J. W. NICHOLS.

RAIL BOND REMOVER.

APPLICATION FILED AUG. 29, 1919.

1,373,017. Patented Mar. 29, 1921.

Fig. 1.

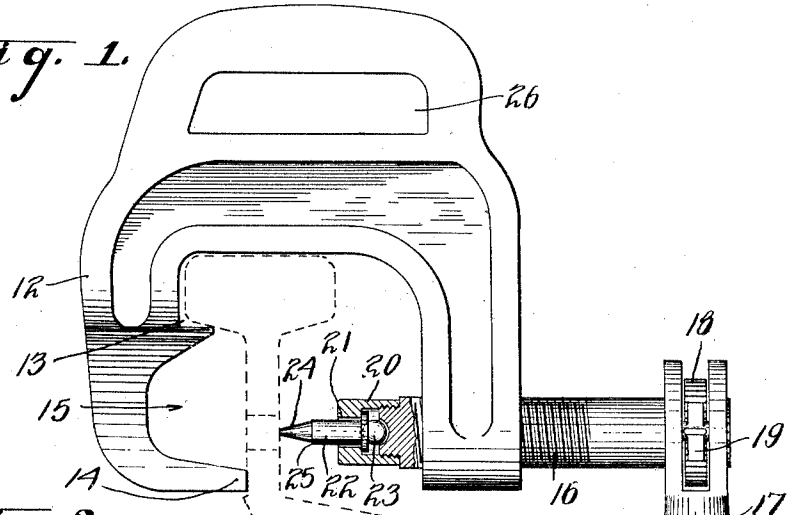


Fig. 2.

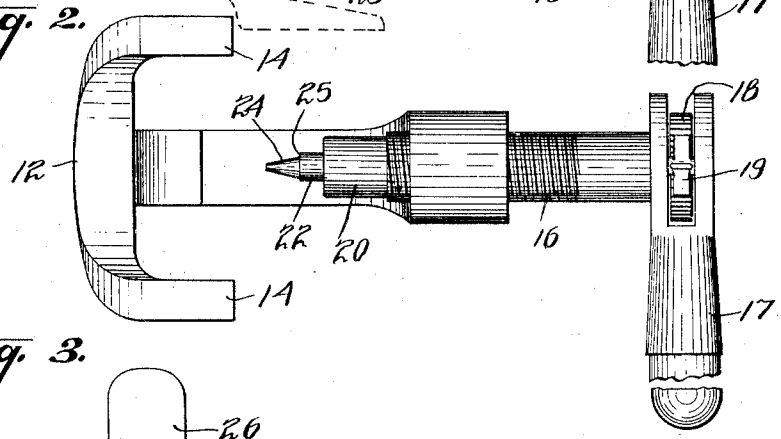


Fig. 3.

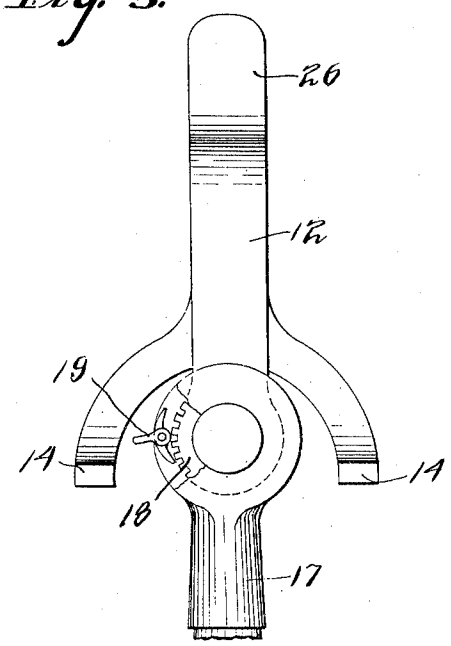
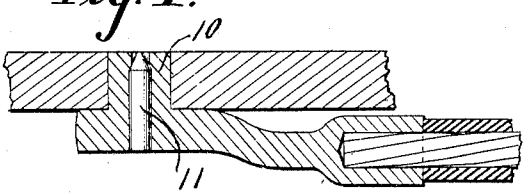


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN W. NICHOLS, OF DEER LODGE, MONTANA.

RAIL-BOND REMOVER.

1,373,017. Specification of Letters Patent. Patented Mar. 29, 1921.

Application filed August 29, 1919. Serial No. 320,654.

To all whom it may concern:

Be it known that I, JOHN W. NICHOLS, a citizen of the United States, residing at Deer Lodge, in the county of Powell and State of Montana, have invented certain new and useful Improvements in Rail-Bond Removers, of which the following is a specification.

This invention relates to devices for removing bonds from rails and has for an object to provide a device which shall first displace the dowel pin from the shank of the terminal and then force the terminal out of engagement with the rail without mutilating either the terminal or the dowel pin, whereby each may be again used.

Referring to the accompanying drawings which form a part hereof and on which similar reference characters indicate similar parts,

Figure 1 is a view of the device in side elevation showing in dotted lines the position relative to the rail,

Fig. 2 is an inverted plan view,

Fig. 3 is an end view of the device taken from the handle or operating end, and

Fig. 4 is a view of one particular type of terminal upon which the device is particularly adapted to operate.

