Dec. 24, 1968 J. DARGIER DE SAINT VAULRY 3,417,922

DEVICES FOR FIXING RAILROAD RAILS TO THEIR SLEEPERS

Filed Oct. 21, 1966 2 Sheets-Sheet 1

Fig. 1.

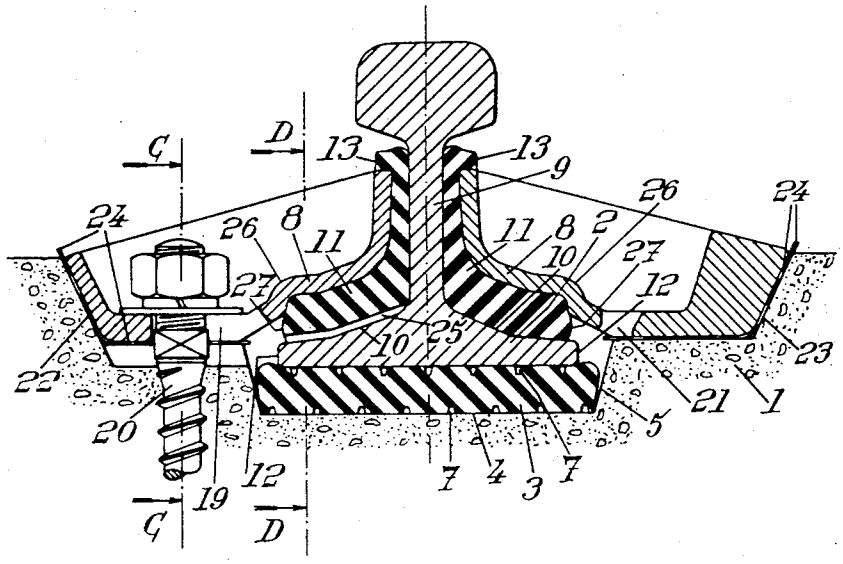
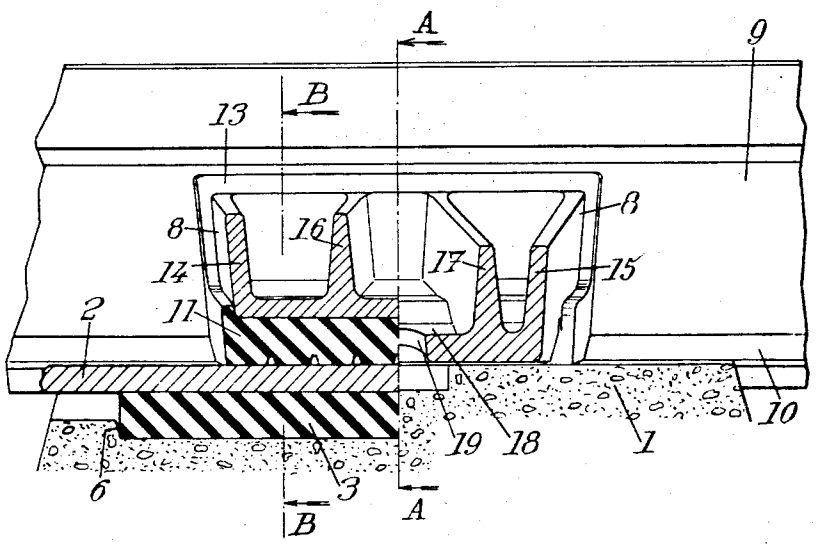


Fig. 2.



Dec. 24, 1968 J. DARGIER DE SAINT VAULRY 3,417,922
DEVICES FOR FIXING RAILROAD RAILS TO THEIR SLEEPERS
Filed Oct. 21, 1966 2 Sheets-Sheet 2

Fig. 3.

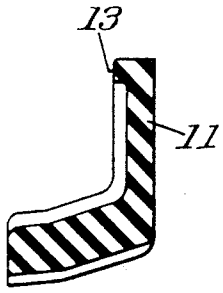


Fig. 4.

