B. F. TIZZARD & H. G. EGBERT.

RAIL JOINT AND FASTENER.

APPLICATION FILED MAR. 13, 1912.

1,046,380. Patented Dec. 3, 1912.

Fig. 1

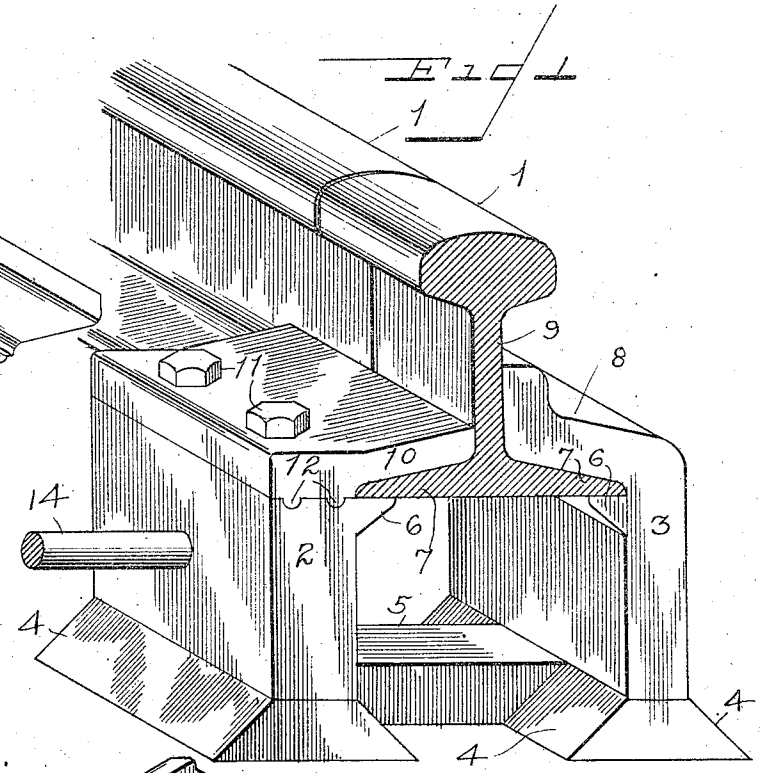


Fig. 3

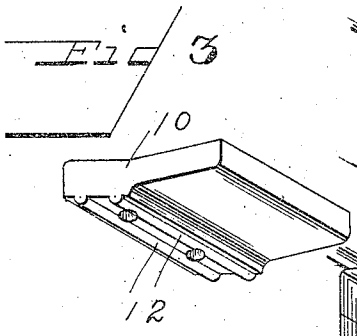


Fig. 2.

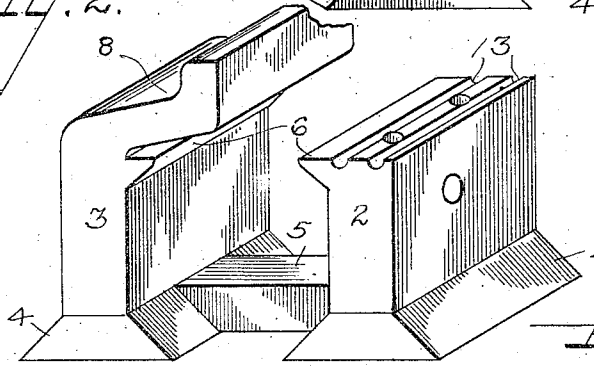
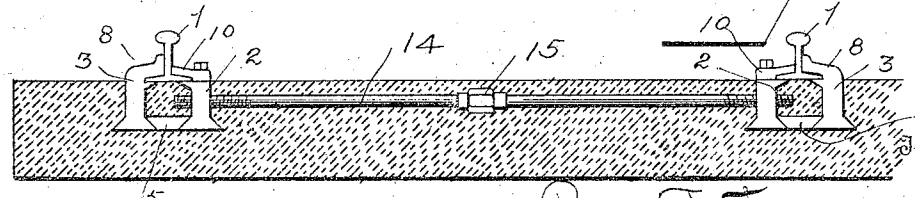


Fig. 4.



Witnesses:
Effie B. Luttringer
Alfred M. Gray

Inventors
Benj. F. Tizzard and
By Harry G. Egbert
F. L. Walker Attorney

UNITED STATES PATENT OFFICE.

BENJAMIN F. TIZZARD, OF DAYTON, AND HARRY G. EGBERT, OF CINCINNATI, OHIO.

RAIL JOINT AND FASTENER.

1,046,380. Specification of Letters Patent. Patented Dec. 3, 1912.

Application filed March 13, 1912. Serial No. 683,639.

To all whom it may concern:

Be it known that we, BENJAMIN F. TIZZARD and HARRY G. EGBERT, both citizens of the United States, residing at Dayton, in the county of Montgomery, and Cincinnati, county of Hamilton, and State of Ohio, respectively, have invented certain new and useful Improvements in Rail Joints and Fasteners, of which the following is a specification.

Our invention relates to railway appliances and particularly to rail fastening means adapted to secure the rail throughout its length to the ties, or to the road bed, and also for securing the rails in registry one with the other at their juncture points.

The object of the invention is to simplify the structure as well as the means and mode of operation of such devices whereby they will not only be cheapened in construction, but will be more efficient in use, permitting the rail to be easily and quickly adjusted to position or removed therefrom, affording great strength and durability, adapted to prevent the spreading of the rails, while at the same time readily permitting the expansion and contraction thereof due to the varying thermal conditions, and unlikely to get out of repair.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention consists of the features of construction, the parts and combinations thereof, and the mode of operation, or their equivalents, as hereinafter described and set forth in the claims.

