June 15, 1965 J. HORNIBLOW ETAL 3,189,279

MOUNTING MEANS FOR RAILS

Filed Sept. 24, 1962

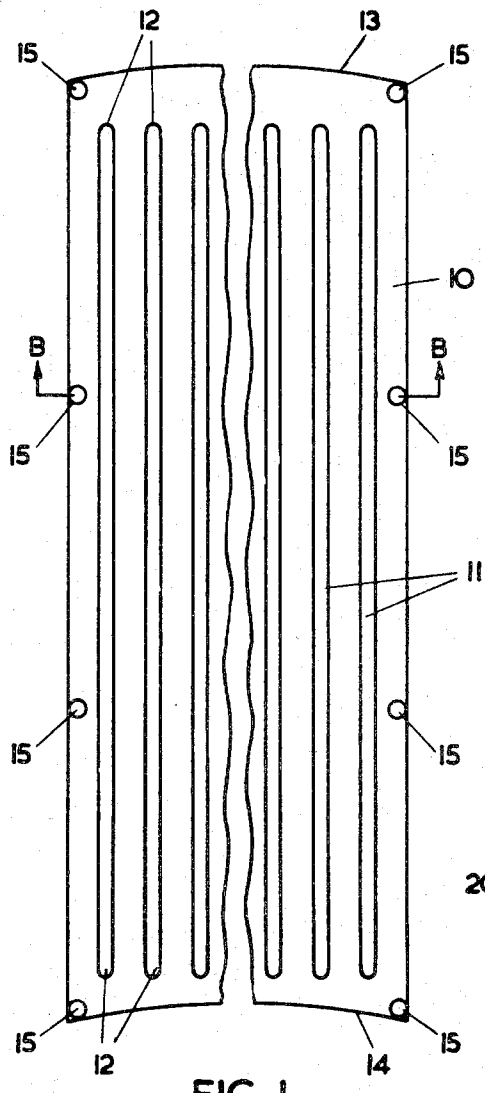


FIG. 1

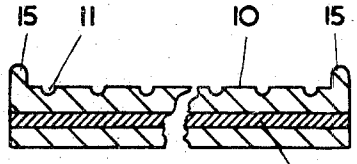


FIG. 2

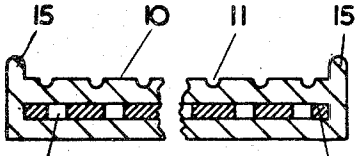


FIG. 3

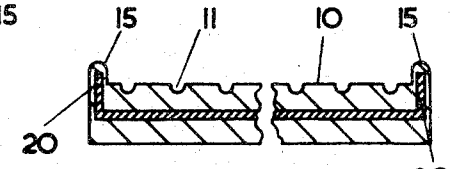


FIG. 4

Inventors

JOHN HORNIBLOW

ALAN G. SENIOR

By Holcombe, Wetherill & Brisebois

Attorneys

United States Patent Office 3,189,279 Patented June 15, 1965

3,189,279

MOUNTING MEANS FOR RAILS

John Horniblow, Redhill, and Alan Gordon Senior, London, England, assignors to Kins Developments Limited

Filed Sept. 24, 1962, Ser. No. 225,786
2 Claims. (Cl. 238—283)

The specification of our British Patent Number 854,063 describes and claims a construction comprising a rail mounted longitudinally on the surface of a girder or the like, wherein a pad of natural or synthetic rubber is provided between said rail and said surface. The rail is secured by means of a plurality of spring clips on both sides of said rail and means are provided for forcing a given portion of each clip relative to said girder or the like, with an overlapping portion of said clip overlapping the flange of said rail, so that said ovelapping portions press said rail hard against said pad.

The specification of our British Patent Number 854,063 also describes and claims a pad which is formed with grooves in its upper and lower surfaces. In alternative arrangements described and claimed, one pad may extend the full length of the rail which it supports, or several pads spaced along the rail may be employed.

The present invention provides modifications and improvements of the invention of British Patent No. 854,063, in the form and construction of the pads.

Features and advantages of the present invention will be apparent from the following description of various embodiments thereof, given by way of example, with reference to the accompanying drawings, in which:

FIGURE 1 shows a plan view of a rail mounting pad constructed in accordance with the invention;

FIGURE 2 shows section along the line B—B of FIGURE 1; and

FIGURES 3 and 4 show similar sections of different embodiments of the invention.