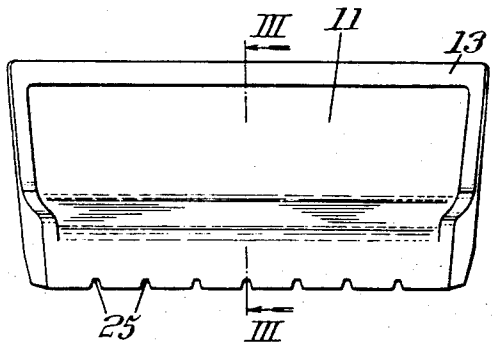
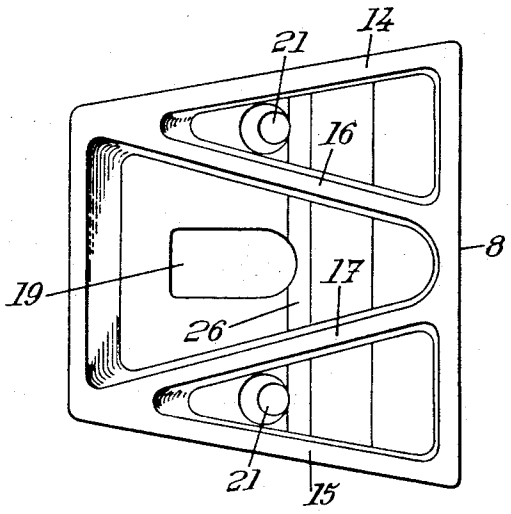


Fig. 5.



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DEVICES FOR FIXING RAILROAD RAILS TO THEIR SLEEPERS

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Claims priority, application France, Nov. 5, 1965, 37,495
5 Claims. (Cl. 238—292)

ABSTRACT OF THE DISCLOSURE

The device is provided with a sole of resilient material mounted in fixed position on a support such as a sleeper and supporting the rail base flange. Two clips are rigidly secured to said support, respectively on opposite sides of said rail. Two resilient material packings are tightly held between said clips, respectively, and said rail, said packings being of L-shaped cross-section and bearing upon the rail web and the upper face of the rail base flange.

The present invention relates to devices for fixing railroad rails upon their supports (transverse and longitudinal sleepers and the like).

The chief object of the present invention is to provide a fixation device of this kind which absorbs vibrations and gives a high coefficient of safety.

According to the present invention, with such a device, the base flange of the rail rests upon a sole of rubber or another resilient material, preferably fitting tightly in a housing of the sleeper, and the web of the rail is held between two clips with the interposition of packings of rubber or another resilient material, of L-shaped cross section in such a manner that the pressure received from the clips is applied both to the web and to the upper face of the base flange of the rail, the edges of said base flange preferably remaining free.

According to another feature of the present invention the resilient packings are provided with flanges forming abutments to hold the clips and to avoid any slipping thereof.

According to still another feature of the present invention, the clips are cup-shaped and provided with ribs transverse to the rail.

A preferred embodiment of the present invention will be hereinafter described with reference to the appended drawings, given merely by way of example, and in which:

FIG. 1 is a cross section of a rail and its fixation device on a sleeper, the left hand half portion of said FIG. 1 being a cross section on the line A—A of FIG. 2 and the right hand half portion a cross section on the line B—B of FIG. 2;

FIG. 2 is a longitudinal vertical section corresponding to FIG. 1, the left hand half portion of FIG. 2 being a section on the line D—D of FIG. 1 and the right hand half portion a section on the line C—C of FIG. 1;

FIG. 3 is a part sectional view of rubber packing of the device of FIGS. 1 and 2;

FIG. 4 is a side elevation of said rubber packing;

FIG. 5 separately shows, in plan view, one of the fixation clips of the fixation device.

It will be supposed that the rail is to be secured to a sleeper **1**.

The base flange **2** of the rail is supported by a thick rubber sole **3** which preferably, as shown, is engaged in a housing **4** provided in sleeper **1**, so as to prevent any slipping of said sole.