In the drawings, Figure 1 is a perspective view of one of the rail supporting fastening units with the rail engaged therewith. Fig. 2 is a perspective view of the unit from which the rail has been removed. Fig. 3 is a detail perspective view of the cap plate by which the rail is secured in position. Fig. 4 is a transverse sectional view of the railway showing the construction as embedded in a road bed of grouting or in a concrete tie.

Like parts are indicated by similar characters of reference throughout the several views.

Referring to the drawing, 1 is a railway rail to be secured, which is engaged by and supported upon the units hereafter described. The units forming the subject matter hereof are adapted to be embedded in a road bed of grouting or in concrete railway ties. The device comprises two pedestal like members 2 and 3 having enlarged bases or lateral extending shoulders 4 by which the pedestal like members 2 and 3 are securely anchored in the grouting of the road bed or within the concrete tie. The members 2 and 3 are connected by a transverse connecting bar 5 whereby the members 2 and 3 are maintained rigid in their relation one with the other and in conjunction with the transverse connecting bar 5 will form a substantially U shaped integral unit. The transverse connecting bar 5 being located adjacent to the base of the members 2 and 3 permits the concrete or grouting to flow above said transverse bar thereby further anchoring the unit in the road bed or tie. Each of the members 2 and 3 is provided with an inward projecting ledge 6 upon which the rail will rest. It is to be understood that the rail is further supported intermediate the ledges 6 upon the grouting or concrete which has flowed between the members 2 and 3 and above the transverse bar 5. In locating the unit in the road bed or concrete tie, the member 3 is placed to the outer side of the rail. This member 3 is extended upward and inward as shown at 8 over the bottom flange 7 of the rail and bears against the vertical web 9 of the rail to positively secure the rail against lateral displacement. This construction will effectually prevent the spreading of the rails when subjected to great strain. The innermost member 2 terminates in a plane substantially level with the under side of the rail. A cap plate 10 is provided which is secured to the member 2 by means of a stud bolt 11 after rail 1 has been placed in position. The cap plate 10 extends over the bottom flange of the rail upon the inner side thereof to a point adjacent to the web 9. In order to insure proper alinement of the cap plate 10 the said plate is provided with longitudinal beads or ribs 12 which engage corresponding grooved depressions 13 in the top of the member 2.

It is to be understood that the units thus described are arranged in pairs, one opposite the other, but oppositely disposed, whereby the members 3 will be turned to the outward extreme sides. In order to facilitate the adjustment of the oppositely disposed members to and from each other to insure uniform gage in constructing the roadway there is provided a transverse con-

necting rod 14, which engages the members 2 of the oppositely disposed units. The connecting rod 14 is preferably provided with right and left hand threads at its extremities, and in the center is provided with a suitable head 15 to be engaged by a wrench or spanner, whereby the rod may be rotated to adjust the units to and from each other. It is obvious that in lieu of the right and left hand threaded connecting rod 14 there may be employed an extended connecting bolt of ordinary construction.

In the event that the units herein described are employed in a reinforced concrete railway tie, the connecting rod 14 may be dispensed with.

It is to be understood that when in use the units are to be embedded in the grouting of the roadway or in the concrete of the tie to point flush with the top of the member 2. The devices are employed at various points throughout the length of the rail and also at the junction point of adjacent rails at which position the portion 8 and the cap plate 10 will overlap the extremities of both rails. It is to be noted that while this construction will positively retain the rail against lateral displacement in either direction or any vertical movement or yielding of the rail, it will nevertheless readily permit longitudinal adjustment of the rail to compensate for expansion and contraction. The device may be varied in its proportion to accommodate rails of different sizes and weights and to comply with different conditions of use.

From the above description it will be apparent that there is thus produced a rail joint and fastening means of the character described, possessing the particular features of advantages before enumerated as desirable, but which obviously is susceptible of modification in its form, proportion, detail construction and arrangement of parts, without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute, the invention has been herein described in language more or less specific as to structural features, it is to be understood that the invention is not limited to any specific details, but that the means and mechanism herein described, comprise but one mode of putting the invention into effect, and the invention is therefore claimed broadly in any of its possible forms or modifications within the scope of the appended claims.

Having thus described our invention, we claim:

1. In a rail fastening device, two spaced pedestal like members having enlarged bases and connected by an intermediate connecting portion to form a substantially U shaped supporting member, inward projecting ledges on said pedestal like members upon which the rail is adapted to rest, an extension on one side of the members adapted to overhang the bottom flange of the rail on one side, and a removable plate on the other member adapted to overhang the bottom flange of the rail on the opposite side, substantially as specified.

2. In a rail fastening device, supporting members arranged in pairs upon which the parallel rails are adapted to rest, integral extensions on said supports adapted to engage the bottom flanges of the rails on the extreme sides of said parallel rails, removable cap plates carried by the supports and engaging the bottom flanges of the rails on the inner sides of the parallel rails, and a screw threaded adjusting link connecting the said supporting members whereby the members may be adjusted to and from each other, substantially as specified.

In testimony whereof, we have hereunto set our hands this 6th day of March 1912.

BENJAMIN F. TIZZARD.
H. G. EGBERT.

Witnesses:
HARRY F. NOLAN,
F. L. WALKER.