(No Model.)

G. E. HEINBACH.

RATCHET DRILL FRAME.

No. 415,198. Patented Nov. 19, 1889.

FIG. 1.

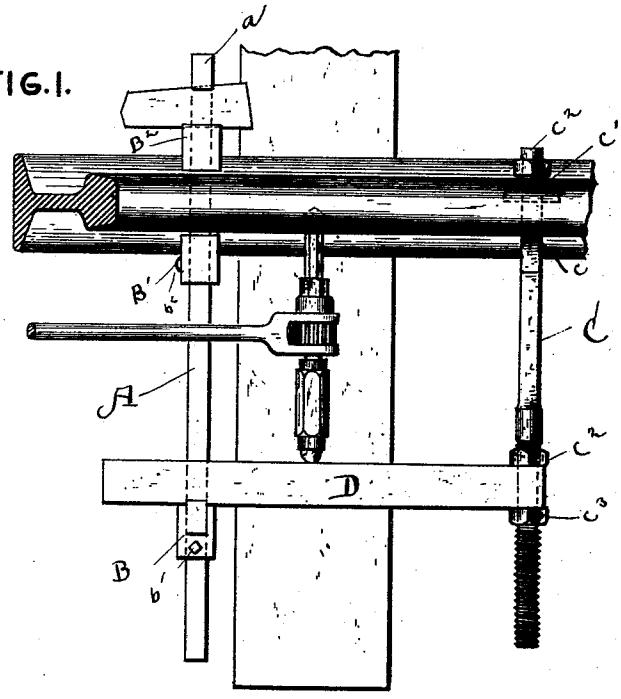


FIG. 2.

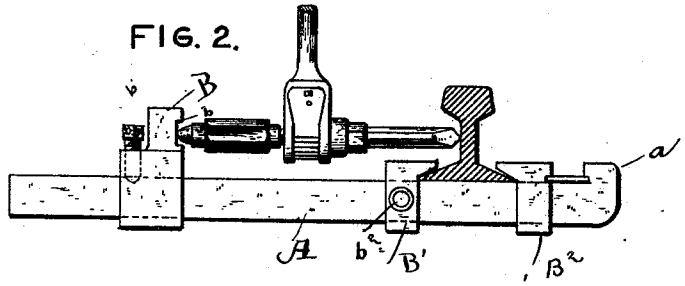
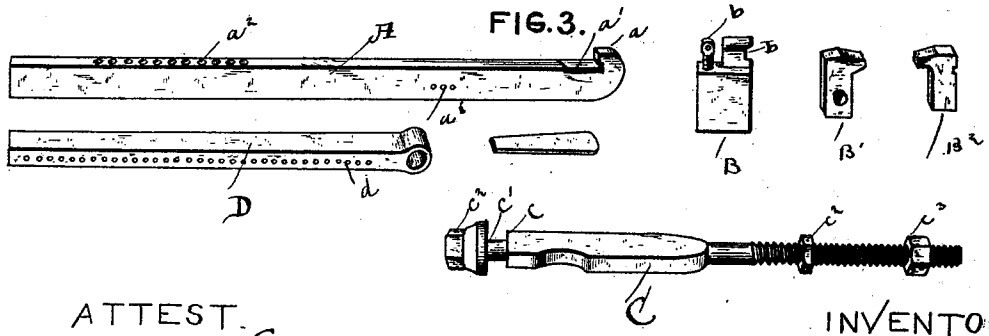


FIG. 3.



ATTEST.

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GEORGE E. HEINBACH, OF LEWISTOWN, PENNSYLVANIA.

RATCHET-DRILL FRAME.

SPECIFICATION forming part of Letters Patent No. 415,198, dated November 19, 1889.

Application filed May 25, 1889. Serial No. 312,132. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. HEINBACH, a citizen of the United States, and a resident of Lewistown, in the county of Mifflin and State of Pennsylvania, have invented certain new and useful Improvements in Ratchet-Drill Frames; and I hereby declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to make and use the invention.

This invention relates to ratchet-drill frames.