The majority of rail bonding is accomplished by the use of a terminal rigidly secured to the bonding cable. Such terminal is shown at Fig. 4 and comprises a shank 10 properly proportioned for easy insertion into a drilled opening in the web of the rail and with a dowel pin 11 driven through a perforation concentric with the shank 10 whereby such shank 10 is expanded into intimate frictional engagement with the drilled opening in the rail to make the necessary electrical contact and also retain the bond in position. Heretofore the method of removing such bonds, when removal became necessary, has been by means of a sledge and punch, which has resulted in mutilating the dowel pin and terminal, defeating a further use of either of these articles.

The present invention comprises a U-shaped frame 12 having an inwardly projecting shoulder or lug at a point to form a recess 13 proportioned to receive the head of the rail and spaced fingers 14 proportioned and positioned to bear against the web of the rail below the bond position. Between the recess 13 and fingers 14 a recess 15 is provided in which the bond terminal is accommodated and permitting free movement of such terminal and bond when removed in the manner hereinafter more specifically described.

The U-shaped frame 12 opposite the recess 15 is provided with a screw 16 to which power is applied in any approved manner, as by means of the lever 17 and preferably, though not necessarily, a ratchet 18 and pawl 19.

The screw 16 at its end opposite the lever 17 is provided with a screw cap 20 having a perforation 21 coaxial with the screw 16 with a punch indicated as a whole at 22 inserted through said perforation bearing within the cap 20 against a ball 23, which in turn bears against the extremity of the screw 16.

The punch 22 is provided with a truncated conical extremity 24 and a shoulder 25. The frame 12 merely for convenience in handling is provided with a hand-hold 26, such hand-hold, however, forming no part of the invention but being merely a matter of convenience in use.

In operation the device is positioned about a rail as indicated at Fig. 1, with the apex of the cone 24 properly positioned against the inner end of the dowel pin 11. By rotating the screw 16 from and by the use of the lever 17 the punch 22 has its extremity forced against the dowel pin 11, first moving such dowel pin slidably within the shank 10 of the terminal. This serves to displace the dowel pin, such action being continued until the shoulder 25 engages against the end of the shank 10 and a continued manipulation forces the shank out of the drilled opening to release the terminal from the rail. The dowel pin being first forced out of the terminal, after which the terminal being forced out of the rail, leaves both the dowel pin and the terminal in proper condition to be again inserted in a rail so that a renewal of the bond and terminal is not made necessary.

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

1. A device for removing a rail bond embodying an expander pin, said device comprising a frame adapted to span the rail, means provided on the frame for engaging the under side of the rail head, a punch carried by the frame proportioned to first engage and displace the expander pin and

progressively engage the shank of the bond and remove the bond, and means carried by the frame for exerting pressure upon the punch.

2. A device for removing a bond from a rail, said bond comprising an inserted shank and expander pin, said device comprising a frame, proportioned to span the rail and providing a recess upon one side of the rail proportioned to accommodate the bond and terminal, means provided on the frame for engaging the under side of the rail head, a punch carried by the frame upon the side of the rail opposite the recess, and means carried by the frame for exerting power to move the punch toward the recess.

3. A device for removing a bond from a rail, said bond comprising an inserted terminal and expander pin, said device comprising a frame proportioned to span the rail having means for securely holding the frame to the rail, a punch carried by the frame, positioned to engage axially against the expander pin and provided with means for engaging against the shank of the terminal, a screw carried by the frame coaxially with the punch and means to apply power to rotate the screw.

4. A device for removing a bond from a rail, said bond comprising an inserted terminal shank and expander pin, said device comprising a U-shaped frame formed with inwardly projecting fingers adapted to engage against one side of the rail, a punch carried by the frame, said punch embodying a truncated conical extremity with an annular shoulder extending beyond the base of the cone, a screw carried by the frame coaxially with the punch, and means to apply power to force the truncated apex of the cone into engagement with the dowel pin and progressively the shoulder into engagement with the inserted shank and by continued pressure to force the shank out of engagement with the rail.

5. A device for removing a bond from a rail, said bond comprising a terminal having an inserted shank and expander pin, said device comprising a frame proportioned to span the rail and providing a recess proportioned to accommodate the bond and terminal, a projection above the recess for engagement with the rail head and another projection below the recess for engagement with the web of the rail, a punch carried by the frame opposite the recess, said punch having means for displacing the bond and terminal successively, power means carried by the frame, and means to transmit the power from the power means to the punch.

6. A device for removing a bond from a rail comprising a frame provided with means for engaging the rail and holding the frame thereto during operation of the device, a screw carried by the frame, a punch carried by the screw, means whereby the punch is removably secured to the screw, and means for advancing the screw to bring the punch into engagement with the bond.

In witness whereof, I have hereunto set my hand and seal at Washington, District of Columbia this 28th day of August, A. D. nineteen hundred and nineteen.

JOHN W. NICHOLS. [L. S.]