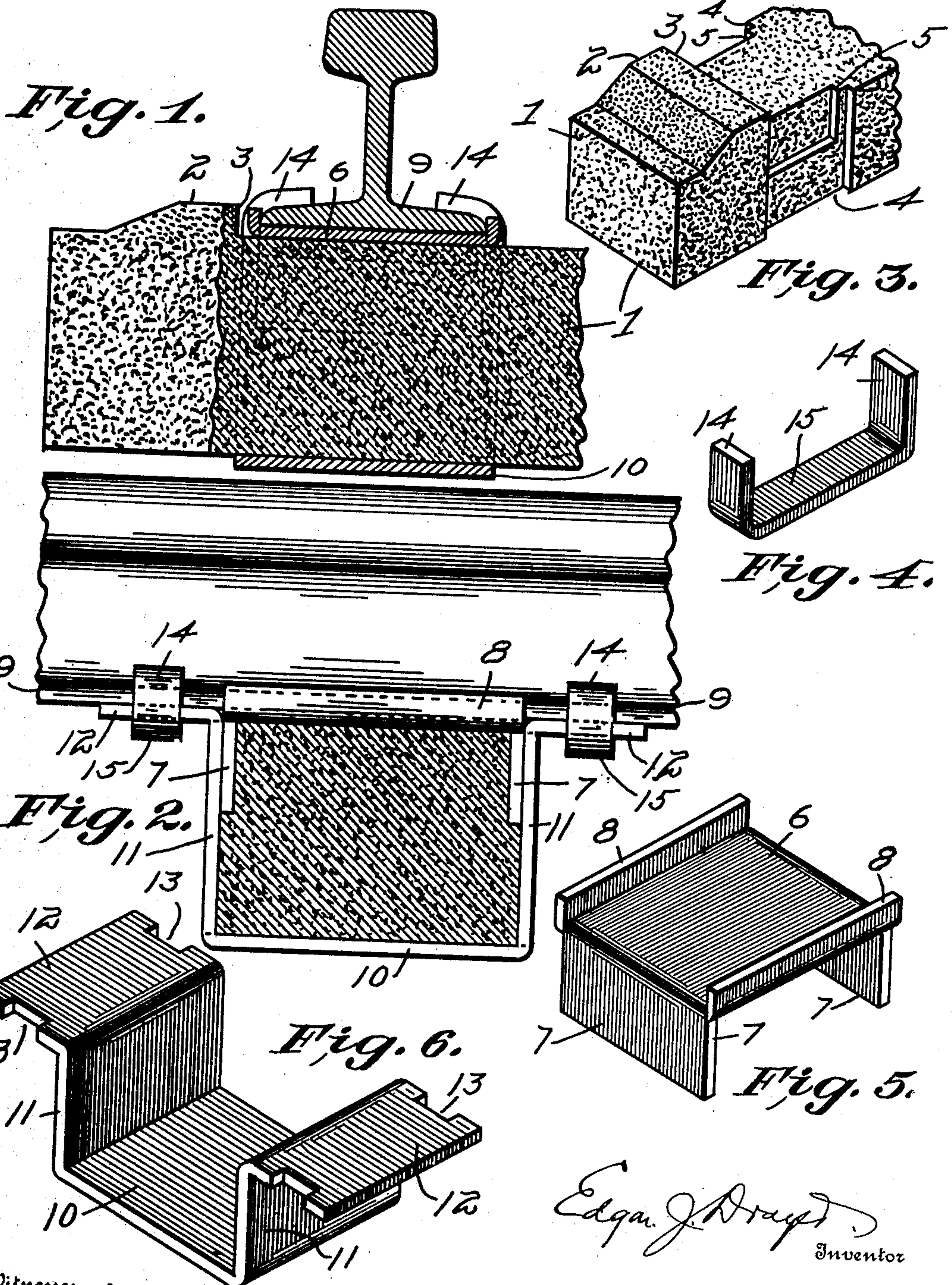


No. 885,456.

PATENTED APR. 21, 1908.

E. J. DRAYER.
RAIL FASTENER FOR CONCRETE TIES.
APPLICATION FILED OCT. 18, 1907.



Witnesses
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UNITED STATES PATENT OFFICE.

EDGAR J. DRAYER, OF DAYTON, OHIO.

RAIL-FASTENER FOR CONCRETE TIES.

No. 885,456.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed October 18, 1907. Serial No. 397,996.

To all whom it may concern:

Be it known that I, EDGAR J. DRAYER, citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Rail-Fasteners for Concrete Ties; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in rail fasteners for attaching railroad rails to concrete cross ties.

The object of the invention is to provide devices for securely clamping the rails to the cross ties without employing bolts and nuts on any part thereof, and to provide means for preventing any slipping of the clamping devices, all as is hereinafter more fully set forth.

In the accompanying drawings,—Figure 1, is a cross sectional view of a rail with my improved clamping devices in position to secure said rail to the concrete tie. Fig. 2, is a sectional view of the concrete tie at right angles to Fig. 1. Fig. 3, is a perspective view of an end of the concrete tie. Fig. 4, is a detail view of one of the clamping bands. Fig. 5, is a detail view of the angular rail plate. Fig. 6, is a detail view of the tie clip.

