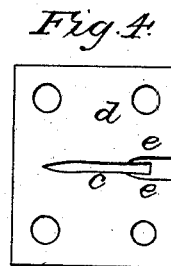
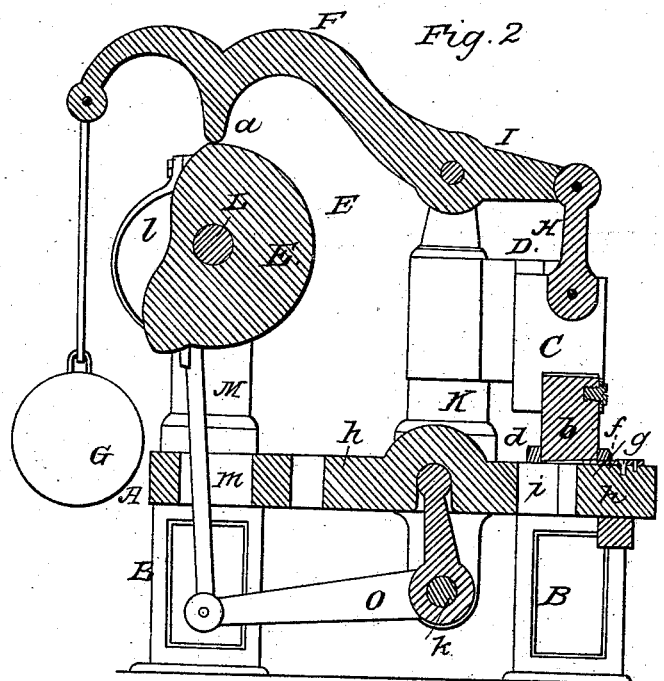
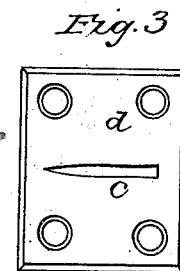
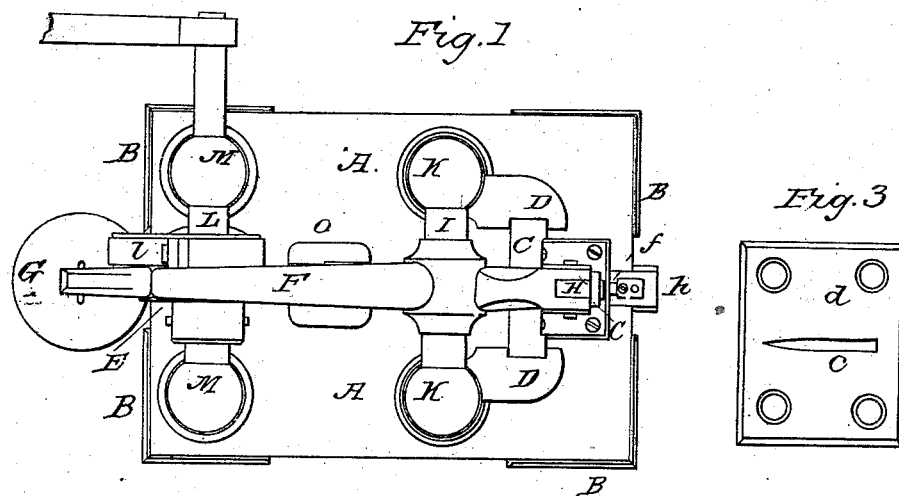


D. WILSON, Jr.

Horseshoe Nail Machine.

No. 7,913.

Patented Jan'y 21, 1851.



D. WILSON, Jr.

Horseshoe Nail Machine.

No. 7,913.

Patented Jan'y 21, 1851.

