J. J. ZIPFEL.

TIE AND RAIL FASTENER.

APPLICATION FILED DEC. 18, 1911.

1,020,470. Patented Mar. 19, 1912.

FIG. 1

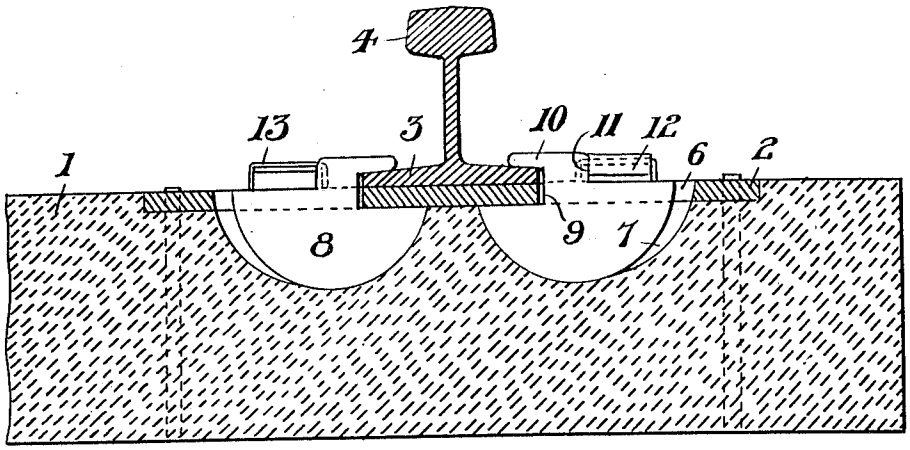


FIG. 2

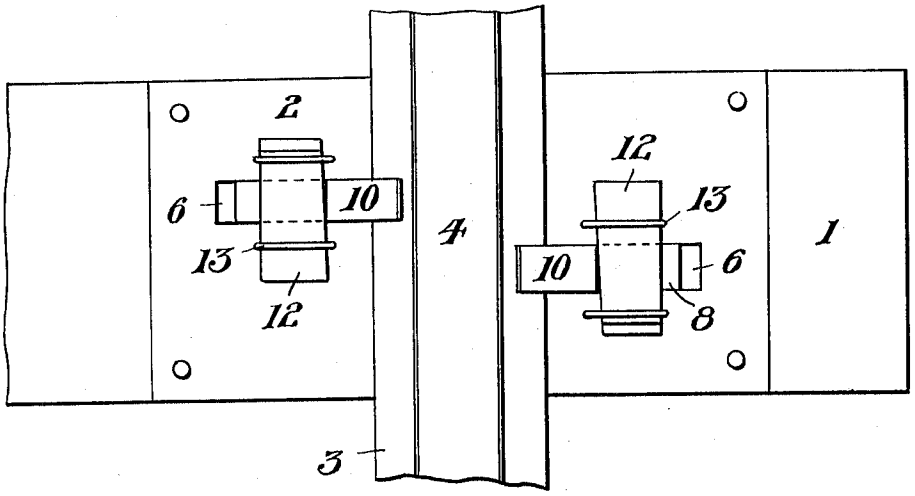
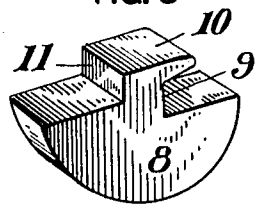


FIG. 3



WITNESSES

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TIE AND RAIL-FASTENER.

1,020,470. Specification of Letters Patent. **Patented Mar. 19, 1912.**

Application filed December 18, 1911. Serial No. 666,372.

To all whom it may concern:

Be it known that I, JACOB J. ZIPFEL, a citizen of the United States of America, residing at Loleta, in the county of Elk and State of Pennsylvania, have invented certain new and useful Improvements in Ties and Rail-Fasteners, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to ties and rail fasteners, and the objects of my invention are, first, to substitute concrete for wood; second, to furnish a concrete tie with novel rail fasteners that can be easily and quickly installed without the use of skilled labor; third, to provide rail fasteners that can be repeatedly adjusted to compensate for wear, and fourth to provide fasteners that are inexpensive to manufacture, durable and highly efficient for retaining rails upon a tie.

I attain the above objects by a mechanical construction that will be hereinafter specifically described and then claimed, and reference will now be had to the drawing, wherein:—

Figure 1 is a longitudinal sectional view of a portion of a tie in accordance with this invention, showing the rail fasteners in side elevation, Fig. 2 is a plan of the same, and Fig. 3 is a perspective view of a detached rail fastener.

A tie in accordance with this invention comprises an oblong concrete body 1 of a shape similar to an ordinary tie. Countersunk in the upper surface of the concrete body 1, adjacent to each end thereof, is a rail plate 2, said plate supporting the base flanges 3 of a rail 4. The rail plate 2 is retained in engagement with the concrete body 1 by vertical pins 5 arranged at the ends of said plate and in proximity to the side walls of the concrete body. The rail plate 2 is provided with oblong openings 6 in communication with semi-circular recesses 7 formed in the concrete body 1, said recesses extending under that portion of the plate 2 that supports the base flanges 3 of the rail 4. The opening 6 and the recess 7, at one end of the plate are staggered or out of alinement with the opening 6 and the recess 7 at the opposite end of the plate, in order not to weaken the construction of the concrete body 1, also to permit of the fasteners engaging the base flanges 3 of the rail 4 at two points calculated to prevent the rail from shifting.

Each fastener comprises a semi-circular body 8 having the inner end thereof cut away, as at 9, whereby the body can be placed in the recess 7 to extend under the rail plate 2. The body 8, adjacent to the cut away portion 9, is provided with a flange 10 that extends on to and engages the base flange 3 of the rail 4. The flange 10 presents a vertical outer wall or shoulder 11 and engaging this shoulder or wall is a tapering key or wedge 12. The key or wedge 12 is driven through parallel staples 13, carried by the rail plate 2, contiguous to the opening 6 thereof, said key or wedge being flat to engage the upper surface of the fastener body 8 and retain said body within the openings 6 and the recess 7. The staples 13 are of a sufficient size to permit of the keys or wedges 12 being repeatedly adjusted to compensate for wear of the fastener body 8 and the concrete body 1. With the fasteners engaging the base flanges of the rails 3, as best shown in Fig. 2, the rail 4 is firmly held upon the rail plate 2 and the alinement of rails can be preserved in connection with a track. The fasteners are made of light and durable metal and can be made of various sizes according to the type of tie or sleeper in connection with which they are used.

What I claim is:—

In a tie and rail fastener, the combination with a concrete body having semi-circular recesses formed therein, of a rail plate counter sunk in the upper surface of said tie adjacent to the ends thereof and adapted to support the base flanges of a rail, said rail plate having openings formed therein registering with the recesses of said concrete body, semi-circular fastener bodies arranged

in the recesses of said concrete body and extending under said rail plate, flanges carried by said fastener bodies and engaging the base flanges of said rail, parallel staples carried by said rail plate at the sides of the openings thereof, and flat tapering keys driven through said staples and engaging in said fastener bodies to retain said bodies in engagement with the base flanges of said rails.

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

JACOB J. ZIPFEL.

Witnesses:
CHARLES B. WETZELL,
ROBERT KELLEY.

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