Referring now to the drawings there is shown a rail mounting pad on which a rail (not shown) locates and which lies on the surface of a girder or the like (not shown). The rail locates on an upper surface **10** which is formed with a plurality of small semi-circular grooves **11** arranged in parallel rows extending longitudinally of the pad. These grooves are closed at their ends as at **12**. In this way the ingress of excess lubricant from the structure supported on the rail is prevented. The ends of the pad are curved in plan, one end **13** convex and the other end **14** concave. This allows pads to be placed end to end with the convex portion of one pad co-operating with the concave portion of the adjacent pad to prevent relative lateral movement of the adjacent end portions. The under surface of the pad is completely flat.

The pad is integrally formed with four pairs of transversely opposed upstanding lugs **15**, one pair positioned at each one-third of the length from each end and one pair at each end of the pad. The lugs of each pair are positioned at the opposite edges of the pad to embrace the flange of the rail resting on the pad, thereby resisting lateral movement of the pad relative to the rail.

The pad is formed of natural or synthetic rubber and is reinforced by a sheet or plate of material embedded in the rubber material of the pad.

As shown in FIGURE 2 the reinforcement comprises a flat mild steel or spring steel plate **16** which extends across the whole width of the pad and thus forms a sandwich construction. The reinforcement is fully bonded to the pad material.

In FIGURE 3 the reinforcement is formed by a sheet

17 which does not extend across the full width of the pad so that the sheet **17** is completely enclosed by the pad material. In this embodiment the sheet **17** is formed with perforations **18** and is fully bonded to the pad material.

Other materials may be used for the reinforcement such as resin bonded glass fibre sheet; or welded or woven mesh of steel, brass or other metal; or woven fibre glass fabric. As shown in FIGURE 4, when a substantially rigid sheet material is used to form the reinforcement, the reinforcing sheet may be extended and turned up locally as at **20** into the material of the upstanding lugs **15**.

The function of the reinforcement is to prevent excessive lateral expansion of the material of the pads under load, and thus to limit the effect of the phenomenon known as "creep," i.e. lateral expansion of said material and unequal recovery therefrom. The reinforcement is so designed, with respect to its shape, thickness and position in the pad, that it is not subject to permanent distortion under load.

Various modifications are of course possible within the scope of the invention and in particular the grooves **11** in the upper surface **10** of the pad may be arranged in other ways, for example they may extend laterally or diagonally across the pad, or they may be in a chevron pattern. With such arrangements, while excess lubricant from the structure supported on the rail may spread over the surface of the pad, it is readily squeezed out when the pad is compressed under load.

What we claim is:

1. A rail mounting pad formed of rubber-like material, said pad having an upper surface provided with a plurality of grooves and reinforcement means completely enclosed within the material of the pad to limit the lateral expansion of the pad under load, said pad having one concave and one convex end whereby pads can be placed end-to-end with the concave end of one pad cooperating with the convex end of an adjacent pad to resist relative lateral movement of adjacent pads.

2. A rail mounting pad formed of rubber-like material, said pad having an upper surface provided with a plurality of grooves and reinforcement means completely enclosed within the material of the pad to limit the lateral expansion of the pad under load, said pad comprising also upstanding lugs at the edges of the pad to embrace the rail flange and thereby resist relative lateral movement of the pad and the rail, there being four pairs of lugs positioned one pair at each end and one pair at each one third of the length from each end of the pad, and said reinforcement means extending into said lugs.

References Cited by the Examiner

UNITED STATES PATENTS

1,628,090	5/27	Weiss	248—22 X
1,877,064	9/32	Schultz	248—350
2,155,155	4/39	Stedman	238—283
2,553,010	5/51	Saul	238—283
2,763,586	9/56	Noyes.	
2,867,384	1/59	Toulmin	238—283
2,892,592	6/59	Greene et al.	238—283

FOREIGN PATENTS

518,266	3/53	Belgium.
1,227,754	3/60	France.
860,209	2/61	Great Britain.
172,796	2/35	Switzerland.

EUGENE G. BOTZ, *Primary Examiner.*
LEO QUACKENBUSH, *Examiner.*