Heretofore by the use of the ordinary drill-frames employed for boring holes in railroad-rails, &c., great inconvenience has been caused by the delay caused to trains incident to their passage over the rails while the frame is being used. Furthermore, difficulty has been experienced by the necessity of using one particular kind of ratchet-drill in connection with the frame, and, finally, it has been difficult to perform the operation of drilling either on the outside of the rail, between the tracks, on the top of the ties, or on either side of the same by one and the same tool. In order to obviate this and numerous other objections, I have invented a drill-frame capable of being used with any ratchet-drill—one which may be adjusted to fit any rail; one that may be used between the tracks as well as on the outside of the rail; one that, when used between the tracks, may serve the dual purpose of a brace and of a drill, thus making it perfectly safe for trains to pass over the rails at any time and at any speed by simply lowering the handle of the ratchet-drill, and, finally, one that can be attached to any part of a rail, either over or between the ties.

I have illustrated the invention in the accompanying drawings, in which like letters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 represents a top plan view of my frame, showing the parts in operative position, the frame being attached between the tracks. Fig. 2 represents a side view of the same, and Fig. 3 represents a detail view of the various operative parts in their relative proportions.

In the drawings, A represents a straight bar, preferably made of cast-steel, and, say, about twenty-eight inches long, two inches wide, and one inch thick, designed to be placed lengthwise of the tie, either on top or upon one side of the same, and to pass underneath the rail to be drilled. The bar has at one end an offset a, extending into which, on the face of the bar from which the offset projects, is an angular depression or mortise a', there being, if desired, upon the same face a series of indentations a^2, and at one side another series of indentations a^3. The bar is placed in position, with the offset and described face upward. Upon the bar are slid three heads B, B′, and B^2, preferably of steel, the head B being designed to receive the end of a ratchet-drill, preferably in a projection b, with overhang, which serves a purpose presently to be explained, and the heads B′ and B^2 being designed to be clamped against the web of the rail, to present means for keeping the frame steady while in use. The head B is movable longitudinally on the bar A in order to accommodate ratchet-drills of various lengths, and is provided with any suitable device to permit its adjustment on the bar A and retain it firmly in the desired position when adjusted—such as a set-screw b'—to be turned into one of the indentations a^2 on the bar. The head B′ also is movable longitudinally on the bar A, to be moved to and from the web of a rail, and is provided with any suitable device to permit its adjustment on the bar A, and retain it firmly in the desired position when adjusted—such as a set-screw b^2—to be turned into one of the indentations a^3 on the side of the bar A. The head B^2, designed to take over the other side of the web of the rail, forms an abutment against the offset a, there being a key or wedge inserted in the mortise between this head and the offset, the key serving the double purpose of tightening up from this end, and by a nick in the head and by the mortise extending under the offset holding it steadily in place.

In some cases I may dispense with the head B^2 and bring the offset a of the bar A against the rail, thus forming an adequate clamp with the head B′; or, using the heads B′ and B^2, I

may dispense with the wedge and bring the head B^2 flush against the offset of the bar.

C represents another bar, preferably of refined iron, the purpose of which is, by means of bar D, to hold the rail which is being drilled in proper relative position to the adjacent rail. This bar C has a lug or shoulder at c, preferably about six inches from the screw-threaded end c', forming a brace to rest against the rail, and, in connection with nut c^2, taking upon the screw-threaded end c' after the said end is introduced into the hole already made in the rail to retain the bar C in proper position. The opposite end of C is also screw-threaded for a distance equal to about half its entire length, designed to receive the nuts c^2 and c^3, the purposes of which are hereinafter set forth.

The bar D, preferably of steel, and, say, about twenty inches long by three-fourths inch thick by two inches wide, is designed to be used in drilling successive holes after the first has been bored. This bar D is provided with a circular opening or eye at one end, to be entered by the screw-threaded portion of C farthest from the rail, and is held against displacement by means of the nuts c^2 and c^3. The bar D is further provided with a series of indentations d for receiving the end of the drill, these indentations serving the purpose of preventing the drill from becoming dislodged.

