J. S. CRAWFORD.

GUARD RAIL CLAMP.

APPLICATION FILED JUNE 24, 1914.

1,111,007. Patented Sept. 22, 1914.

Fig. 1.

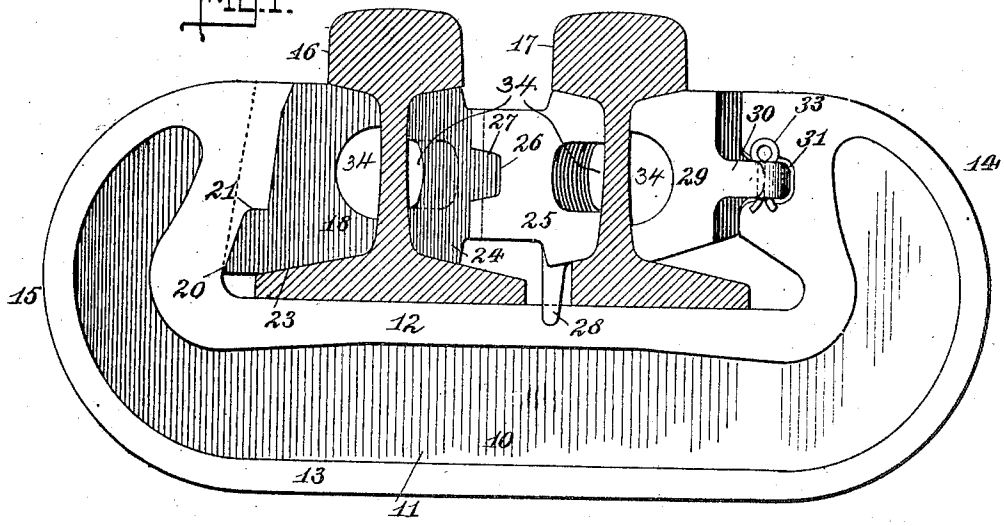


Fig. 2.

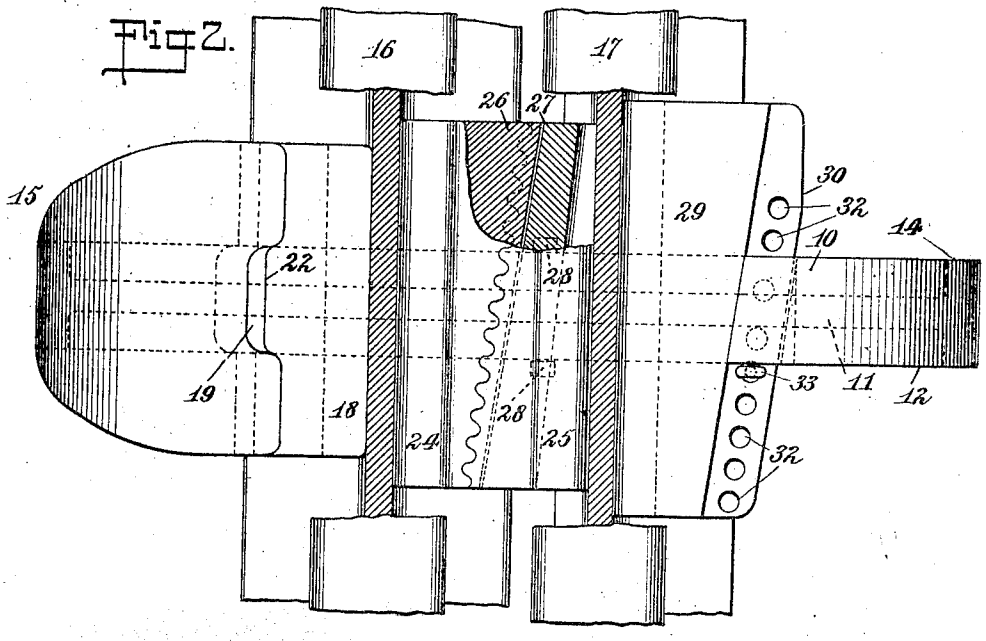
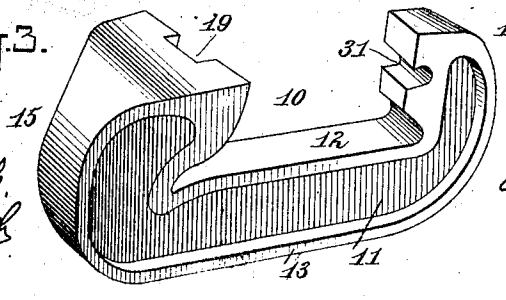


Fig. 3.



WITNESSES

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GUARD-RAIL CLAMP.

1,111,007 Specification of Letters Patent. Patented Sept. 22, 1914.

Application filed June 24, 1914. Serial No. 846,926.

To all whom it may concern:

Be it known that I, JOHN S. CRAWFORD, a citizen of the United States, and a resident of Reading, in the county of Berks and State of Pennsylvania, have made and invented certain new and useful Improvements in Guard-Rail Clamps, of which the following is a specification.

My invention relates to an improvement in guard rail clamps, the object being to provide a device of this kind which shall consist of but few parts which may be easily and readily applied in position without the necessity of disturbing the guard rail, and which, by reason of its shape or formation, will always be held rigidly and tightly against the base of the rails and at right angles thereto.

A further object of the invention is to construct a clamp which shall be light in weight, yet at the same time possess sufficient strength to enable it to withstand the strains imposed upon it, and further to so shape or form the yoke that it may be employed in connection with rails of different weight and height, and having different thicknesses of web and width of base, and with these and other ends in view, consists in certain novel features of construction as will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation showing my improved guard rail clamp secured to a main and guard rails. Fig. 2 is a plan view of the same, some portions being broken away for the sake of clearness. Fig. 3 is a detached view in perspective of the yoke.

