J. T. HOUGH.

Horseshoe-Nail Machine.

No. 202,824. Patented April 23, 1878.

Fig. 1.

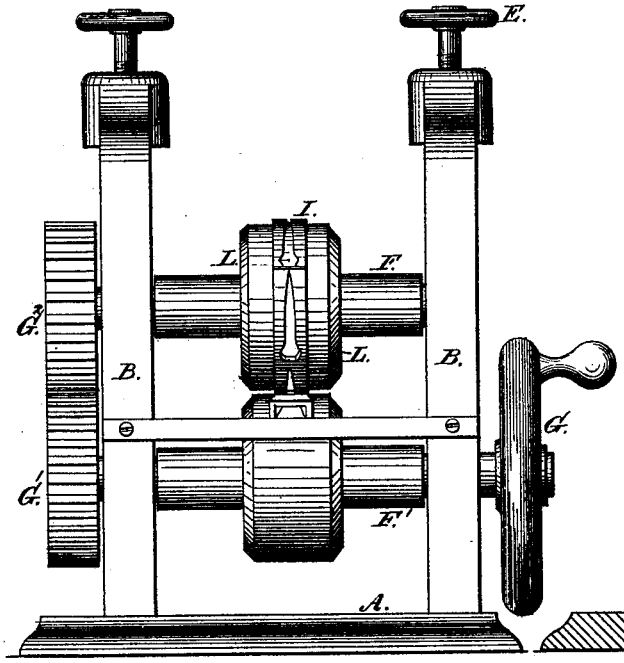

Fig. 2.

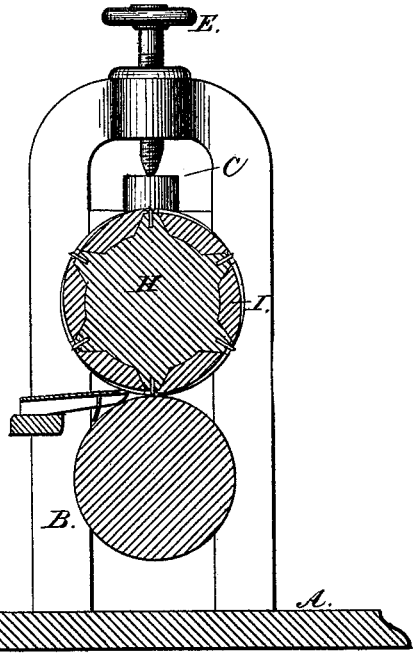

Fig. 3.

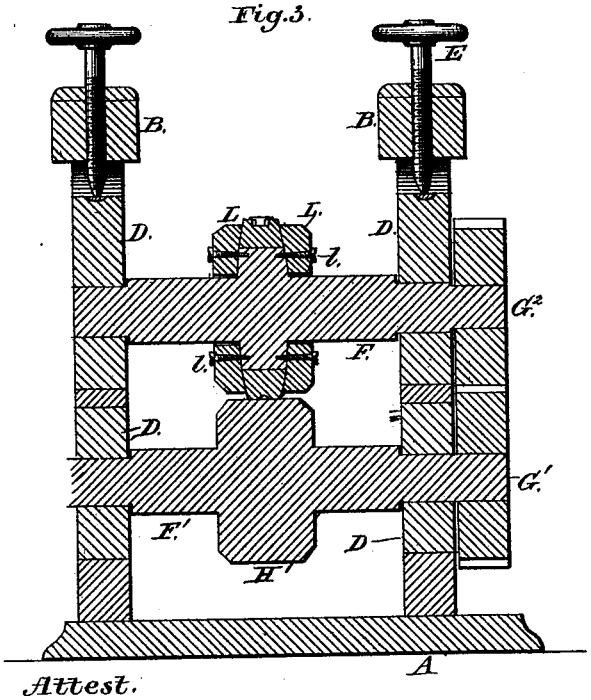

Fig. 4.

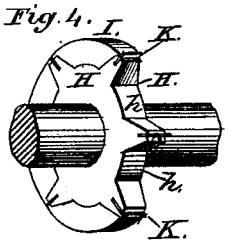

Fig. 5.