This housing **4**, the edges of which are shown in FIGS. 1 and 2 at **5** and **6** extends into sleeper **1** to a depth sufficient with respect to the housings intended for the fixation of the clips which will be hereinafter referred to.

The surface of sole **3** is advantageously provided with channels or grooves **7** to improve the flexibility thereof.

In order to secure the rail in position, use is made of clips **8** intended to exert a pressure laterally both upon the web **9** and upon the upper surface **10** of the base flange of the rail. Between said rail and said clips **8**, there are rubber packings **11**, of L-shaped cross section, which bear both upon the web and upon the base flanges of the rail. Preferably, as shown, the side edges **12** of the rail base flange are free.

The clips are made of any suitable shape to permit of exerting the desired presure upon the above mentioned L-shaped surfaces.

In order to avoid slipping of rubber packings **11**, at least a portion of the surface of said packings adjacent to the clips is provided with flanges such as **13**.

Packings **11** are advantageously provided with grooves **25** increasing their flexibility.

Preferably, as shown, the clips are cup-shaped, with transverse partitions or stiffening ribs such as **14**, **15**, **16**, **17** extending as far as the bottom **18** of the clip. Thus the clip is divided into three chambers the central one of which is provided with an oblong hole **19** for the passage of a bolt **20**. The bottom **18** of the clip is stepped at **26** so as to fit against the edges **27** of packings **11**.

Rain in the above mentioned chambers can be evacuated through hole **19** or through holes **21**.

Finally, between every clip **8** and the walls **22**, **23** of the housings intended to accommodate them in sleeper **1**, there is preferably interposed at least one thin sheet of rubber **24** which permits compensation of the irregularities in the surfaces in contact. Bitumen may also be used for this purpose.

The device according to the present invention, when the bolts such as **20** are tightened and provided that the respective thicknesses of sole **3** and packings **11** are suitably calculated, permits of ensuring and maintaining contact of the resilient elements with the clips and the base flanges of the rails when a train, even very heavy, passes along the rails, fixation of said rail being thus obtained without possible tipping of the latter.

The device according to the present invention reduces the noise, keeps exactly the distance between the rails of the track and permits of establishing track circuits.

In a general manner while the above mentioned description discloses what is deemed to be a practical and efficient embodiment of the present invention, said invention is not limited thereto as there might be changes made in the arrangement, disposition and form of the parts without departing from the principle of the invention as comprehended within the scope of the appended claims.

What I claim is:

1. For fixation of a rail having a base flange and an upstanding web to a support provided with a housing having a bottom and upwardly and outwardly inclined side walls, a device which comprises, in combination:

a sole of resilient material mounted in fixed position on a part of the bottom of said support and adapted to support the rail base flange, with the edges of said rail base flanges left free,

two clips, each including a bottom portion, mounted in said housing respectively on opposite sides of said rail, said clips including stiffening means and being rigidly secured, by fastening means, to said support, with their said bottom portions cooperating with another part of the bottom of said housing than the part on which said sole is mounted,

two resilient material packings tightly held between said clips, respectively, and said rail, said packings being of L-shaped cross section and bearing upon substantially the entire height of the rail web and

upon substantially the entire width of the upper face of the rail base flange,

said clips each having an upwardly and outwardly inclined side wall respectively corresponding to and adapted to cooperate with an upwardly and outwardly inclined side wall of said support housing, whereby tightening of said fastening means urges said clips downwardly and inwardly so that said clips apply pressure downwardly and inwardly against said resilient packings.

2. A device according to claim **1** wherein the clips are cup-shaped, and said stiffening means comprise ribs transverse to the rail.

3. A device according to claim **2** wherein the cup-shaped clip is divided into three chambers, and said fastening means comprises a bolt engaged in the central chamber for fixation to said support.

4. A device according to claim **2** wherein said cup-shaped clip is provided with holes for the evacuation of rain water.

5. A device according to claim **1** further including a relatively thin resilient sheet provided between said clips and the cooperating surfaces of the support in which said clips are fitted.

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U.S. Cl. X.R.

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