The operation of drilling the first hole is as follows: Having slid the head B^2 upon the bar A, the bar A is then placed in position under the rail, with the offset a and the mortise a' upon the upper face. The head B′ is then slid upon the bar A until it impinges upon the web of the rail, and is retained in position by means of set-screw b^2 being turned into one of the indentations a^3 on A, and the wedge or key being inserted in the mortise of A and the nick in head B^2, the bar is firmly and securely attached to the rail. I now slide head B upon the bar A; then place the drill in position, one end resting against the rail and the other against the head B, after which I adjust head B until it presses tightly against the end of the drill, and then retain the head in position by turning the set-screw b' into one of the indentations a^3 on bar A. By this operation the drill is securely held against dislodgment.

In drilling successive holes the operation is as follows: The bar A having been placed and retained in position, as above described, I place the bar C in position by inserting the screw-threaded end c' into the hole already bored in the rail until the lug or shoulder c formed thereon fits snugly against the rail, and then screw nut c^2 into position, whereby the bar C is held rigidly in place. I then screw nut c^2 upon the opposite end to that upon which nut c^2 is placed and introduce the perforated end or eye of bar D upon this end of bar C, allowing it to impinge against nut c^2, after which I screw nut c^3 on this end of bar C. Bar D, it is evident, will by its own weight fall against the upper face of bar A. I then introduce one end of the drill into one of the indentations d on the bar D, after which head B is slid upon bar A until it presses against the bar D, when it is retained in position by set-screw b', the overhang on head B preventing the bar D from being raised out of its proper position. The nuts c^2 and c^3 then being adjusted to bring the bar D in a position parallel to the rail, the device is in a position ready to be operated.

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

1. In a ratchet-drill frame, the straight bar having a longitudinal adjustable head capable of receiving the end of a drill, and an adjustable clamping device capable of taking upon a railway-rail, substantially as described.

2. In a ratchet-drill frame, the combination, with the straight bar having the offset and the mortise, of the three heads thereon capable of adjustment and longitudinal fixture upon the bar, and the key or wedge, substantially as described.

3. In a ratchet-drill frame, the combination, with the straight bar having indentations on a face and side, of the head B, provided with a set-screw to take into the indentations on the face, and the head B′, provided with a set-screw to take into indentations on the side.

4. In a ratchet-drill frame, the combination, with a straight bar, of the adjustable head B, having the indentation and overhang, whereby a receptacle for the drill and means for retaining a bar against which the drill bears are formed, substantially as described.

5. In a ratchet-drill frame, the combination, with a straight bar and an adjustable head thereon, of a bar capable of insertion into a perforation in a railway-rail, and another bar capable of attachment to the bar inserted in the railway-rail and to the adjustable head on the straight bar, to hold the drill against the railway-rail, substantially as described.

6. In a ratchet-drill frame, the combination, with the straight bar having a head capable of sliding adjustment thereon and provided with overhangs, of a bar C, capable of attachment to a railway-rail, and a bar D, capable of adjustment on the bar C, the bar D at one part resting against the head on the straight bar and being under the overhang on the same.

7. In a ratchet-drill frame, the combination, with a straight bar having indentations on its face, of a head having an overhang, being capable of sliding upon the straight bar, and provided with a set-screw to take into the indentations on the face, whereby it may be adjusted, a bar C, screw-threaded on a portion of its surface and provided with nuts

c^3 and c^2, and a bar D, having an eye, perforation, or ring at one end where it takes over the bar C, having indentations at one side and at its other end resting under the overhang of the head or chuck on the straight bar, whereby a drill may be adjusted on the length of the bar D to drill a hole or number of holes and be pushed up against the rail, as required, by turning the nuts on the bar C and the chuck or head on the straight bar against the bar D, substantially as described.

In testimony whereof I affix my signature in presence of witnesses.

GEORGE E. HEINBACH.

Witnesses:
WM. S. SETTLE,
GEO. S. CARNEY,
LEWIS SLAGLE.