H. P. FOWLER.

ART OF MANUFACTURING HORSESHOE NAILS.

No. 186,720. Patented Jan. 30, 1877.

Fig. 1

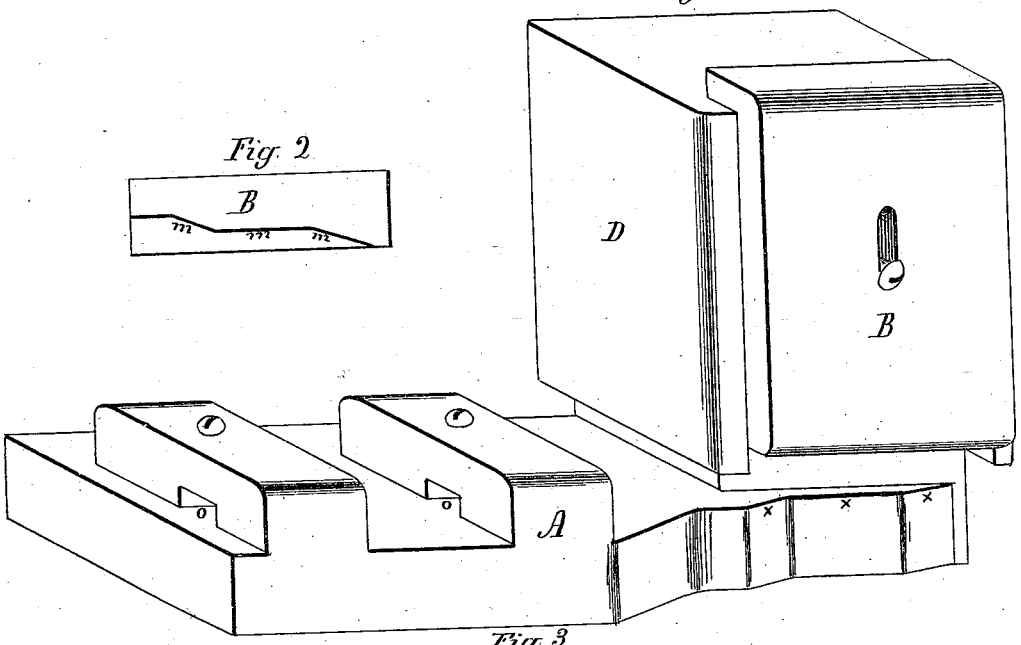

Fig. 2

Fig. 3

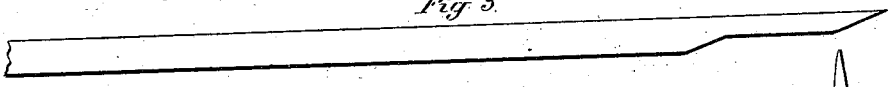

Fig. 4

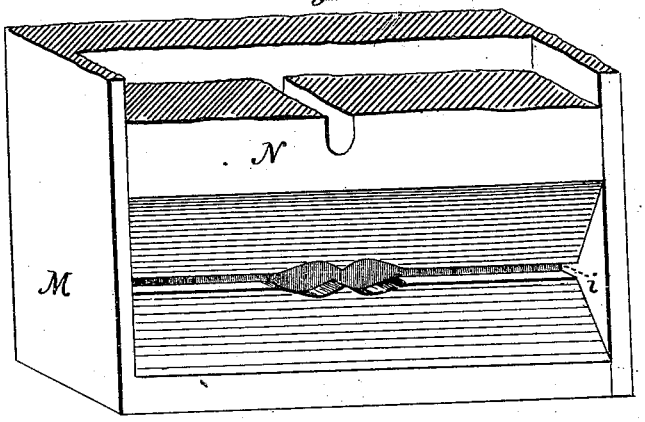

Fig. 5 Fig. 6

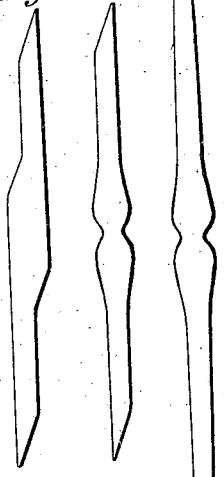

Fig. 7

Witnesses
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UNITED STATES PATENT OFFICE.

