Feb. 7, 1928. 1,658,418

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CUTTING DEVICE

Filed Oct. 22. 1926

Fig. 1.

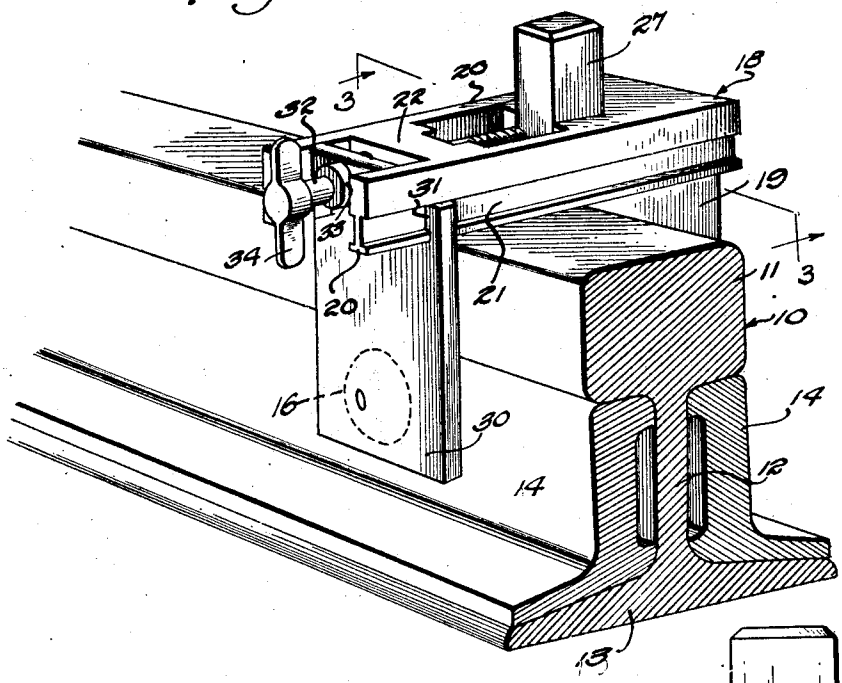


Fig. 2.

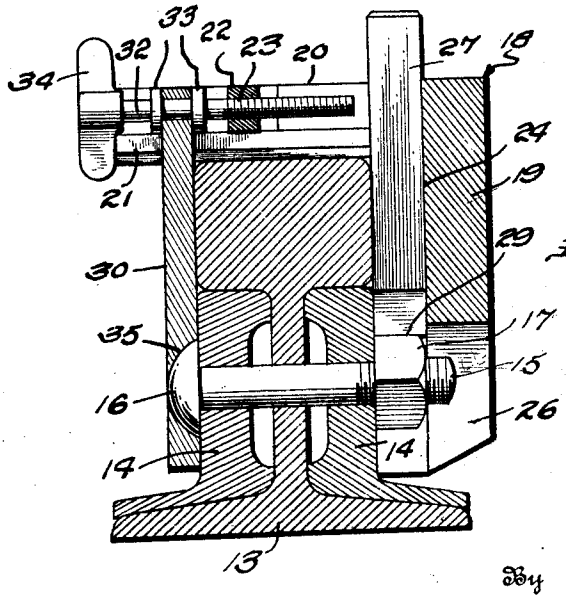
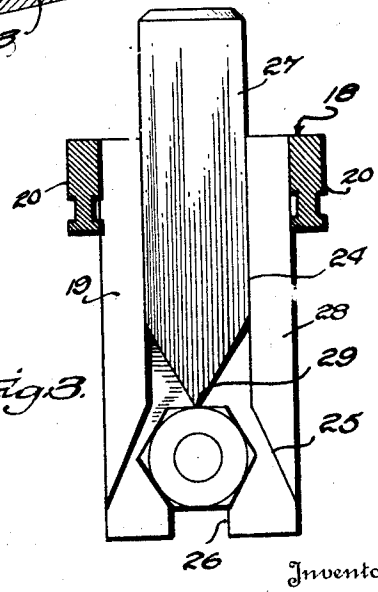


Fig. 3.



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UNITED STATES PATENT OFFICE.

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CUTTING DEVICE.

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This invention relates to cutting devices and more particularly to a device adapted for cutting the nuts of bolts used for securing rail sections together.

As is well known, railroad rails are secured together by placing the rail sections in end to end relation and bridging across the ends of the sections with fish plates or the like which are bolted to the adjacent ends of the rails. The bolts, of course, remain in position over long periods of time and the nuts become rusted on the bolts, thus making it difficult to remove them when it is desired to replace the rails. These bolts usually are removed by employing a cold chisel for splitting the nut to permit it to be removed, one workman usually holding the cold chisel while another strikes it with a sledge hammer. Obviously this practice requires the services of two workmen and has been found to be a source of danger to the workman who holds the cold chisel.

An object of the present invention is to provide a simple holding means for the cold chisel whereby it is held in operative position with the edge thereof contacting with the nut to be cut or split, whereby a single workman may cut the nut by striking the cold chisel with a sledge hammer or the like.

A further object is to provide a device of the above mentioned character comprising a member adapted to be arranged over a rail and provided with a guide in which the cold chisel is slidable, the chisel being arranged with its edge in contact with the nut.

