G. M. ERVIN.

CLAMP FOR GUARD RAILS.

APPLICATION FILED JULY 12, 1907.

**987,972.** Patented Mar. 28, 1911.

Fig. 1.

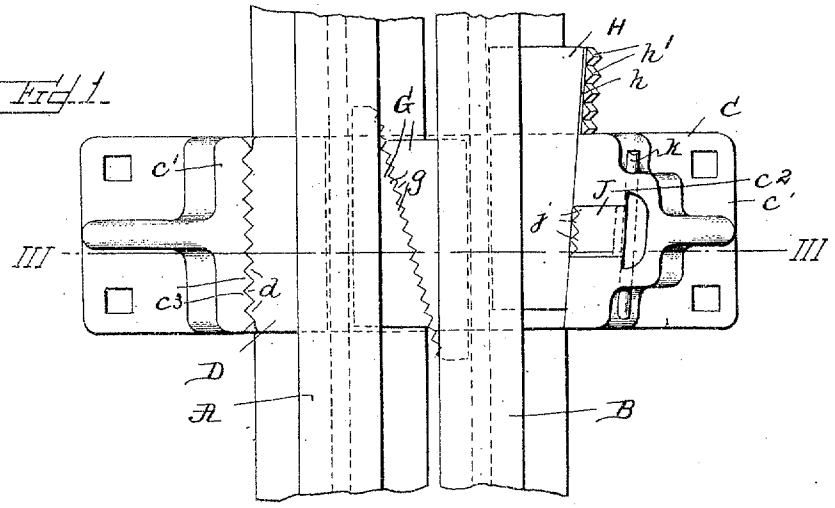



Fig. 2.

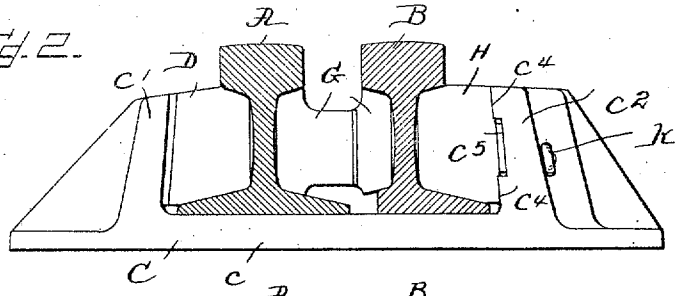



Fig. 3.

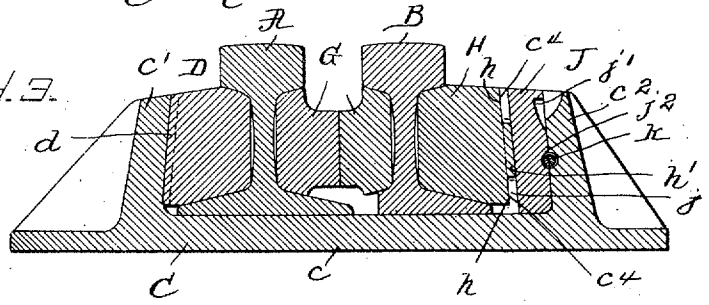



Fig. 4.

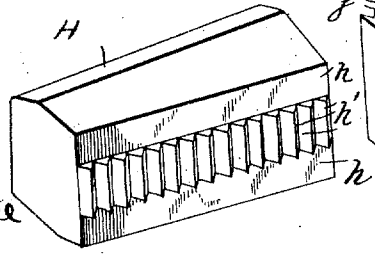
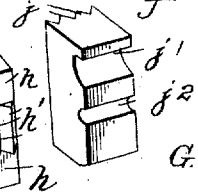



Fig. 5.

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# UNITED STATES PATENT OFFICE.

GEORGE M. ERVIN, OF PEN MAR, PENNSYLVANIA, ASSIGNOR TO THE LORAIN STEEL COMPANY, A CORPORATION OF PENNSYLVANIA.

## CLAMP FOR GUARD-RAILS.

987,972. Specification of Letters Patent. Patented Mar. 28, 1911.

Application filed July 12, 1907. Serial No. 383,529.

*To all whom it may concern:*

Be it known that I, GEORGE M. ERVIN, of Pen Mar, in the county of Franklin and State of Pennsylvania, have invented a new and useful Improvement in Clamps for Guard-Rails, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in clamps for guard-rails, and the object of which is to provide a simple, cheap, durable, and efficient device of this character, whereby the guard-rail can be adjusted with relation to the main rail, and rigidly clamped, with respect thereto, while the clamping members are rigidly locked in their clamped position.

With these objects in view, my invention consists in the novel construction, arrangement, and combination of parts, all substantially as hereinafter described and pointed out in the appended claims, reference being had to the accompanying drawings in which—

Figure 1, is a plan view of a main rail and a guard rail secured thereto with my improved clamp; Fig. 2 is an end view thereof; Fig. 3, is a sectional view on the line III—III of Fig. 1; Fig. 4, is a perspective view of the clamping wedge; Fig. 5, is a perspective view of the wedge locking key.

A is the main rail, B the guard rail; both of the well known T-rail cross-section. Partially surrounding the rails is the clamp C. The clamp C is made up of the bottom plate $c$, and the upwardly and inwardly projecting sides $c'$ and $c^2$. The inner face of the side $c'$ is provided with the angular teeth $c^3$, and the inner face of the side $c^2$ is provided with the horizontal bearing faces $c^4$, $c^4$, and the cut away portion $c^5$, between these faces. As can be seen by referring to Figs. 1 and 2, the inner face of the side $c^2$, is on a taper from top to bottom, and from one end to the other for the purpose to be hereinafter described.

