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[54] ANCHORAGES FOR TRACK RAILS

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[51] **Int. Cl.**.....**E01b 9/30**

[58] **Field of Search**.....238/349, 341, 310, 338

[56] **References Cited**

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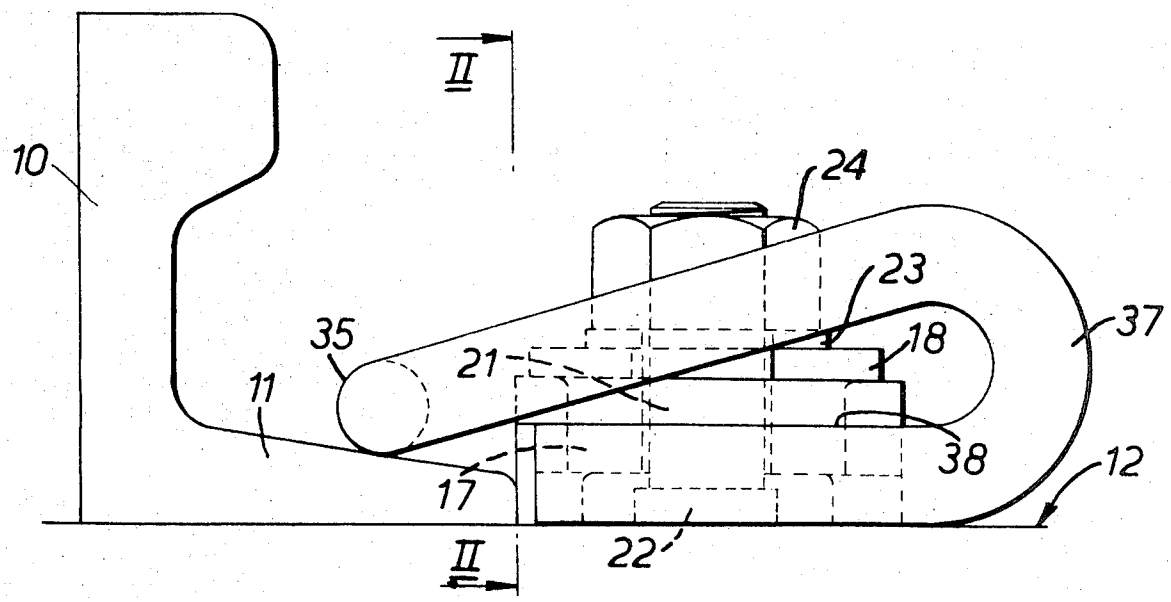
[57] **ABSTRACT**

An adjustable anchorage for locating a flange track rail on a support surface, including a mounting block with a central aperture receiving an eccentric cam plug fitting over a stud fixed in position, for example by welding to the base surface. The cam plug has an octagonal head so that by rotating the plug the block can be moved towards and away from the track rail, and locked by a nut on the stem. A specially shaped resilient steel clip has a pair of lower limbs fitting in grooves along opposite sides of the base, the two limbs extending away from the rail and having lower parts which curve upwards and forward so a central bite which bears down on the flange of the rail. The grooves for the lower limbs of the clip are specially shaped so that if the clip is displaced away from the rail it tends to exert an increased pressure.

