A. H. WESTON AND R. H. PETERS.

CLAMP.

APPLICATION FILED APR. 24, 1919.

1,336,667. Patented Apr. 13, 1920.

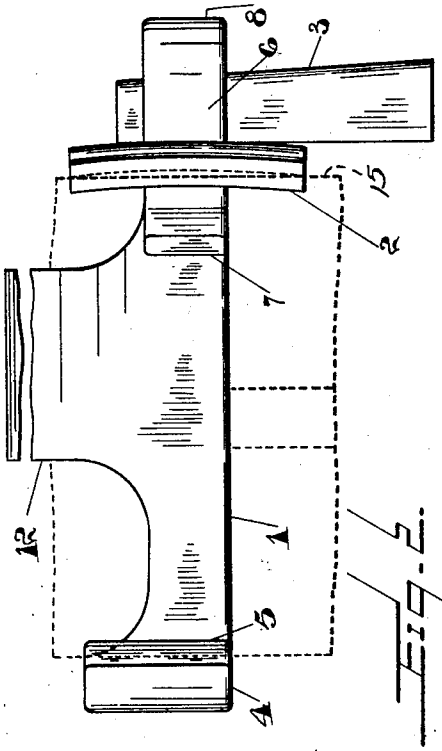


Fig. 2.

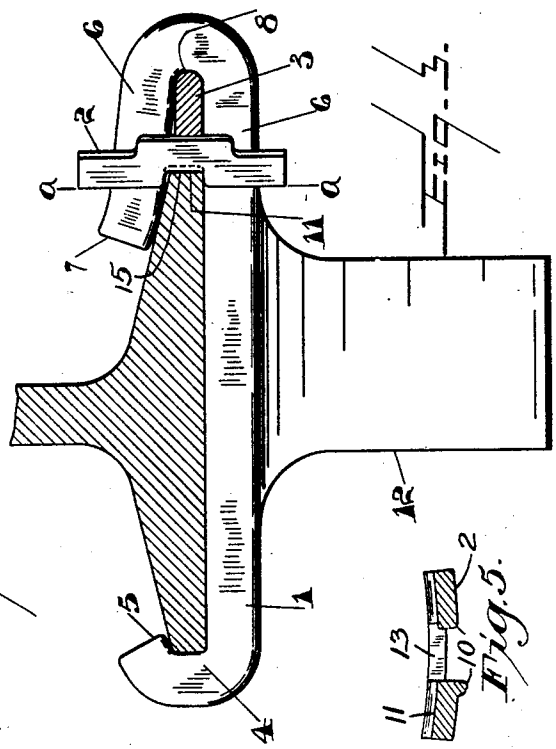


Fig. 3.

Fig. 5.

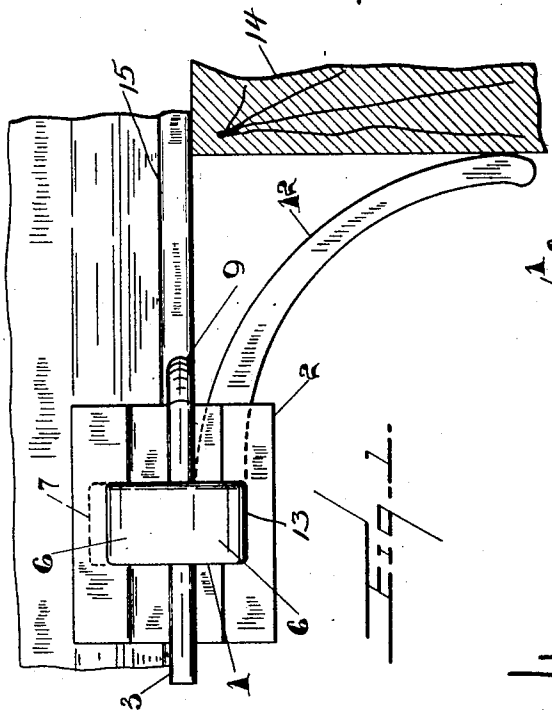


Fig. 1.

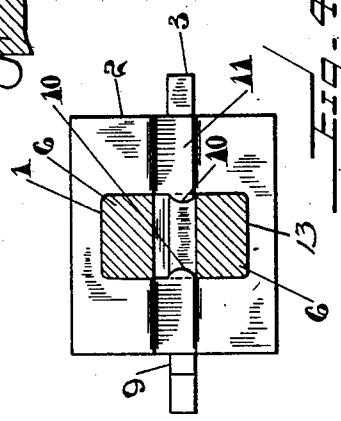


Fig. 4.

