March 28, 1950 O. SANN 2,502,281

RAIL FASTENING DEVICE

Filed June 11, 1947

FIG. 1.

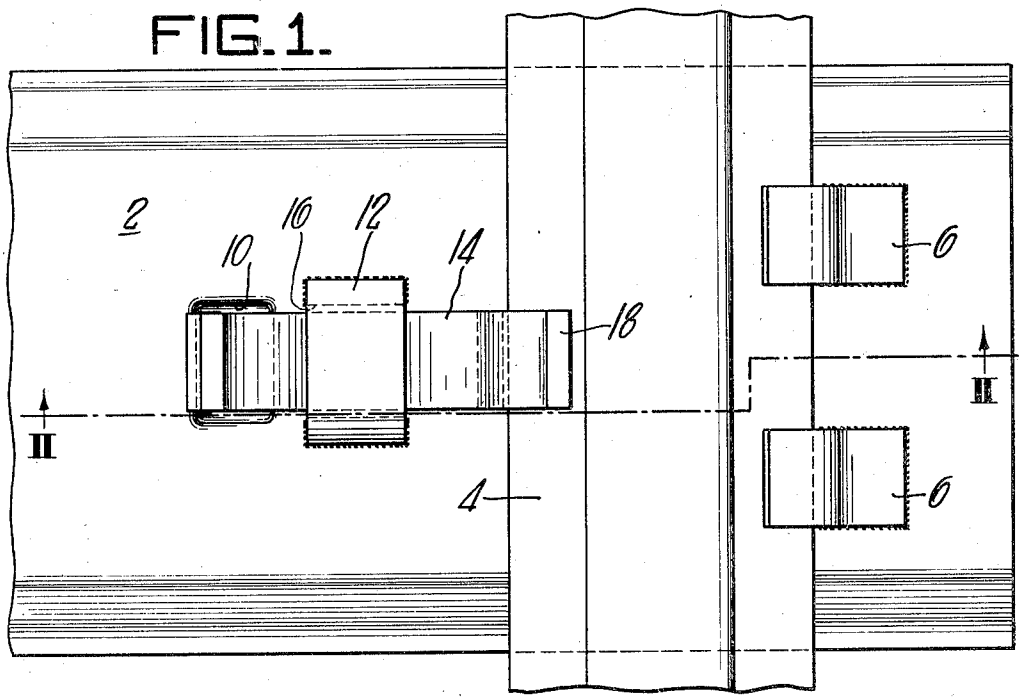


FIG. 2.

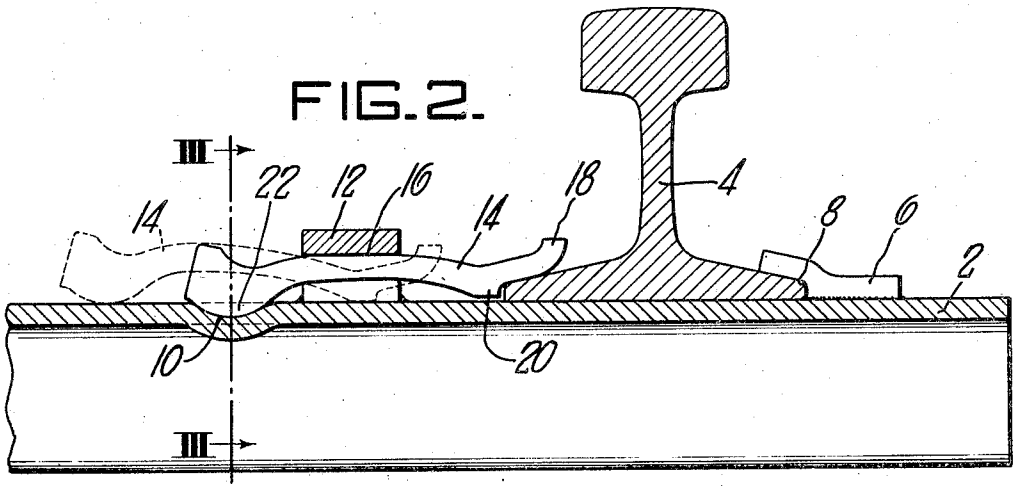
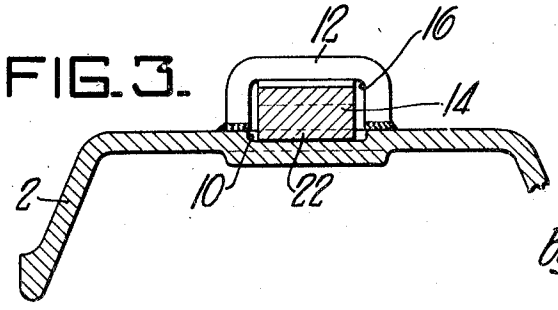


FIG. 3.