Attest.

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UNITED STATES PATENT OFFICE.

JOHN T. HOUGH, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN HORSESHOE-NAIL MACHINES.

Specification forming part of Letters Patent No. **202,824**, dated April 23, 1878; application filed April 3, 1878.

To all whom it may concern:

Be it known that I, JOHN THOMPSON HOUGH, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Horseshoe-Nail Machines, of which the following is a specification:

This invention relates to certain improvements in that class of machines for swaging articles of wrought-iron in which two rotating rolls are employed, in conjunction with properly-shaped dies on the periphery of one or both, to form the article, and it is especially designed for swaging or making horseshoe-nails, plumbers' hooks, pipe-hooks, and other similar articles.

The invention has for its object to provide the said machine with a series of detachable and interchangeable dies, which may be readily fitted to said rolls or removed from the same and replaced, whereby the expense in the first construction of the same is materially lessened.

To this end my invention consists in constructing the roll with a series of segmental seats, and providing the same with a series of segmental, detachable, and interchangeable blocks or dies, which are secured within said segmental seats by means of annular collars secured to the journal of the roll, and adapted to be clamped or otherwise secured in any convenient manner to the roll, as more fully hereinafter specified.

In the drawing, Figure 1 represents a front elevation of my improved machine. Fig. 2 represents a transverse vertical section of the same; Fig. 3, a detached perspective view of the roll, showing the segmental seats; and Fig. 5, a detached perspective view of one of the segmental blocks or dies.

The letter A represents the base of the apparatus, and B the upright standards, in which are formed the ways C for the reception of the journal-boxes D, against the upper ones of which the binding-screws E E may be brought to bear to take up wear in said boxes or the journals. The letters F F′ represent the roll-journals, one of which has mounted on it a driving-wheel, G, at one end, the other end having mounted thereon a gear-wheel, G^1, intermeshing with a gear-wheel, G^2, on the opposite journal, by means of which the two may be rotated simultaneously.

The above-mentioned parts are constructed in the ordinary manner, and form no essential feature of the present invention.

The letter H represents my improved roll, which, in the present instance, is employed only upon the upper journal, the lower one being provided with a plain roll, H′, of the ordinary construction. The said upper roll is constructed with a series of segmental spaces or seats, *h*, on its periphery, for the reception of the detachable and interchangeable segmental blocks I, which are constructed as of hardened steel. The intervening parts of the roll between the segmental spaces have sunk in their peripheries a series of cutting-dies K, which act in conjunction with the lower pressure-roll, to sever the nails as they are formed in the dies I from the blank. These cutters are made detachable and interchangeable, like the dies I. The side faces of the roll H, as well as the side faces of the dies I and cutters K K, are beveled on a curved line from the center to the periphery of the roll, as shown in Fig. 3, forming convex faces to said roll and its dies when the latter are in place. The letter L represents two annular collars, which are mounted upon the journal of the roll H, the faces of said collars which adjoin the side faces of said roll being made concave to correspond with the convex faces of the roll and its dies, and are provided with screws *l* or other devices, by means of which they can be clamped to the roll, so as to secure the dies and cutters firmly thereto.

The advantages of my improvement will be apparent from the above description. The dies and cutters, being removable and interchangeable, effect a considerable saving in the first cost of the machine, as the dies and cutters only have to be constructed of the more expensive hardened steel, whereas, as previously made, the whole roll had to be constructed of such metal; and it is evident that repairs can be made at much less expense, as when one die or cutter is injured it may be easily replaced by a new one without constructing an entirely new roll, as heretofore.

My invention operates similarly to others of this class as usually constructed, the blank

being fed through the funnel G at the front of the machine and the nails delivered at the rear of the rolls.

What I claim is—

In a machine for swaging metal, the combination of the roll and its segmental seats, the detachable dies and cutters, and the annular collars for securing said dies and cutters to the roll, substantially as specified.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

JOHN THOMPSON HOUGH.

Witnesses:
GEO. F. FEEKE,
J. B. RICHARDS.