A further object is to provide an adjustable clamp having a pair of arms adapted to grip against opposite sides of a rail to maintain it in position, one of the arms having a vertical guide therein to receive a cold chisel whereby the edge of the latter is arranged in contact with the nut, the upper end of the chisel projecting beyond the clamp to be struck by a sledge hammer or the like.

Other objects of the invention will become apparent during the course of the following description.

In the drawings I have shown one embodiment of the invention. In this showing,

Figure 1 is a perspective view showing the device in operation,

Figure 2 is a transverse section through a rail, showing the device applied, and,

Figure 3 is a section taken substantially on line 3—3 of Figure 1.

Referring to the drawings the numeral 10 designates an ordinary rail having a tread 11, web 12 and base 13. Fish plates 14 are arranged against opposite sides of the web and are secured to the rail by bolts 15. It will be apparent that the fish plates bridge across the adjacent rail sections whereby the latter may be secured together in alinement with each other. Each bolt is provided with a head 16 and a nut 17 which is threaded on the bolt and engages the outer face of one of the fish plates.

The device of the present invention comprises a clamp indicated as a whole by the numeral 18. This clamp includes a depending relatively thick arm 19 connected at its upper end to horizontal guide arms 20 which may be formed integral therewith, as shown in Figure 1. Each arm 20 is provided with inner and outer guide grooves 21, and the arms are connected by a preferably integral cross member 22 having an internally threaded opening 23 therein.

The arm 19 is provided in its inner face with a vertical guide groove 24, the lower end of which diverges outwardly as at 25 to form a nut receiving space. The lower end of the arm 19 is slotted as at 26 to receive the projecting end of the bolt 15, as shown in Figure 2. The groove 24 is adapted to receive a cold chisel 27 the cross sectional shape of which corresponds to the shape of the groove 24. The inner face 28 of the arm 19 is adapted to be clamped against the adjacent faces of the tread of the rail and one of the fish plates, and the groove 24 is preferably of such a depth as to permit a slight play between the inner face of the cold chisel and the adjacent faces of the rail and fish plate whereby the chisel is prevented from binding when the device is clamped in position. The lower end of the cold chisel is provided with a cutting edge 29 which is adapted to engage one face of the nut 17, while the upper end of the cold chisel projects a substantial distance upwardly beyond the clamp.

An adjustable arm 30 is adapted to engage against the opposite face of the rail tread and the outer face of the other fish plate as clearly shown in Figure 2. The arm 30 is provided with cut outs at its upper end to receive the arms 20 and is provided with inwardly projecting portions 31 slidably engaging the grooves 21. A screw 32 is rotatably mounted in the upper end of the arm 30 and is provided with collars 33 engaging

opposite faces of the arm 30 to prevent sliding movement of the screw with respect to the arm. The screw is threaded in the cross member 22 and is adapted to be operated by a wing nut or the like 34. In order that the arm 30 may lie flat against the tread of the rail and the adjacent fish plate, it is provided with a cut out portion or recess 35 to receive the head 16 of the bolt 15.

The operation of the device is as follows:

When it is desired to replace a rail section, obviously the bolts 15 must be removed and this conveniently can be done only by cutting the nuts 17, as previously stated. The clamp is placed in position over the rail with the arms thereof arranged in the position shown in Figure 2, and the screw 32 is operated to clamp the arms against the rail. When the device is in operative position, it will be apparent that the head 16 is arranged in the recess 35 to permit the arm 30 to lie flat against the rail and fish plate. The chisel is then inserted in the position shown in Figures 2 and 3, and the workmen successively strikes the upper end of the chisel with a sledge hammer or the like until the nut has been cut sufficiently to permit its removal. It will be obvious that a single workman may cut the nuts and remove the fish plates, thus effecting a saving in labor and eliminating the danger usually present when a different workman holds the cold chisel.

It is to be understood that the form of the invention herewith shown and described is to be taken as a preferred example of the same and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. A device of the character described comprising a pair of guide arms adapted to be arranged across the top of a rail transversely thereof, a stationary depending arm carried by said guide arms and adapted to be arranged against one side of the rail, a movable arm carried by said guide arms and adapted to be arranged against the opposite side of the rail, the inner face of said stationary arm being provided with a vertical groove, a cutting element slidable in said groove and provided at its lower end with a cutting edge, the upper end of said cutting element projecting upwardly beyond said stationary arm and said guide arms, a cross member carried by said arms, and a screw rotatably connected to said movable arm and threaded in said cross member.

2. A device of the character described comprising a pair of spaced parallel guide arms having grooves therein and adapted to be arranged across the top of a rail transversely thereof, a stationary depending arm carried by said guide arms and adapted to be arranged against one side of the rail, the inner face of said stationary arm being provided with a vertical groove, a cutting element slidable in said groove and provided at its lower end with a cutting edge, the upper end of said cutting element projecting upwardly beyond said stationary arm and said guide arms, a movable depending arm provided with portions slidably arranged in the grooves of said guide arms, a member connected between said guide arms, and a screw rotatably connected to said movable arm and threaded in said member.

In testimony whereof I affix my signature.

CHARLES RINALLO.