In a detail description of the invention, similar reference characters indicate corresponding parts.

The ends of the concrete tie 1 have a special construction which adapts them for the purposes of my improved rail fastener, such special construction consisting of a raised portion 2 on the upper surface of the tie and near each end thereof to form shoulders 3 on the upper side of the tie. Each of the vertical sides of the tie is provided with recesses 4 and 5, the former of which extends throughout the depth of the tie, and the recesses 5 extend from the upper side of the tie downwardly to approximately half the depth of the tie. The rail plate 6 lies on top of the tie with the down-turned ends 7 thereof within the recesses 5 and the up-turned flanges 8 engaging the edges of the base 9 of the rail. The tie clip 10 embraces the lower side of the tie and the vertical sides 11 of said

clip lie within the recesses 4 in the tie and on the outside of the down-turned ends 7 of the rail plate. Extending laterally from the upper end of the vertical sides of the tie clip, are flanges 12 which lie below the rail flange 9 on each side of the tie. These outwardly-turned ends 12 of said tie clip have notches 13 in their opposite ends which receive the ends 14 of the clamping band 15, there being two of these clamping bands associated with each rail plate 6 and tie clip 10. The body portion of the clamping band 15 embraces the lower sides of the flanges 12 of the tie clip, and the ends 14 project through the slots or notches 13 and are bent over the upper side of the rail flange 9. These clamping bands securely clamp the tie clip to the flange of the rail and by reason of the notches 13 they hold said tie clip from slipping. The recesses 4 on the opposite sides of the concrete tie also prevent the tie clip from shifting on the tie, and the shoulders or raised portions 2 on the ends of the tie provide additional means for preventing any slipping of the fastener which might be due to a disposition of the outer rail to spread in going around curves.

I claim:

1. A rail fastener for concrete ties comprising a tie clip embracing the bottom and vertical sides of the tie and terminating in outwardly-extending ends in a plane with the upper surface of the tie, a rail plate between the rail and upper surface of the tie and embracing the edges of the rail flange, and clamping bands embracing the outwardly-extending ends of the tie clip and extending over the rail flange, substantially as specified.

2. A rail fastener for concrete ties comprising a tie clip embracing the bottom and vertical sides of the tie and terminating in outwardly-extending ends in a plane with the upper surface of the tie, and clamping bands embracing said outwardly-extended ends of the tie clip and holding said ends in contact with the lower side of the rail flange, substantially as specified.

3. In a rail fastener for concrete ties, the combination with such a tie having recesses in its vertical sides, of a tie clip embracing the lower side of the tie, said clip having portions lying within the recesses in the tie and the ends of said clip extending outwardly in a plane with the upper surface of the tie, and clamping bands embracing said

outwardly-extended ends of the clip and holding the same to the rail flange, substantially as specified.

4. In a rail fastener for concrete ties, a tie clip the lower side of which embraces the bottom of the tie, and the vertical sides of which embrace the vertical sides of the tie, and the ends of which extend outwardly and embrace the bottom of the rail flange on each side of the tie, said outwardly-extending ends having notches in opposite edges thereof, and clamping bands embracing the lower sides of said outwardly-extending ends projecting through the notches in said ends and overlapping the rail flange, substantially as set forth.

5. In a rail fastener for concrete ties, a tie clip embracing the lower and vertical sides of the tie, the ends of said clip extending outwardly from the tie and approximately in a plane with the upper surface of the tie, a rail plate interposed between the upper surface of the tie and the flange of the rail, the ends of said rail plate embracing the sides of the tie and the longitudinal edges of said rail plate embracing the edges of the rail flange, and clamping bands embracing the ends of the tie clip lying below the rail flange and rigidly holding said tie clip to the tie and the rail, substantially as specified.

6. In a fastener for concrete ties, the combination with such a tie having a shoulder on the upper side and adjacent to each end of the tie, and a recess on the vertical sides adjacent to each end, a tie clip embracing the lower side of the tie adjacent to each end,

said clip having vertical sides lying within the side recesses in the tie, and the ends of said tie clip extending outwardly approximately in a plane with the upper side of the tie, a rail plate lying between the upper side of the tie and the base of the rail adjacent to the shoulder on the upper side of the tie, said rail plate being up-turned at its sides to embrace the edges of the rail base, and clamping bands securing the ends of the tie clip to the rail base, substantially as specified.

7. In a fastener for concrete ties, the combination with such a tie having its ends provided with shoulders and recesses in the vertical sides thereof, a tie clip embracing the lower and vertical sides of the rail and lying within the recesses in the vertical sides of the tie, the ends of said tie clip extending outwardly approximately in a plane with the upper side of the tie and having notches in opposite portions of said ends, a rail plate lying beneath the rail base on top of the tie, the ends of said plate embracing the opposite sides of the tie and lying within the recesses in said tie, and clamping bands embracing the out-turned ends of the tie clip and extending through the notches in said ends and clamping the upper side of the base of the rail, substantially as specified.

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

EDGAR J. DRAYER.

Witnesses:

MATTHEW SIEBLER,
R. J. McCARTY.