HEBER P. FOWLER, OF SEYMOUR, CONNECTICUT.

IMPROVEMENT IN THE ART OF MANUFACTURING HORSESHOE-NAILS.

Specification forming part of Letters Patent No. **186,720**, dated January 30, 1877; application filed December 20, 1876.

To all whom it may concern:

Be it known that I, HEBER P. FOWLER, of Seymour, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in the Art of Manufacturing Horseshoe-Nails; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use it, reference being had to the accompanying drawing, which forms a part of this specification.

As heretofore made, the blanks of machine-made horseshoe-nails have been separated from each other before finishing the nails; or the metal has been cut into "cards" or "combs" of blanks, the blades or shanks of the nails pointing in the same direction, and the blades and points finished before the separation of the heads.

My invention consists, essentially, in cutting iron into pieces forming two blanks united by the metal forming the heads, the blades extending from sides or edges of the same in opposite directions, in straightening the pieces and forming the heads of the nails at one and the same operation by dies, in finishing the blades and points while the blanks are connected, and then in separating the heads, the ends of the same being the line of separation. By operating in this way I am able to cut the metal with minimum waste, and to finish the blades and points as well as though the blades were separate.

In the drawing, Figures 1, 2, and 4 show the tools by which the operations are performed. Figs. 5, 6, and 7 show the blanks in the different forms which they assume during the manufacture. Fig. 3 is a view of the bar-iron from which the blanks are cut.

A and B, Fig. 1, are the die and punch by which the piece shown in Fig. 5 is cut. A is the die, the cutting-edge of which is indicated by the letters *x x x*. B is the punch, the cutting-edge of which is indicated by the letters *m m m* in Fig. 2, which is an end view of the punch. The bar shown in Fig. 3 is fed through the apertures *o o*. The punch and die are fitted in a common press, the upright part D being omitted. Shears may also be employed to cut the piece.

In the piece shown in Fig. 5, the metal which forms the blades extends from the sides or edges of the metal forming the heads in opposite directions. The bar shown in Fig. 3 is cut through the middle, to make the part of the piece which forms the blades, the ends of the piece being beveled, and is left full size to make the heads, as shown in Figs. 3 and 5. In cutting the bar in this way, the only waste in a bar is a piece of the bar of the length of the piece which makes the blades.

M and N, Fig. 4, are dies for straightening the piece shown in Fig. 5. By straightening the piece, I mean subjecting it to an operation which brings it into the form shown in Fig. 6, in which a straight line will pass through the central portions of the blades and heads of the blanks. The heads are somewhat thickened by this operation, and properly formed, the line of attachment being the ends of the heads when separated. Both dies are represented with their upper portions removed to make room for the figure in the drawing. The dies are fitted into a common press or drop. The only peculiarity about them, aside from their peculiar shape to transform the piece shown in Fig. 5 to the blanks shown in Fig. 6, is the piece *i*, back of the lower die, to hold the piece shown in Fig. 5 on its edge, or edgewise, while the operation is performed.

The blanks being in the form shown in Fig. 6, the blades and points may be finished by forging; but I prefer finishing them by the die patented to Robert Kent, May 11, 1869, No. 89,869, the title of the Letters Patent being "Improved Die for Drawing and Reducing Wire," when the heads may be separated by a cold-chisel or other means.

Having described the means and the series of operations by which I manufacture horseshoe-nails, what I claim as my invention, and desire to secure by Letters Patent, is—

The herein-described improvement in the art of manufacturing horseshoe-nails, consisting, substantially, in cutting iron into pieces forming two blanks, attached by the metal composing the heads, the blades ex-

tending from metal forming the heads in opposite directions, in straightening the pieces and forming the heads by dies at one and the same operation, in finishing up the blades and points of the nails while the blanks are attached, the line of attachment being the ends of the heads when separated, and then in separating the heads, all the aforesaid several operations in the order and manner substantially as set forth.

HEBER P. FOWLER.

Witnesses:

GEORGE TERRY,

ROGER M. SHERMAN.