

C. NORTON.
Punching-Machine.

No. 166,134.

Patented July 27, 1875.

Fig. 1.

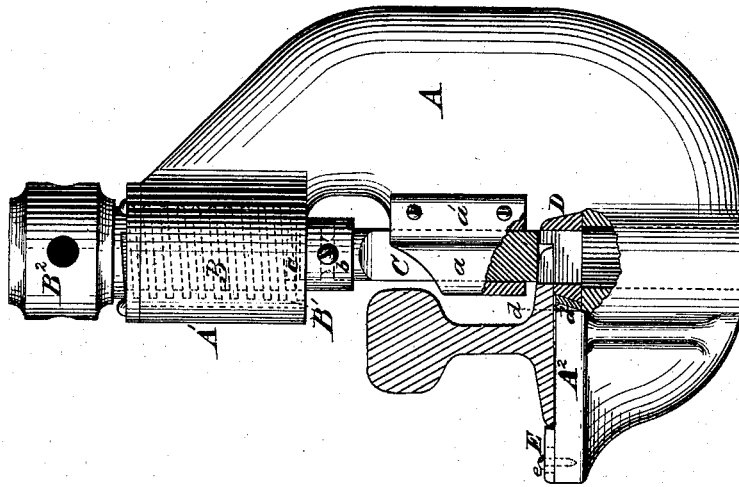


Fig. 2.

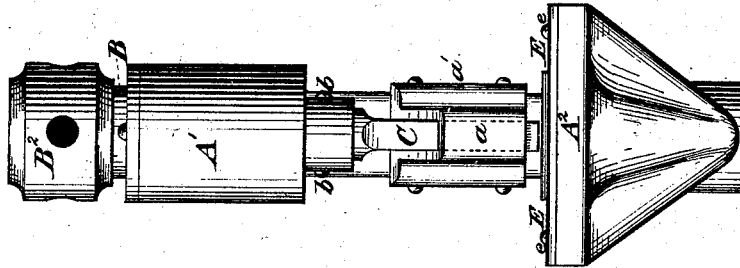
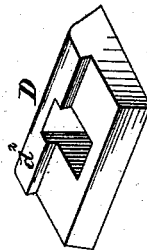


Fig. 3.



Witnesses

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att'y.

UNITED STATES PATENT OFFICE

CHARLES NORTON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN PUNCHING-MACHINES.

Specification forming part of Letters Patent No. **166,134**, dated July 27, 1875; application filed May 28, 1875.

To all whom it may concern:

Be it known that I, CHARLES NORTON, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Portable Punch for Railroad-Rails, of which the following is a specification:

The object of my invention is to provide a rail-punch, which, while so light and compact as to be portable, shall be of sufficient strength and capacity to enable the flanges of steel rails to be punched by manual power, and shall be further capable of adjustment to take in rails of different widths, to which ends my improvement consists in the combination of a frame or housing carrying the nut of the punch-screw, a rear bearing and a guide for the punch, a rail-table, an adjustable die, and an adjustable rail-gage, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a side view, partly in section, of a rail-punch embodying my improvement; Fig. 2, a front view of the same; and Fig. 3, a view in perspective of the die detached.

To carry out the object of my invention I provide a strong metallic frame or housing, A, on the upper portion of which is formed a long hub, A¹, for the reception of a nut, B¹, and on the lower portion a rail-table, A². A stout screw, B, having a cap, B², for the insertion of a lever, works in the nut B¹, the lower end of the screw carrying a square or rectangular punch, C, the depth of which is greater than that of the slot to be punched in the rail. The punch is connected to the screw by set-screws or pins, b, the inner ends of which enter a circular groove formed in the upper end of the punch, which is at that portion cylindrical. A hard-metal washer, c, is interposed between the top of the punch and the bottom of the orifice in the screw in which it rests. The punch might be operated by a lever or levers instead of a screw, if preferred. A guide, a, secured to the housing incloses the punch and insures its rectilinear motion. A long rear bearing, a', for the punch is formed upon the frame A, and extends from a point as high up on the frame as will give sufficient clearance between itself and the upper cylindrical portion of the punch down to the lowest extremity of the travel of the latter, thus affording an abutment to the force of resistance of the flange to be punched for the entire duration of the operation, and preventing the

bending or breaking of the punch therein. In the drawing the lower portion of the bearing is shown as formed upon the back of the opening in the die through which the pieces of metal punched out fall; but it is obvious that it might be made continuous upon the frame, if preferred, and in such case its projection into the die would serve to hold the latter in position. The die D is fitted into a dovetail recess in the lower portion of the frame A, being adjusted and held firmly in position by a feather, d, and key d'. Its upper surface is on a level with the table A², on which the rail is supported, and a rib or flange, d², is formed on its inner side, against which the rail-flange to be punched rests. A gage, E, is placed on the opposite side of the table, and is held thereto by screws e, which pass through slotted holes in the gage, to enable the latter to be adjusted and set at such distance from the rib d² as may be required by the width of the rail. The frame A and hub A¹ being entirely clear of the web and top of the rail, it will be seen that rails of different heights can be punched with equal facility. A vertical opening is cored or cut through the frame to enable the pieces of metal punched from the rail to fall out, and the lower end of the punch-guide is set sufficiently near to the die to enable a "puller off" to be dispensed with.

In the operation of the punch the bearing a' by reason of its relative position and extent effectually resists the tendency to bend or break the punch encountered in the passage of the latter through the rail-flange. The projection of the punch beyond the edge of the rail, in order that it may abut against the bearing a', gives it so much of a free and unused surface that it may be readily reversed when worn, and will then present a new working-surface to the rail-flange.

I claim as my invention and desire to secure by Letters Patent—

The improved portable punch for railroad-rails, consisting of the following parts in combination: The frame A with nut B¹, screw B, punch C, guide a and table A², substantially as hereinbefore described and set forth.

CHARLES NORTON.

Witnesses:

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