presses upward firmly against the rail *a*², so that the latter is almost, if not quite, lifted off of the flanges *a*¹. It supports the weight of the passing car, and prevents the crushing of the rail on the tie, as is done in metallic ties of ordinary construction.

The clamping-irons *b b* may be constructed so that the portions which extend over the foot of the rail will fit loosely and permit a slight raising of the rail; or they may have washers placed under their ends, as shown in Fig. 3, or may have solid projections, as shown in Fig. 9, thus permitting the raising of the rail far enough above the tie, so that the entire weight of the car will be sustained by the cushion *c*.

d is an inner chair or sleeve, employed in a tie, on which the ends of two rails meet. It slips over the ends of the two meeting rails, and rests on the cushion *c*. It holds the ends of the rails flush with each other, and prevents any local or uneven pressure on the cushion; and it is held in place by the clamps *b*.

e is a removable plate, which may be placed between the tubular cushion *c* and the tie *a*, to prevent the latter from being worn by the vibration of the former. It may be readily removed and another substituted when necessity requires.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The tubular cushion *c*, constructed as described, in combination with the tie *a* and rails *a*², for the purpose set forth.

2. The sleeve *d*, in combination with rails *a*², clamps *b*, and tubular cushion *c*, for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

LEONORA E. YATES.

Witnesses:

J. T. COLDWELL,
GEORGE E. EMMONS.