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RAIL FASTENING DEVICE

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4 Claims. (Cl. 238—349)

1

This invention relates to a rail fastening device and more particularly to such a device for fastening a rail to a metallic tie. In mines and quarries much of the railroad track used is moved to new positions as work advances. To facilitate the assembly and disassembly of this track, the rails are set upon metallic ties. Since the ground surface is frequently rough and the track extends over considerable areas, detachable pieces used to fasten the rail to the tie become mislaid or lost. Since parts storage is ordinarily not available this causes delay in assembling the tracks. Nonresilient rotatable clips are normally used to fasten the rails to the tie and if they are not lost they become loose and ineffective after they have been used several times.

It is an object of my invention to provide a rail fastening device in which the rail fastening means are permanently fastened to the tie.

Another object is to provide such a device in which resilient clips are used to fasten the rail to the tie.

These and other objects will be more apparent after referring to the following specification and attached drawings, in which:

Figure 1 is a top plan view;

Figure 2 is a sectional elevation taken on line II—II of Figure 1; and

Figure 3 is a sectional view taken on the line III—III of Figure 2.

Referring more particularly to the drawings the reference numeral 2 indicates a metallic tie on which is mounted a rail 4. A pair of clamps 6 is rigidly secured to the tie 2 on one side of the rail 4 with one end of the base of the rail being received in a socket 8. A depression 10 is provided in the tie 2 on the opposite side of the rail 4 and an inverted U-shaped member 12 is welded to the tie 2 at a point between the depression 10 and the base of the rail. A spring clip 14 passes through an opening 16 in the member 12 and extends from both ends thereof. The clip 14 has an arched construction and that end adjacent the rail 4 has a turned-up portion 18. A downwardly extending projection 20 is provided adjacent the portion 18, the projection and turned-up portion having a greater overall height than the inner height of the member 12. The opposite end of the clip is provided with a downwardly extending protuberance 22, the thickness of the clip at this point being greater than the inner height of the member 12.

In assembly the spring clip 14 is laid on the tie 2 and the inverted U-shaped member 12 is placed over the top thereof and welded to the tie 2. If

2

electrical flash or spot welding methods are used, sheet insulating and fireproof materials are placed between the clip 14 and the member 12 to prevent the clip from adhering to the member 12 during welding. Gas welding or electric arc welding does not require this insulation. Due to the dimensions of the ends of the clip 14 it cannot then be removed or become loose from the tie. In fastening the rail to the tie, the spring clip 14 is forced from the dotted line position shown in Figure 2 to the full line position, the arched construction of the clip being such that it is compressed between the under surface 16 of the member 12 and the socket 10 and the top of the rail flange. In this position the end 18 of the clip extends over the top of the rail flange with the projection 20 bearing against the end of the rail flange and the protuberance 22 rests in the socket 10. This construction prevents the clip 14 from backing out from the position shown in full lines in Figure 2 while the semi-elastic characteristic of the clip permits a certain degree of undulation under traffic and a certain amount of vertical movement of the rail without the clip being sheared off. When it is desired to remove the rail, a crowbar or other device is used to force the clip 14 from the position shown in full lines to the position shown in dotted lines in Figure 2.

While one embodiment of my invention has been shown and described, it will be apparent that other adaptations and modifications may be made without departing from the scope of the following claims.

I claim:

1. A rail fastening device for fastening a rail to a metallic tie, which device comprises an inverted substantially U-shaped member securely fastened to said tie, an elongated spring clip extending through said inverted member and projecting from both ends thereof, one end of said clip adapted to extend over the flange of the rail, a downwardly extending projection adjacent the last mentioned end of the clip, said projection being adapted to bear against the end of the rail flange, the end of said clip including said projection having a greater overall height than the inner height of the inverted member, and a downward protuberance at the opposite end of said clip, the thickness of said clip at said protuberance being greater than the inner height of the inverted member, whereby said spring clip cannot be removed from the U-shaped member.

2. A rail fastening device for fastening a rail to a metallic tie, which device comprises an in-

verted substantially U-shaped member securely fastened to said tie, an elongated spring clip extending through said inverted member and projecting from both ends thereof, a turned-up portion at the extreme end of said clip adjacent the rail, a downwardly extending projection adjacent said turned-up portion adapted to bear against the end of the rail flange, said projection and turned-up portion having a greater overall height than the inner height of the inverted member, and a downward protuberance at the opposite end of said clip, the thickness of said clip at said protuberance being greater than the inner height of the inverted member, whereby said spring clip cannot be removed from the U-shaped member.

3. A rail fastening device for fastening a rail to a metallic tie, which device comprises an inverted substantially U-shaped member securely fastened to said tie, an elongated spring clip extending through said inverted member and projecting from both ends thereof, a turned-up portion at the extreme end of said clip adjacent the rail, a downwardly extending projection adjacent said turned-up portion adapted to bear against the end of the rail flange, said projection and turned-up portion having a greater overall height than the inner height of the inverted member, and a downward protuberance at the opposite end of said clip, the thickness of said clip at said protuberance being greater than the inner height of the inverted member, whereby said spring clip cannot be removed from the U-shaped member, said tie having a pocket therein for receiving said protuberance.

4. A rail fastening device for fastening a rail to a metallic tie according to claim 3 in which said clip has an arched construction.

OTTO SANN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,995,020	Woodings	Mar. 19, 1935