Referring to the drawings, 10 represents the yoke, preferably made of I-beam construction, that is, with a vertical web 11 having on its upper and lower edges the projecting flanges 12 and 13, the ends of the yoke 14—15 being upwardly and inwardly curved in order to assist in holding the several parts in their proper relative positions, as hereinafter described, the end 15 of the yoke being materially wider than the end 14, so that a comparatively long and wide bearing surface may be presented to the main rail to insure the yoke retaining its proper position at right angles to the rails while being clamped thereto and also after being locked or secured in position. Between this widened end 15 and the main rail 16, which latter rests upon the flange portion 12 of the yoke, is located a clamp block 18, said widened end being provided with a vertical groove or recess 19 and horizontal groove or recess 20, the latter forming a step or shoulder 21. The block 18 is correspondingly formed with a rib 22 fitting into the groove or recess 19 and also provided with a shoulder 23 fitting under the shoulder 21, the base of the block being shaped to conform to, and adapted to rest upon, the base of the main rail 16. By reason of the formation of these several parts, it will be understood that the clamp block may be made of somewhat greater length than has heretofore been the case in devices of this character, the result being that a comparatively long bearing surface is presented to the web of the rail with which the block contacts; also to the under side or surface of the head of the rail, and to the upper surface of the base of the rail, thus insuring the yoke being held at right angles to the rail after being once properly secured in place, and also during the operation of clamping the yoke to the rails. Furthermore, by providing a step or shoulder upon this block, and upon which rests the curved end of the yoke, all danger of the latter dropping or falling away from the base of the rail is overcome, the rib 22 fitting into the recess 19 also overcoming any danger or liability of the block moving laterally with relation to the end of the yoke, or lengthwise with relation to the rail. Between the main rail 16 and the guard rail 17, which latter also rests upon the flange portions of the yoke, is located the filler block comprising sections 24—25, these sections resting upon the bases of the main and guard rails, and impinging against the webs of these rails and also the under sides or surfaces of the heads thereof, the sections being made wedge-shape and having their adjacent edges provided with engaging teeth or serrations in order to prevent their accidental movement one upon the other after being secured in place. In order to assist in retaining these sections in their proper relative positions, I provide the vertical wall of one section, that is, section 25, with a horizontal groove or recess 26 lengthwise of the same, and the adjacent vertical wall of the other section 24 with a rib or flange 27 adapted to nicely fit in said recess 26, this construction

preventing any vertical movement of one section of the block with relation to the other. To prevent the longitudinal movement thereof, I provide on the ends of the section 25 the depending lugs 28 adapted to extend downwardly beyond the flange portion 12 of the yoke, it being evident that if one section of the filler block be prevented from movement lengthwise of the rails, the other section which interlocks with the first-mentioned section will also be prevented from accidental movement or displacement, the construction of these engaging sections, however, permitting of their movement one upon the other for the purpose of properly holding the main and guard rails in their spaced relation.

Between the guard rail 17 and the narrow end 14 of the yoke is located the wedge or key 29 adapted to impinge against the under side of the head of the guard rail and the web and upper side of the base of the same, this wedge-shaped block being provided with a flange or rib 30 fitting in a corresponding groove 31 formed in the end 14 of the yoke, the rib or flange 30 being provided with a plurality of holes or openings 32 for the reception of a cotter pin 33, or its equivalent, whereby after the wedge has been driven tightly into place, operates to hold the wedge from receding or backing out of place and thereby securely clamping the several parts in their proper relative positions.

In order to lighten the several parts, without in any wise detracting from the strength thereof where such is needed, I prefer to form the clamping block, the sections of the filler block and the wedge or key, with the recesses or chambers 34, sufficient metal, however, being provided to lend to the several parts sufficient bearing surface to impinge against the adjacent parts.

From the foregoing it will be understood that my improved clamp is simple in construction, and consists of but few parts easily and readily assembled; that by reason of the width given to the end 15 and the peculiar formation of such end, the clamp will at all times, both during the operation of locking it in place, and after it has been secured in place, be held in its proper position, at right angles to the rails and with no danger of its sagging or dropping away from the bases thereof. This is also true of the opposite end 14, by reason of the rib on the block 29 fitting within the groove or recess 31, the block at the same time impinging against the head, web and base of the guard rail, the danger of the yoke sagging or dropping being also partially overcome by reason of the rib 27 formed on one section of the filler block fitting in the recess 26 formed in the other section.

What I claim is:—

1. A guard rail clamp comprising a yoke with upwardly and inwardly curved ends, one of which is provided with a vertical recess and a horizontal shoulder, a clamp block provided with a rib fitting in said recess and with a shoulder fitting under said shoulder formed on the end of said yoke, a sectional filler block to space the rails, and a wedge engaging the other end of said yoke.

2. A guard rail clamp comprising a yoke having upwardly and inwardly curved ends one of which is widened and provided with a vertical recess and with a horizontal shoulder, a clamp block fitting under said shoulder and provided with a flange fitting in said vertical recess, a sectional filler block for spacing the rails, and a wedge engaging the narrow end of the yoke.

3. A guard rail clamp comprising a yoke having upwardly and inwardly curved ends, a clamp block engaging one end of said yoke, a sectional filler block for spacing the rails, and a wedge engaging the other end of said yoke, the end of said yoke engaging the clamp block being wider than that engaging said wedge.

Signed at Reading, in the county of Berks and State of Pennsylvania, this 22nd day of June, A. D. 1914.

JOHN S. CRAWFORD.

Witnesses:
HELEN D. JOST,
H. ROBERT MAYS.