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UNITED STATES PATENT OFFICE.

ALONZO H. WESTON AND ROBERT H. PETERS, OF BUFFALO, NEW YORK, ASSIGNORS TO JOHN P. NORTHEY AND GIDEON GRANT, BOTH OF TORONTO, ONTARIO, CANADA.

CLAMP.

1,336,667. Specification of Letters Patent. Patented Apr. 13, 1920.

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To all whom it may concern:

Be it known that we, ALONZO H. WESTON and ROBERT H. PETERS, citizens of the United States of America, and residents of the city of Buffalo, county of Erie, in the State of New York, one of the United States of America, have invented certain new and useful Improvements in Clamps, of which the following is a specification.

This invention relates to clamps such as shown and described in application No. 245566 filed July 18th, 1918, and our object is to improve the construction of the clamp set forth therein to better adapt it for use as a rail anchor.

It is important in practice that a rail anchor should not comprise more than two parts, and we have therefore devised a construction by which the cross or reach bar of the prior application has the washer always connected therewith in position for use.

It is also desirable to have the abutment for engagement with a tie located below the rail and to so construct the washer that it assists in taking the twisting strain due to the pressure on the abutment.

We attain the desired objects by means of the constructions hereinafter described and illustrated in the accompanying drawings in which—

Figure 1 is an end elevation of our improved clamp connected to a flanged structural metal member;

Fig. 2 a plan view of a clamp with part of a structural metal member shown in dotted lines;

Fig. 3 a rear elevation of the clamp, partly in section; and connected with a structural metal member; and

Fig. 4 a section on the line *a*—*a* in Fig. 3;

Fig. 5 is a horizontal section of the washer, one lug thereof being bent up and the other turned down.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

The clamp comprises three parts, a reach bar 1, a washer 2, and a wedge 3, but the reach bar and washer are so connected, as hereinafter described, that for practical purposes they form only one piece, so that to the railway man the device, if used as a rail anchor, is in effect a two piece anchor, which is an important feature of our construction.

One end of the reach bar has a hook 4 thereon adapted to engage the flange of a structural metal member as shown. The hook is preferably provided with a lip 5 adapted to overhang to hold the reach bar in position during the attachment of the device. This lip is preferably very short to render it unnecessary to provide any large amount of lost motion in the jaws 6 located at the other end of the reach bar. At the other end of the bar, the jaws 6 are formed by bending the cross bar back upon itself. These jaws are adapted to embrace the other edge of the flange to that engaged by the hook 4 and of sufficient depth to the throat 8 to permit the washer 2 being forced over them and the wedge 3 driven between the jaws to bear against the throat 8 and the washer.

The end of the upper member of the jaws is preferably formed with an upwardly extending lip 7 which serves to prevent the washer being driven in past the end of the jaw.

In practice we proportion the parts so that the distance between the throats of the jaws 6 and the hook 4 is greater than the width of the flange the device is to be engaged with, so that the device may be positioned by first engaging the deeper jaws 6 with one edge of the flange until the lip 5 will clear the other end of the flange. The bar 1 is then brought into contact with the flange and moved laterally in the direction of the deeper jaws to bring the lip 5 above the flange as shown.

The washer is formed of a metal plate stamped to form and is provided with a slot 27 shaped to fit over the jaws 6, which are of the divergent form shown. To hold the washer in position on the jaws 6 when the device is not in use, we form at each side of the slot in the washer the lugs 10. Such lugs in the first place are turned up at right angles to the surface of the washer, and, after the washer has been slipped over the jaws, are straightened out as shown in Fig. 4 and the right hand side of Fig. 5, when by engaging with the throat of the jaws they prevent the washer being withdrawn from the jaws, while the divergence of the jaws is sufficient to prevent the washer being pushed off in that direction.

The reach bar has an abutment 12 formed thereon, which, when the reach bar is in po-

sition, extends forwardly and downwardly therefrom, being preferably curved in the direction of its length. This abutment member provides the engagement between the device and the side of a tie 14. This abutment member is preferably not located so as to come below the center line of a rail to which the device is applied, but lies somewhat nearer the jaws 6 than the hook 4, thus while stresses taken by the abutment member are divided between the two ends of the reach bar which grip the flange, yet a somewhat larger proportion is taken by the jaws 6, which are best adapted to resist such stresses.

The leverage due to the abutment member imparts a powerful twisting strain to the reach bar if the rail to which the device is applied tends to creep.