8 Claims, 5 Drawing Figures



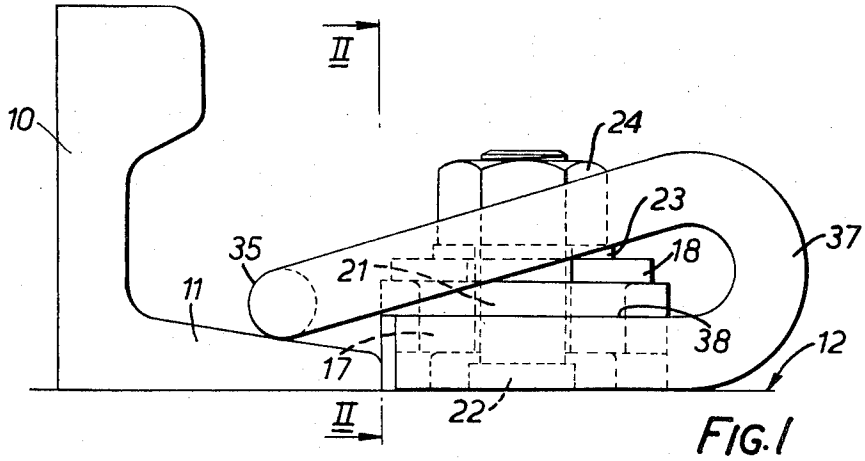


FIG. 1

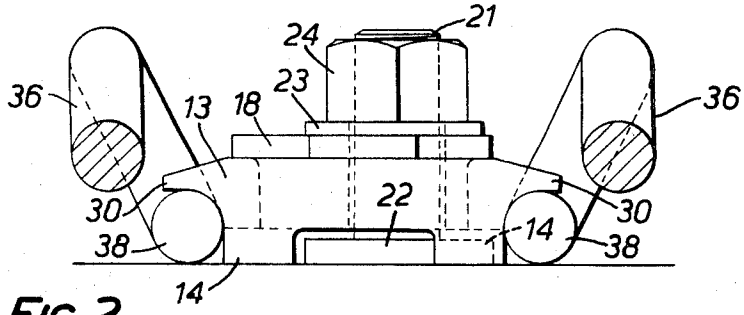


FIG. 2

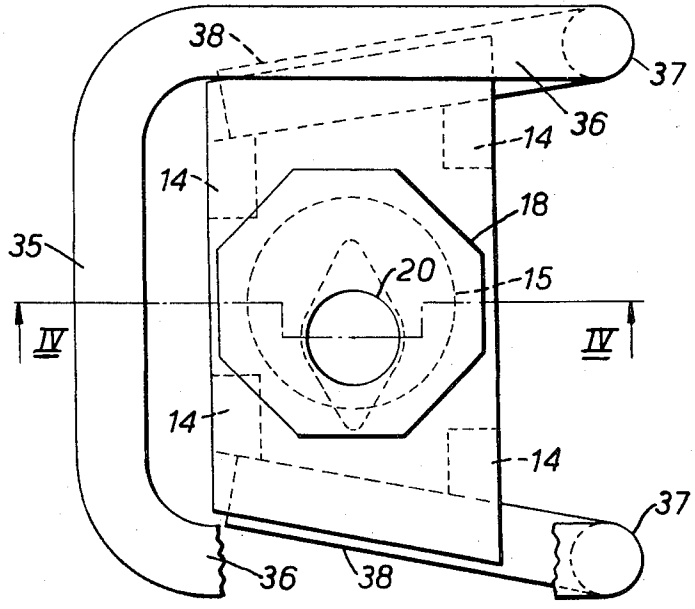


FIG. 3

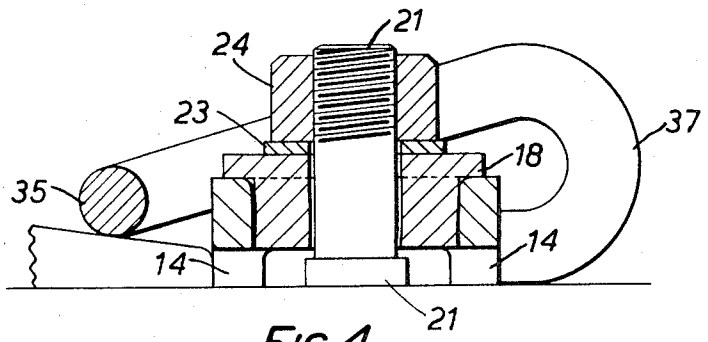


FIG.4

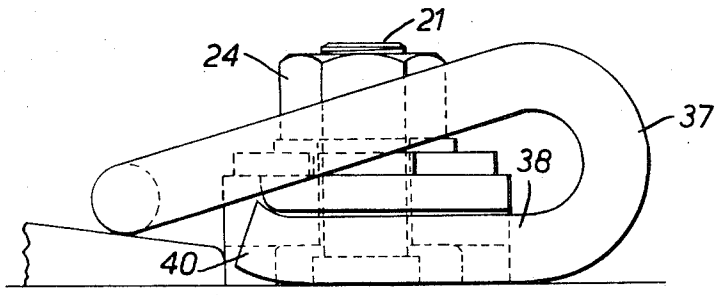


FIG.5

ANCHORAGES FOR TRACK RAILS

This invention relates to an anchorage device for holding a flanged track rail on a supporting surface.

