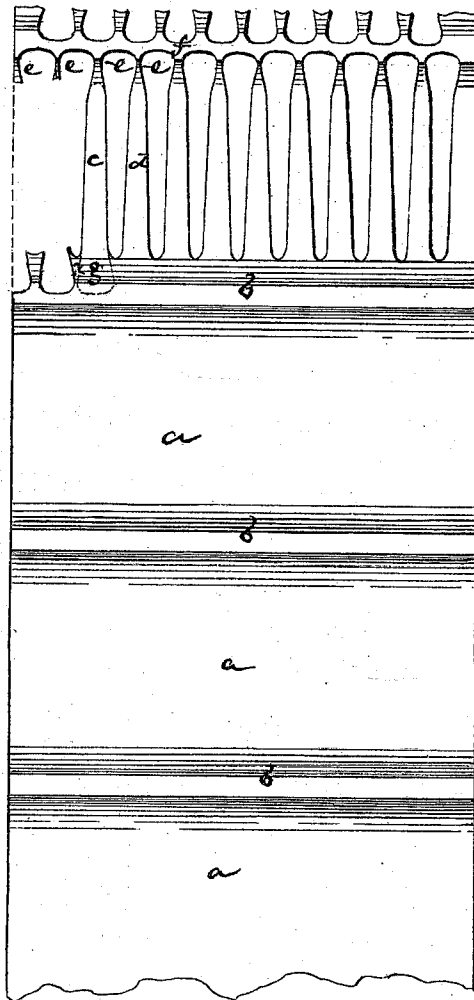


J. C. PAIGE.

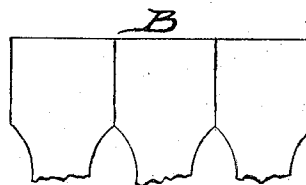
Manufacture of Horseshoe Nails.

No. 142,506.

Patented September 2, 1873.



Witnesses,
M. W. Frothingham,
L. H. Cratimer.



Inventor
John C. Paige,
By his Atty.
Crosby & Gould

UNITED STATES PATENT OFFICE.

JOHN C. PAIGE, OF STONEHAM, MASSACHUSETTS.

IMPROVEMENT IN THE MANUFACTURE OF HORSESHOE-NAILS.

Specification forming part of Letters Patent No. **142,506**, dated September 2, 1873; application filed July 24, 1873.

To all whom it may concern:

Be it known that I, JOHN C. PAIGE, of Stoneham, in the county of Middlesex and State of Massachusetts, have invented an Improvement in the Manufacture of Horseshoe-Nails; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

In punching, from rolled plates, blanks for horseshoe-nails, and especially by the method shown in United States Letters Patent No. 128,045, dated March 26, 1872, it is customary to cut up all of the plate without waste, except at opposite ends of each row, the plate being divided, as seen by the lines upon the diagram in Figure 5 of said patent. This method, though seemingly perfect, is nevertheless productive of imperfect results, the difficulty arising from the fact that, in punching blanks in succession, the heads of part of the blanks, by reason of having no supporting metal upon one side of them, and being sheared off at the opposite sides by the action of the punches, have a cant given to them, which causes one edge to be cut on an angle instead of by a square cut through the metal.

To obviate this defect, I change the form of the punch, and the consequent head of the blank stamped by it from the plate, in such manner that, although the shanks are divided on the lines to form the adjacent edges of adjacent blanks, the head of each blank is severed from the plate so as to leave metal on opposite sides of each head, such metal resisting the action of the punch equally on both sides, and thereby insuring a square cut at each side edge of the head. I effect this result by making the nail-blank with rounded corners instead of with square corners, or in such manner as to leave a connecting-fin attached to the plate as the blanks are punched, and remaining between adjacent blanks, which fin resists the action of the punch equally upon both sides, and insures a perfectly-formed blank.

My invention consists in this method of supporting the opposite edges of the blank-heads during the punching operation.

The drawing represents a portion of a plate, from parts of which blanks have been punched.

a denotes the webs or shank-forming portions of the plate; *b*, the thicker or head-forming portions thereof. *c* and *d* denote two shanks, at the respective opposite sides of which blanks have already been punched from the plate. At the point end of these shanks they are shown as uniting to fin projections *e* from a bar, *f*, and the punches are so formed as to leave this bar and these uniting pieces, connecting each blank to the plate as a blank is removed at its side, the cut that severs any head severing such head not directly from the next head, but from the intervening piece. Between the opposite heads the punches take all the metal, the web portion of each section simply forming adjacent shanks, and being all utilized in such formation, while at the heads the fin portions are left. This necessitates a greater cutting action of the punch, as in cutting out the head *g* the punch has to cut on the line *x*, whereas, in the old method, there would be only an open space beyond the outer line of the punch; but the formation of the squarely-cut head more than counterbalances the labor required to cut on both sides of the head, besides which the punch has, in the old method, to cut on both sides at once in one operation, and of course has the same power applied for the next operation, although the punch in fact only cuts at one side of the head.

The resisting-fin is formed by cutting the head rounding at the corners *h*, (as seen in Fig. 1 and at A, which shows an enlarged view of the head,) instead of square, as shown at B.

I claim—

The improvement in punching horseshoe-nail blanks, substantially as described.

JOHN C. PAIGE.

Witnesses:

FRANCIS GOULD,
M. W. FROTHINGHAM.