As the reach bar is comparatively narrow, we find it desirable to relieve the reach bar of part of this twisting strain. The washer 2 is therefore stamped up to form a groove 11 which, when the washer is in position, embraces the edge of the flange as shown. Preferably this groove is of such a depth that the jaws are powerfully compressed against the upper and lower sides of the flange before the washer is driven tightly home against the edge of the flange 15.

Usually the washer will be forced home by driving the wedge 3 between the jaws to engage the throat 8 thereof and the washer, but for some purposes the washer may simply be hammered into position when it is frictionally held by its engagement with the jaws. When the wedge is driven home, the end 9 may be bent in as shown in Fig. 1 to prevent any possibility of its slipping back. This is easily effected as the wedge is in alinement with the flange and the part of the washer under the wedge is thus effectively supported as on an anvil.

To provide a constant spring against the wedge key when the latter is driven in, we prefer to crown the washer 2 in the direction of its length so that it will flatten out as the key is driven and being of spring material it will thus maintain a constant tension which is a desirable feature in clamping metal to metal and prevents the key working loose (see Figs. 2 and 5).

What we claim as our invention is:—

1. In a clamp, the combination of a reach bar engageable at one end with one edge of the flange of a structural metal member; jaws integral with the other end of the reach bar adapted to engage opposite sides of the other edge of the flange; a downwardly extending abutment formed integral with the reach bar; and means for forcing the said jaws into engagement with the flange.

2. In a clamp, the combination of a reach bar having a hook at one end adapted to engage one edge of the flange of a structural metal member; slightly diverging jaws integral with the opposite end of the cross bar adapted to embrace the other edge of the flange; a downwardly extending abutment formed integral with the reach bar; a washer provided with a slot adapted to fit over the jaws and of less length than the greatest spread of the diverging jaws, whereby the washer when forced over the jaws will clamp the latter against opposite sides of the flange.

3. In a clamp, the combination of a reach bar having a hook at one end adapted to engage one edge of the flange of a structural metal member; jaws integral with the opposite end of the cross bar adapted to embrace the other edge of the flange; a washer provided with a slot adapted to fit over the jaws and having a groove formed therein to receive and embrace the adjacent edge of the flange; and a wedge adapted to be driven between said jaws to engage the throat and the washer to force the latter toward the edge of the flange.

4. In a clamp, the combination of a reach bar having a hook at one end adapted to engage one edge of the flange of a structural metal member; jaws integral with the opposite end of the cross bar adapted to embrace the other edge of the flange and formed by bending the end of the cross bar; and a washer provided with a slot adapted to fit over the jaws and having a groove formed therein to receive and embrace the adjacent edges of the flange.

5. In a clamp, the combination of a cross bar having a hook at one end adapted to engage one edge of a flange of a structural metal member; jaws integral with the opposite end of the cross bar adapted to embrace the other edge of the flange; a washer provided with a slot adapted to fit over the jaws and with a lug at one side of the slot projecting between the jaws; and a wedge adapted to be driven between said jaws to engage the bottom of the jaws and the washer to force the latter toward the edge of the flange.

6. In a clamp, the combination of a cross bar having a hook at one end adapted to engage one edge of a flange of a structural metal member; jaws integral with the opposide end of the cross bar adapted to embrace the other edge of the flange; and a washer provided with a slot adapted to fit over the jaws and with a lug at one side of the slot projecting between the jaws.

7. In a clamp, the combination of a cross bar having a hook at one end adapted to engage one edge of a flange of a structural metal member; slightly diverging jaws integral with the opposite end of the cross bar adapted to embrace the other edge of the flange; and a washer provided with a slot adapted to fit over the jaws and of less

length than the greatest spread of the diverging jaws and having a groove formed therein to receive and embrace the adjacent edge of the flange.

8. In a clamp, the combination of a cross bar having a hook at one end adapted to engage one edge of a flange of a structural metal member; slightly diverging jaws integral with the opposite end of the cross bar adapted to embrace the other edge of the flange; and a washer provided with a slot adapted to fit over the jaws and of less length than the greatest spread of the diverging jaws and with a lug at one side of the slot projecting between the jaws.

9. In a clamp, the combination of a cross bar having a hook at one end adapted to engage one edge of a flange of a structural metal member; jaws integral with the opposite end of the cross bar adapted to embrace the other edge of the flange; a washer provided with a slot adapted to fit over the jaws, said washer being formed with a crown; and a wedge adapted to be driven between said jaws to engage the throat and the washer to force the latter toward the edge of the flange.

Signed at Buffalo, N. Y., this 7th day of April, 1919.

ALONZO H. WESTON.
ROBERT H. PETERS.