Fig 5

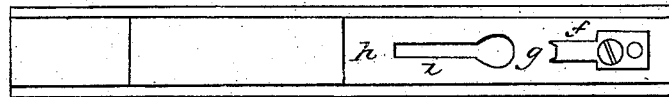


Fig 6

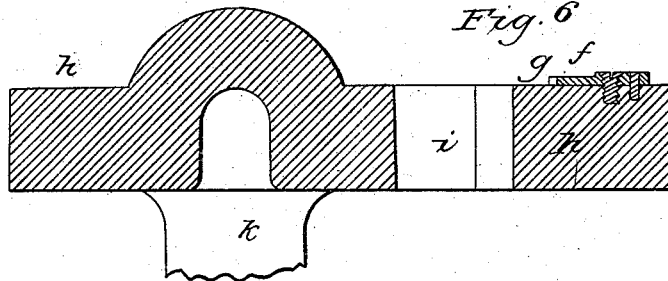


Fig 7

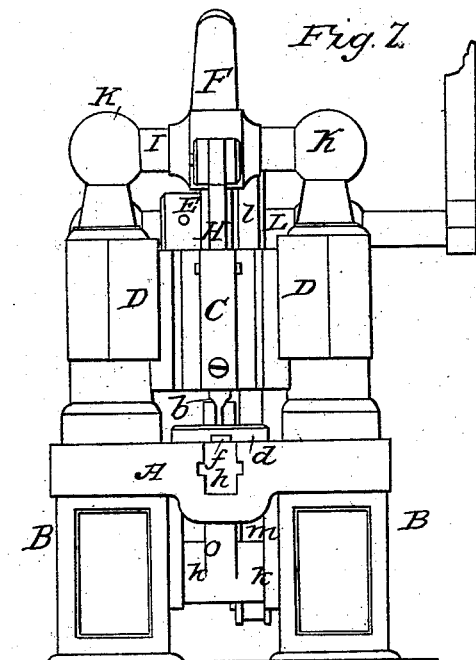


Fig 8

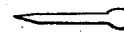


Fig 9

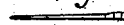


Fig 10



# UNITED STATES PATENT OFFICE.

DANL. WILSON, JR., OF NORTH CHELMSFORD, MASSACHUSETTS, ASSIGNOR TO D. WILSON, JR., AND H. M. BIRD.

## HORSESHOE-NAIL MACHINE.

Specification of Letters Patent No. 7,913, dated January 21, 1851.

*To all whom it may concern:*

Be it known that I, DANIEL WILSON, JR., of North Chelmsford, in the county of Middlesex and State of Massachusetts, have invented an Improved Machine for the Manufacture of Horseshoe-Nails; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawing Figure 1 denotes a top view of my said machine, which is for cutting the nail blanks from rolled plates, and heading them after they are cut. Fig. 2 is a central vertical and longitudinal section of the same. Fig. 3 is a top view of the slotted bed die. Fig. 4 is an underside view of the said die. Fig. 5 is a top view of the header slide. Fig. 6 is a central vertical and longitudinal section of it. Fig. 7 is a front end elevation of the machine. Fig. 8 is a top view of one of the horseshoe nails. Fig. 9 is a side or edge view of it. Fig. 10 is a side or edge view of the sheet of metal, from which the nails are to be cut.

In the said drawings A represents the base plate of the frame which sustains the operative parts of the mechanism, the said base plate being supported on four legs B, B, B, B. Vertically over the base plate a block or frame C, is arranged and supported between guides D, D, such as will allow it to have imparted to it a vertical movement either upward or downward, such movements being produced by means of a cam E, a lever F, and a weight G arranged as seen in the drawings. The lever F is connected to the frame C, by means of a pitman H which is jointed both to it and the frame; the fulcrum shaft I of the lever is supported in bearings made in the tops or upper parts of the two posts K, K. While the weight G is suspended from the long arm of the lever a projection *a*, from the lever is made to rest upon the cam E, such cam being placed and fixed upon a driving shaft L, whose journals are supported in bearings in the tops of the posts M, M.