Placed between the main rail A, and the side $c'$ of the clamp C, is a chock D, having the teeth $d$ on one side thereof, which intermesh with, and engage the teeth $c^3$ of the side $c'$, while a portion of the top, bottom and the other side, engages the bottom of the head, the top of the foot, and the web respectively, of one side of the main rail. This chock D can be cast or formed integral with the side $c'$, but I prefer to make it separate, as it is easier and cheaper to manufacture, and also allows an interchanging of chocks for rails of different cross-section.

G, G, are spacing blocks which are placed between the main and guard-rail. The contiguous faces of these blocks are provided with interlocking teeth $g$, $g$. The outer faces engage the bottom of the head, top of the foot, and the web of the rails. Interposed between the side $c^2$ of the clamp C, and the guard-rail, is the wedge H which is tapered with relation to the vertical and horizontal. This wedge H, engages the head, foot and web of the guard-rail on one side, and the other side is provided with the bearing faces $h$, $h$, and the teeth $h'$ $h'$. The bearing faces $h$, $h$, of the wedge H, engage the bearing faces $c^4$, $c^4$, in the side $c^2$ of the clamp C, and the teeth $h'$ enter the cutaway portion $c^5$.

J is a key which is placed in a key-seat inside $c^2$ of the clamp C. The one face of this key J is provided with teeth which interlock with the teeth $h'$ on the wedge H, locking it in its adjusted position. The other face of the key is provided with the cutaway portion $j'$, to allow the insertion of a bar to engage and withdraw the key, and $j^2$ is a groove through which a cotter $k$ is passed, to retain the key in place and prevent it from being jarred from its seat.

When the inner face of the head of the guard rail B becomes worn, and it is desired to move the guard-rail toward the main-rail, the cotter $k$ is withdrawn to release the key J, and the key is withdrawn. The wedge H is now driven out, which will release the guard rail, and the spacing-blocks G, G. The blocks G, G, are now shifted the required distance to take up the wear on the guard-rail; and the guard-rail is moved toward the main rail. The wedge H is replaced and driven home, and the key J and its retaining cotter $k$ are replaced.

In the manner described, I form an adjustable and secure guard rail clamp, which firmly clamps the several members together. By means of the longitudinal taper in the wedge H, the rails are firmly held in position in the clamps, while the vertical taper

in the wedge H, and the inwardly projecting sides $c'$ and $c^2$ of the clamp hold the rails firmly on the bottom plate.

I do not wish to limit myself to the specific construction and arrangement herein shown and described, as various changes can be made without departing from the spirit and scope of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent is:—

1. A guard-rail clamp, comprising a clamping-member having converging jaws, a removable chock interposed between one of the jaws and the main-rail, a plurality of teeth on the chock engaging recesses in the adjacent jaw, a spacing block interposed between the main and guard rail, and a wedge engaging the guard rail and the other jaw of the clamping member, said wedge being adapted to move vertically in securing the parts together.

2. A guard-rail clamp, comprising a jawed clamping-member, one of the jaws engaging the main-rail, the face of the other jaw being at an angle with relation to the vertical and horizontal planes, a guard-rail, a spacing block between the main and guard-rail, a wedge engaging the angular faced jaw of the clamping member and the guard-rail and provided with projections, and a key engaging said projections to lock the wedge to the clamping member.

3. A guard-rail clamp, comprising a clamping member having converging jaws, a removable chock interposed between one of the jaws and the main rail, the chock being provided with a plurality of locking members which engage and interlock with recesses in the clamping member, a spacing block interposed between the main and guard-rail, and a wedge engaging the guard-rail and the other jaw of the clamping member, said wedge being vertically adjustable to tighten the parts in place.

4. A guard-rail clamp, comprising a clamping member, having converging jaws, a removable chock interposed between one of the jaws and the main-rail, a spacing block interposed between the main and guard-rail, a wedge engaging the guard-rail and the other jaw, and a key having a plurality of teeth engaging recesses in the wedge to secure the wedge to the clamping member.

5. A guard-rail clamp, comprising a clamping-member, having converging jaws, a movable chock interposed between one of the jaws and the main rail, the chock being provided with locking members which engage and interlock with the chock and the clamping member, a spacing-block interposed between the main and guard-rail, a vertically tapering wedge engaging the guard-rail and the other jaw, a key for locking the wedge to the clamping member and means to secure the key in its locking position; substantially as described.

6. A guard-rail, comprising a clamping-member, having converging jaws, a movable chock interposed between one of the jaws and the main-rail, an adjustable spacing block interposed between the main and guard-rail, and a wedge engaging the guard rail, and the other jaw of the clamping member, said wedge being adapted to move vertically to tighten the parts in place.

7. A guard rail clamp comprising a jaw clamping member, one of said jaws engaging the main rail, the face of the other jaw being at an angle relative to vertical and horizontal planes, a guard rail, a spacing block between the main rail and guard rail, and a vertically movable wedge engaging the angular faced member of the clamping member and the guard rail, said wedge being vertically movable into holding position, and a horizontally extending key contacting with the wedge and angular jaw face to secure the wedge in place.

In testimony whereof I have affixed my signature in presence of two witnesses.

GEO. M. ERVIN.

Witnesses:
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H. W. SMITH.