Many previous constructions have been proposed for anchoring track rails on supports, using a variety of different systems for adjusting the positions of the anchorages or varying the pressure exerted by the anchorages on the rail.

It is an object of the present invention to provide an improved anchorage which may be applicable more easily to rails of different dimensions.

Broadly the invention consists in an anchorage for holding a flanged track rail on a support, comprising a base adapted to be mounted on or secured to a support at one side of the rail, and a resilient clamping element having a part designed to be fixed in or by the base, and a looped part which extends from the base away from the rail and is looped back towards the other side of the base so as to bear down on a flange of the track rail.

Preferably the clamping element is a metal spring, for example a steel bar or rod bent to the required form. The arrangement is conveniently such that the clamping element is stressed automatically as it is inserted into position. Thus usually the lower flange on the track rail will have an inclined flank surface so that as the clamping element is driven into position it automatically becomes stressed as it rises up the flank. The clamping element and/or the base may have an inclined wedge surface to assist in this insertion and stressing movement. The clamping element is also preferably formed to engage locking formations on the base to prevent accidental displacement.

According to a preferred feature of the invention the base is itself adjustable towards and away from the rail. For example the base may be secured to the support by means including a rotary cam pivotally mounted for rotation with respect to the base, and engaging a part fixed to the support. In any case a part of the anchorage is preferably arranged to abut against a flank of the track rail to provide lateral location therefor.

The invention may be performed in various ways and one specific embodiment with various possible modifications will now be described by way of example with reference to the accompanying drawings, in which:

FIG. 1 is an end elevation showing part of a rail and an anchorage,

FIG. 2 is a sectional view on the line II—II in FIG. 1,

FIG. 3 is a plan view of the anchorage of FIG. 1,

FIG. 4 is a sectional end view on the line IV—IV in FIG. 3, and

FIG. 5 is an end view similar to FIG. 1 of a modification.

In the first example the anchorage is designed to hold down the bottom flange 11 of a conventional I-section track rail 10 into a flat metal surface 12. The anchorage comprises a cast metal body or base 13 which is generally square in plan and has four short legs 14 one adjacent each corner to bear on the metal supporting surface. The base has a central circular aperture 15 which may be approximately 2 inches in diameter for example, and is designed to receive a rotary eccentric cam plug 16. This cam plug has a cylindrical portion 17 designed to fit loosely in the aperture 15 of the base and a projecting flange 18 at its upper edge which overlies the upper face of the base 13. The cam plug is

formed with an eccentric vertical bore 20 approximately three-fourths inch in diameter, designed to receive a screw-threaded bolt or stud 21. The lower end of the stud has a head 22 secured to the metal supporting surface 12, for example by welding, and the upper end projects above the flange 18 of the cam plug and is provided with a washer 23 and lock-nut 24. The periphery of the flange 18 on the cam plug is non-circular, for example octagonal, to allow it to be turned by a suitable tool. Since the stud 21 is fixed with respect to the supporting surface 12 it will be apparent that by turning the cam plug 16 the base 13 can be moved horizontally in an eccentric arc about the fixed stud, i.e., towards and away from the track rail 10, and clamped in any required position by tightening the locknut 24.