From the lower end of the frame C, the punch *b* projects downward. The said punch is shaped in horizontal section to correspond with that of the slot *c*, made downward through the bed die *d* which consists of a rectangular plate or block of metal firmly secured or fastened down upon the

base plate A in the position seen in the drawings. The under surface or edge of the punch is not made horizontal but inclined or is shaped to correspond with the inclined shape and form of the upper side of a horseshoe nail when its lower side is made to lay or rest on a horizontal plane.

A space *e*, which may be termed the head die is formed in the under side of the bed die *d*. It is made to receive the header *f* and in connection with such header or the space or recess *g*, thereof, makes or forms or gives the proper shape to the head of the nail such shape being seen in Figs. 8 and 9. The header *f*, projects above a horizontal slide *h*, which I term the header slide, such slide being provided with a wide and elongated orifice *i*, made down through it, in the position, as seen in Figs. 2, 5, and 6, such orifice being in its horizontal section as much longer than the nail as to allow it (the nail) to freely fall through it. The header slide is moved back and forth in a longitudinal direction by a bent lever O, which is placed underneath the base plate, adapted to the slide, as seen in Fig. 2, and turns vertically on a fulcrum at *k*. The said lever is elevated and depressed by an eccentric *l*, and its connection rod *m*, the said eccentric being fixed on the driving shaft.

The cam E and the eccentric *l*, should be so made and arranged as while put in revolution, by the revolution of the driving shaft, they may impart to the parts by which the nail is made, movements to be hereinafter described, it being understood that the nail is to be cut by the machine from the nail plate, which has previously been rolled into a proper shape, and length wise instead of cross wise, of the grain of the iron. Such shape is represented in Fig. 10, which is an edge, as well as a sectional view of a plate, so rolled, and from which two series of nails are to be cut, the heads of the nails being taken from the extremities or thickest parts of the said piece, while the points are taken from or near the middle part of it.

The nail plate having been properly placed on the top surface of the bed die, the punch is next caused to descend and pass through the plate and so as to separate from it a nail blank, which it forces downward toward and upon the header slide, which in the meantime has been caused to advance far enough to cause the blank to rest on

that part of the slide which is between the discharge orifice *z*, and the header, and to be gripped or firmly held stationary between, and by such part, and the lower surface or bottom of the punch. The header slide is next caused to move still farther in the same direction, and to slide underneath the nail blank, and to the extent sufficient to carry the header against the blank, and in conjunction with the heading die, form a head on the blank. The header slide is next made to move backward or in the opposite direction far enough to move or carry the discharging orifice directly underneath the nail blank and so that, it may be forced down into such orifice by the further depression, which next takes place, and which having occurred, the said punch is subsequently raised up to its highest position, and so as to be ready for another operation or action upon the nail plate.

My machine as constructed performs the operation of cutting and heading a nail blank, with fewer parts than any other machine for such purpose known to me. The blank while being headed is held between and by the header slide and the punch, and by making the former to slide or move while the nail is so held. I dispense with the usual set of grippers, and their operative machinery as employed in other nail machines. The combination of parts necessary to cut, and head the nail is thus much simplified, the same being produced by the pe-

culiar construction, arrangement and mode of operating them together as described, and represented.

What therefore I claim is—

The simple combination of the finish, the slotted bed die, the heading die, the header slide, discharging orifice, and header as arranged, constructed and made to operate together substantially as specified, or in other words, their arrangement and construction essentially as explained, whereby they are made to separate the nail blank from the rolled plate; to move it downward upon the header slide, to cause the header slide to advance, in the meantime, to hold the nail blank by means of the punch and header slide, to cause the header slide to slide underneath the nail while it is so held to carry the header against the nail and head it, to cause the header slide to retreat or move backward far enough to carry or move the discharging orifice, directly under the nail, and so that the nail may be forced down into or through such orifice by the further depression of the punch which next takes place, and finally to elevate the said punch to its first or highest position.

In testimony whereof I have hereto set my signature this fourteenth day of December A. D. 1850.

DANIEL WILSON, JR.

Witnesses:

N. T. STAPLES,  
A. J. GUNNISON.