PUBLISHED
MAY 25, 1943.
BY A. P. C.

V. RETTERATH
RAIL FASTENING
Filed Nov. 4, 1940

Serial No.
364,319

Fig. 1

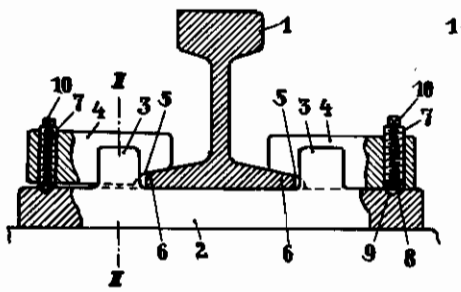


Fig. 2

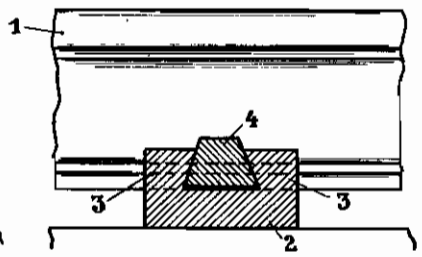


Fig. 3

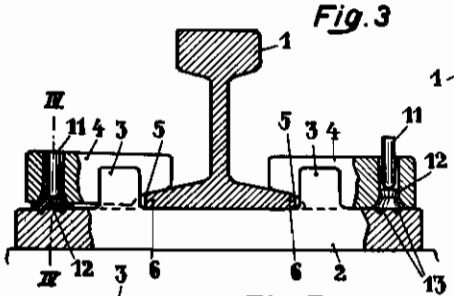


Fig. 4

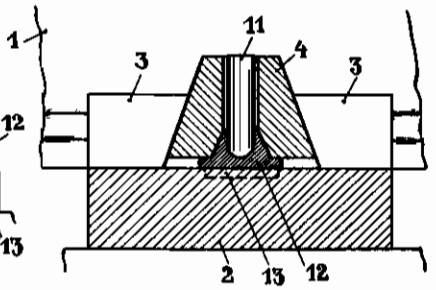


Fig. 5

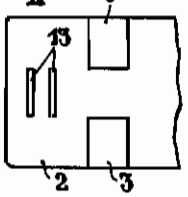


Fig. 7

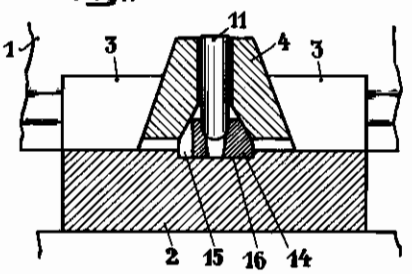
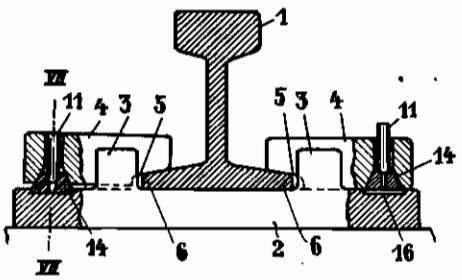


Fig. 6



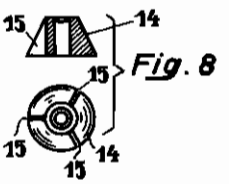


Fig. 8

Inventor:
V. Retterath
By E. F. Vandeventh
Atty

Published May 25, 1943

Serial No. 364,319

ALIEN PROPERTY CUSTODIAN

RAIL FASTENING

Valentin Retterath, Iversheim, near Munstereifel, Germany; vested in the Alien Property Custodian

Application filed November 4, 1940

This invention relates to a rail fastening.

Among the numerous types of rail fastenings known preference deserve those that avoid the use of screws and hold down the rail base by means of a locking member guided in a rib of an iron tie or a locking plate transversely to the longitudinal direction of the rail, as indicated for instance in German Patent No. 617,882. Rail fastenings of this class are of exceedingly simple construction, permit easy and rapid installation of the rails and nevertheless insure sufficient protection against unauthorized detachment.