The two side edges of the base 13 which lie perpendicular to the length of the track rail 10 are each provided with overhanging lips or shoulders 30 which thus provide a pair of open grooves or channels running along the two sides of the base. A loop shaped spring clamping element is designed to be fitted into these grooves. The clamping element is formed from a continuous length of resilient steel bar having a central straight portion 35 designed to bear down vertically on the adjacent bottom flange 11 of the track rail 10, and two legs 36 which extend parallel with one another away from this central section over the top of the base 13, the free end of each leg being bent back in a curve 37 and ending in a lower straight limb or foot 38 extending towards the rail 10 and engaged in one of the two grooves mentioned above. In this example the two grooves provided by the shoulders 30 are inclined inwardly towards each other as they approach the rail 10, as seen in plan in FIG. 3, and the two lower limbs 38 of the clamping spring are similarly inclined. This provides a resilient cam action resisting movement of the clamping spring in a direction away from the rail, and arranged also to increase the resilient downward clamping force exerted by the central section 35 if the clamping spring should be forced laterally to the right in FIG. 3. Alternatively or in addition the extreme end of each leg may be chamfered off and provided with a notch to co-operate with a locking notch at the front of the respective groove on the base, so as to retain the spring clamp in position. More simply the extreme end of each foot 38 may be slightly bent upwardly as illustrated at 40 in FIG. 5.

In assembling and adjusting the anchorage the base 13 is first positioned over the stud 21 and the cam plug 16 adjusted so that the front edge of the base bears against the edge of the track rail flange 11 to provide lateral location. The locking nut 24 is then tightened up. The two free ends of the lower limbs 38 of the spring clamp are then offered up to the ends of the grooves 30, from the side remote from the track rail (i.e., the right in FIG. 1), and the clamp is driven into position by a hammer. When the straight central part 35 of the spring clamp engages the inclined flank surface of the track rail flange 11 further inward movement of the clamping element causes the looped part 37 to become stressed thus exerting a resilient downward force on the track rail. To remove the clamp the procedure is reversed.

This construction provides a compact adjustable anchorage in which the clamping element is of con-

siderable length and therefore capable of resilient deformation to accommodate a variety of track rails of different sizes and shapes. This resilient clamping effect is self-adjusting as explained above. The same base can also be used with clamping elements of different shapes to further widen the range of application.

In the second embodiment of the invention (not illustrated) the base is a hollow box-section metal member of comparatively short height, designed to be fixed to the supporting surface on one side of the track rail. For example this box-section member may be simply welded to the supporting surface. The base has two pairs of aligned apertures formed through its two opposite walls, providing two parallel entries for the free ends of a spring clamping element similar to that described in the previous example. The apertures in the wall adjacent to the track rail may be slightly over-size to allow the necessary small movement of the extreme ends of the spring clamp legs as they snap into their locked positions. In order to free the locked ends the base may be provided with an aperture to receive a tommy-bar or other convenient instrument. In this example the base is not adjustable towards and away from the track rail, but a similar adjustment may be provided if required.

We claim:

1. An anchorage for use in holding a flanged track rail on a supporting surface, comprising a base having two ends and two sides, mounting means provided on the base whereby the base may be secured to the supporting surface, cam-like locating formations situated at the sides of and towards one end of the base, and a resilient clamping element formed with a central looped portion which extends from beyond the one end of the base to the other end of the base, the ends of the clamping element being looped back to interlock with the locating formations of the base, and thus provide a camming arrangement resisting removal of the clamping element in the direction away from the other end of the base.

2. An anchorage according to claim 1, in which the clamping element is a metal spring.

3. An anchorage according to claim 1, in which the base is adjustable towards and away from the rail.

4. An anchorage according to claim 1, in which the base is adjustable towards and away from the rail and is secured to the support by means including a rotary cam pivotally mounted for rotation with respect to the base, and engaging a part fixed to the support.

5. An anchorage according to claim 4, in which a part of the anchorage is arranged to abut against a flank of the track rail to provide lateral location therefor.

6. An anchorage according to claim 1, in which the resilient clamping force exerted by the clamping element on the rail is self-adjusting, to compensate for any changes in the position of the rail.

7. An anchorage according to claim 1, in which the sides of the base converge towards the one end to form the locating formations and the ends of the clamping element similarly converge together.

8. An anchorage according to claim 1, wherein the locating formations are in the form of locking formations an upturned tips are formed at the ends of the clamping element, to be received in the locking formations to prevent accidental displacement.

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