D. FRASER, Jr.

Machine for Rolling Horseshoe Nail Plates or Bars.

No. 207,651. Patented Sept. 3, 1878.

Fig. 1.

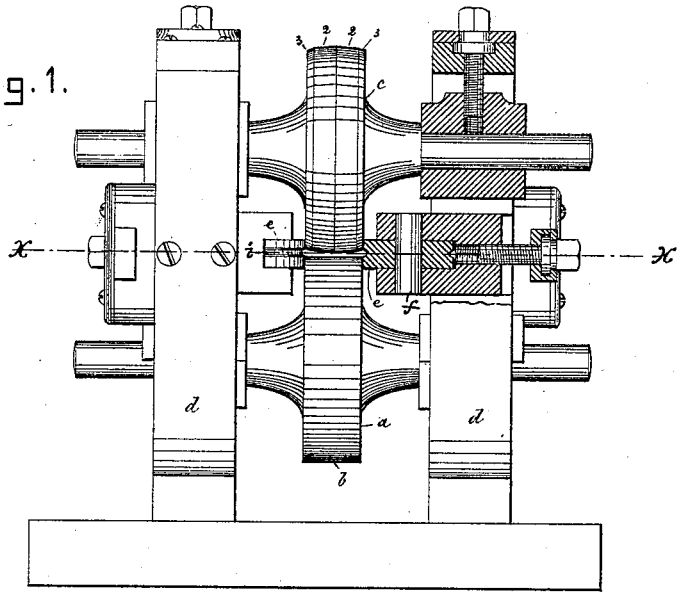


Fig. 2.

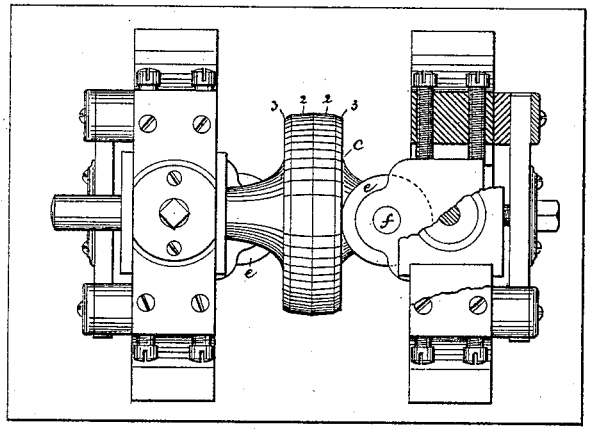


Fig. 4.

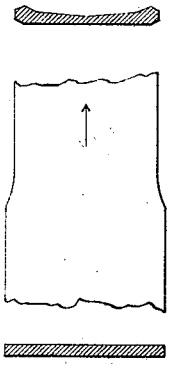


Fig. 3.

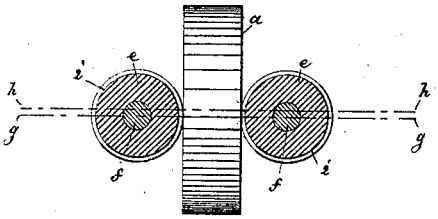
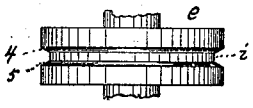


Fig. 5.



Witnesses.

W. E. Pratt.

L. A. Baxter

Inventor.

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UNITED STATES PATENT OFFICE.

DANIEL FRASER, JR., OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR ROLLING HORSESHOE-NAIL PLATES OR BARS.

Specification forming part of Letters Patent No. **207,651**, dated September 3, 1878; application filed December 19, 1877.

To all whom it may concern:

Be it known that I, DANIEL FRASER, Jr., of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Machines for Rolling Horseshoe-Nail Plates or Bars, of which the following is a specification:

This invention relates to mechanism for rolling nail plates or bars for the manufacture of horseshoe-nails.

The object of the invention is to produce a long bar of iron, which, when cut at right angles to its length, will enable the production of nails having shanks and heads projecting from one side only, the heads of successive nails being cut from opposite edges of the nail-plate.

The mechanism shown to roll such a plate is composed of a bed-roll having a horizontal face, and a shaping-roll having a face beveled to reduce the thickness of the bar for the nail-shanks, and to permit the upsetting of the bar at its edges to increase its thickness for the formation of the heads of the nails, these two rollers co-operating with grooved upsetting-rollers having their axes placed just in advance of the axes of the bed and shaping rolls, to upset the edges of the iron to form the plate and force the iron into the angles between the edges of the bed and shaping-rolls just as the acting faces of such rolls catch the iron. This action of the upsetting-rollers furnishes sufficient stock for the operation of the bed and shaping rolls, and permits them to force and carry forward evenly the iron between them, thereby obviating cracking the thicker edges of the nail-plate.

Placing the axes of the upsetting-rollers in advance of the axes of the other rollers, as described, prevents the bed and shaping rollers drawing the center of the iron faster than the edge, which injures its molecular formation more than would be the case were the bar drawn unevenly.

The iron which it is preferred to use for this purpose is that known as "homogeneous iron;" but it is evident that any other suitable iron may be used.

Figure 1 represents in front elevation, partially in section, a sufficient portion of a rolling-machine to illustrate my invention; Fig. 2, a top view thereof, a portion being broken away to show the axis of one of the upsetting-rolls; Fig. 3, a section on line *x x*, Fig. 1, showing the position of the axes of the upsetting-rolls with relation to the axis of the bed-roll. Fig. 4 represents, in top view and section, the bar of iron before and after it has been acted upon by the rolls; and Fig. 5, a separate view of one of the upsetting-rolls.

In connection with the mechanism shown in the drawing, I may use any well-known form of guide.

The bed-roll *a*, having a flat face, *b*, and the shaping-roll *c*, provided each way from its center with two differently inclined or beveled faces, 2 3, the former to shape the shank-forming portion, and the latter to act upon the edges of the bar, are crowded into the opening at the edges of the two rolls *a c*, each held in suitable boxes, supported in the housings *d d*, the boxes preferably being adjustable.

The upsetting-rollers *e e* have their axes *f* located somewhat in advance of the axis of the best roller—as, for instance, as shown in Fig. 3, where the line *g g* represent the line of the axes of the rollers *e*, while the line *h* represents the line of the axis of roller *a*, roller *e* corresponding with it. This difference of location will be more or less, according to the thickness of the iron being rolled—the thicker the iron the greater the distance.

These upsetting-rollers *e* are grooved, as at *i*, the edges of the grooves being beveled, and the grooves receiving the edges of the bar just as the bed and shaping rollers bite the bar to carry it between them. These grooves *i* are beveled to bevel the edges of the rolled nail-bar, as at 4 5, to avoid the formation of what are known as "fins," when such bars are subsequently run between other sets of finishing-rollers.

I claim—

The combination, in a rolling-machine, of a bed and a shaping roller with grooved upsetting-rollers having their axes located just in advance of the axes of the bed and shaping roller, to operate substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DANIEL FRASER, JR.

Witnesses:

G. W. GREGORY,

W. J. PRATT.