In contradistinction to these known rail fastenings, however, in which the usualy slotted locking member is held in the guide rib by a key, etc. the invention proposes to provide a locking member acting as a tension lever.

The invention attains its object by providing the locking member resting with one end on the rail base on its other end with means for pressing off this end from the tie or other support, so that the locking member acts as a double-armed tension lever whose fulcrum is located in the guide rib. In this way the rail base is fixed with increased security to its bed, even if the locking member is not placed in accurate position. This arrangement facilitates, moreover, the installation of the rails and increases both the holding effect and the security of the construction, since the locking member is not weakened by slots, etc. The means for pressing off one end of the locking member may be of various types, and several possibilities are described below with reference to the accompanying drawing, in which

Figure 1 is an elevation, partly in longitudinal section, of a rail fastening according to the invention;

Fig. 2, a vertical cross section on the line II—II of Fig. 1;

Figs. 3 to 5 show a modification, Fig. 3 being an elevation, partly in longitudinal section; Fig. 4, a vertical cross section on the line IV—IV, of Fig. 3, on an enlarged scale; and Fig. 5, a top view thereof;

Figs. 6 to 8 show another modification, Fig. 6 being an elevation, partly in longitudinal section; Fig. 7, a vertical cross section on the line VII—VII, of Fig. 6, on an enlarged scale; and Fig. 8, a detail view.

Referring to Figs. 1 and 2, the rail 1 shown in cross section rests on a tie 2 provided with a guide support 3 having a dovetailed recess for the reception of a correspondingly shaped solid locking member 4. The end of the member 4 facing the rail base possesses on its underside a clearance 5 for accommodating the portion 6 of the rail base to be engaged by the locking member 4. The end of the member 4 averted from the rail base has a threaded bore for the introduction of a lifting screw 7.

Fig. 1 shows to the right the inserted but not yet forced out locking member 4 and to the left the member 4 in tensioned position. The locking member 4 is first advanced until its front end engages the rail base to a sufficient extent without paying particular attention to placing the member in an absolutely accurate position. Then the screw 7 is tightened so that its lower spherical, conical, etc. end 8 enters a recess 9 of the tie 2 and, finally, the locking member 4 is moved with the fulcrum located within range of the support 3.

After the locking member 4 acting as a double-armed lever has been fixed the screw 7 may be secured against arbitrary turning by removing for instanee the square 10.

The rail base is thus securely fixed, and the end of the screw 7 having entered the recess 9 prevents longitudinal displacement of the member 4 in the guide 3.

In the construction shown in Figs. 3 to 5 the rail 1 rests again on a tie 2 provided with a guide support 3 having a dovetailed recess for the reception of a correpondingly shaped locking member 4 which engages the portion 6 of the rail base.

Forcing out or lifting is effected with the aid of a driving pin 11 which acts upon a soft metal insertion 12 arranged in a recess provided in the respective end of the member 4 and proceeding from the underside thereof. The soft metal 12 is not only forced up in the narrow annular gap formed between the pin 11 and its bore in the member 4, but caused also to spread downwardly on the underside of the member 4 so as to lift the member 4 off from its support 2.

The means for preventing longitudinal displacement of the member 4 comprise slots 13 disposed transversely to the direction of displacement in the tie 2 within range of the soft metal insertion 12, having wedgelike cross sections and being filled with the soft metal when acted upon by the pin 11.

In the construction shown in Figs. 6 to 8, 1 is the rail, 2 the tie, 3 the guide support and 4 the locking member. A driving pin 11 introduced into a bore of the member 4 serves again for lifting the respective end of the member 4 from the tie 2. The pin 11 enters a conical in-

sertion 14 made of steel, etc. disposed in a conical recess proceeding from the underside of the member 4 within range of the bore for the pin 11. The insertion 14 has radial slots 15 and, when the pin 11 is driven in, is advanced downwardly and simultaneously spread out, whereby the end of the member 4 is lifted from the tie 2 and held in lifted position.

Longitudinal displacement of the member 4 when in tensioned position is prevented by a platelike recess 16 provided in the tie 2 and engaged by the insertion 14 on being driven by the pin 11.

VALENTIN RETTERATH.