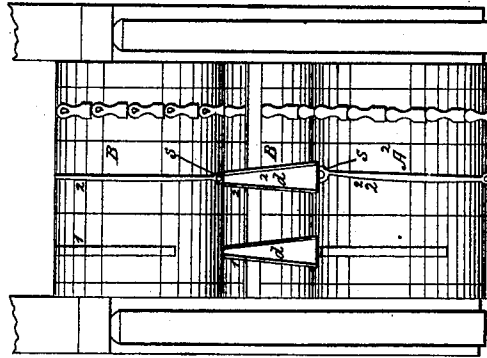
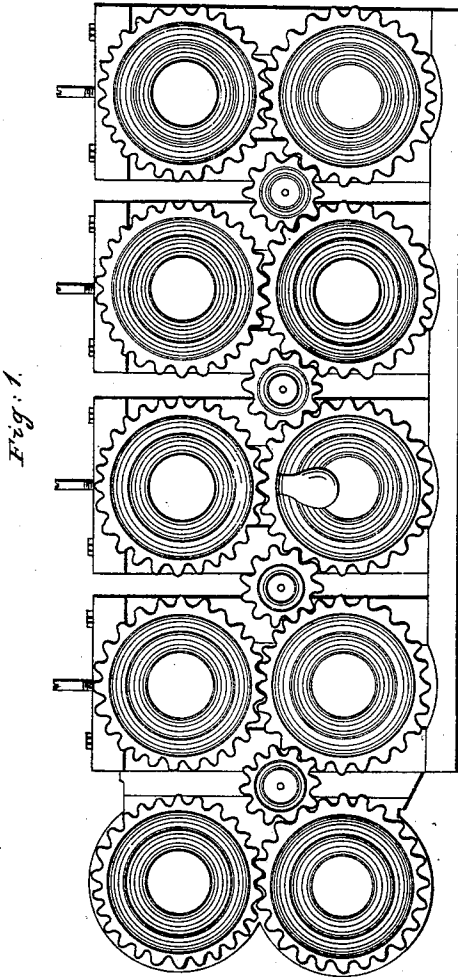


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No. 16,638.

Patented Feb. 17, 1857.



*Witnesses:*

*James P. McLean.*  
*Judson Knight.*

*Inventors:*

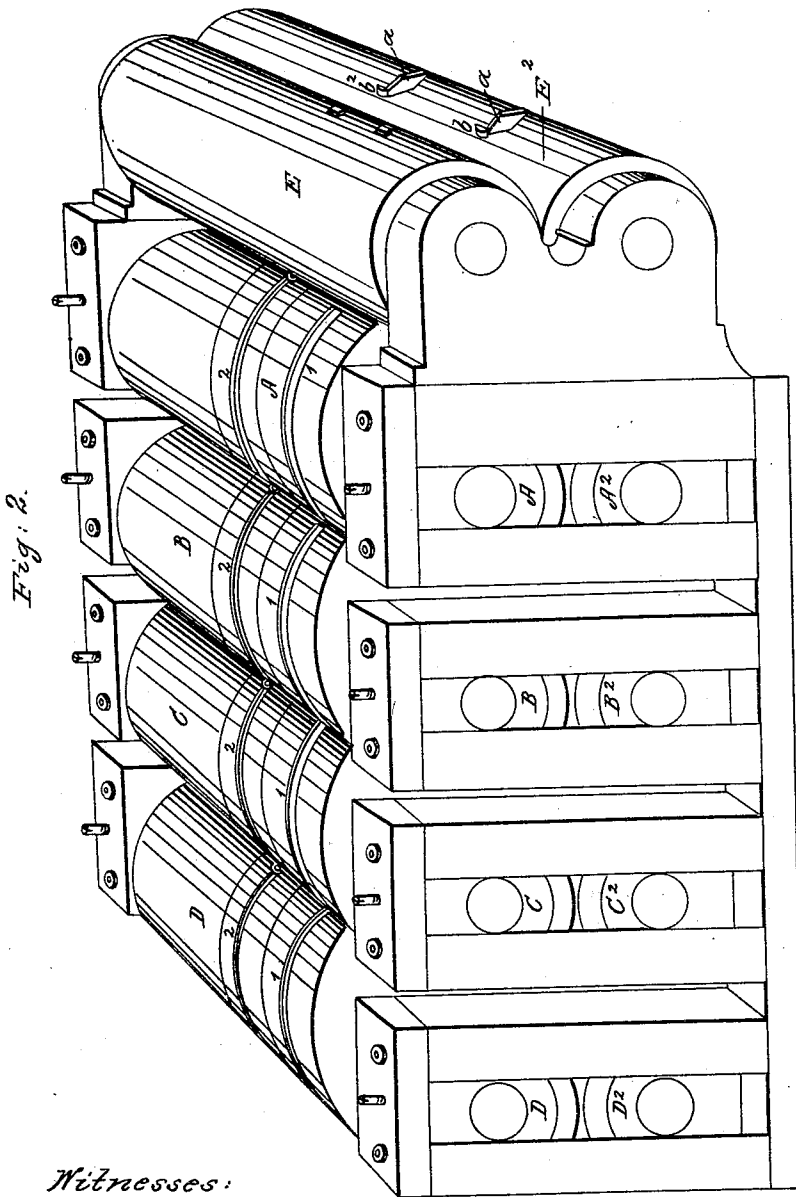
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# UNITED STATES PATENT OFFICE.

HENRY BURT AND JAMES T. HEDDEN, OF NEWARK, NEW JERSEY.

## MACHINE FOR MAKING HAMES.

Specification forming part of Letters Patent No. 16,638, dated February 17, 1857; Reissued January 4, 1859, No. 644.

*To all whom it may concern:*

Be it known that we, HENRY BURT and JAMES T. HEDDEN, of Newark city, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in the Mode of Making Metallic Hames for Horses; and we hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which are lettered to correspond with the specification and form a part of the same.

*Description.*—Our invention consists in the construction of metallic rollers arranged in pairs one above the other, Figures 1, 2, and 3, and operated by means of cogged gearing as shown at Fig. 1. These rollers are circumscribed by a series of steel or other hard metallic rings in which the dies are cut before they are placed upon the cast iron rollers by means of screws or other suitable fastenings. This method of forming dies is far more expeditious and perfect in form than any of the old processes such as cutting the dies in chilled rolls or setting steel dies into slots or dovetails made in the roller either of which takes much time and labor; and another great advantage is derived from our method of forming dies viz. In case any one of the dies should be broken or injured in any way it may readily be replaced by another ring die at a trifling expense compared to those in common use.

We have next constructed two feed rollers (E, E<sup>2</sup>) one above the other (and immediately in front of the dies rollers) having an angular groove (a) and stop (b) at one end thereof for the purpose of guiding the iron bar into the forming dies or roller (1, on A, A<sup>2</sup>). We have a track or guide (d, d<sup>2</sup>) placed between the dies—rollers for the purpose of conducting the iron bar or hame into the second set of dies as shown at Fig. 3, (B, B<sup>2</sup>).

We will next describe the operation of making a hame. In the first place take a small bar of iron as near the size as possible, cut it off the desired length, set the machine in motion then place one end of the bar in the angular groove at (a) against

the stop (b) that delivers it into the forming dies (1,) or rollers (A, A<sup>2</sup>) at the proper point; the bar is conveyed by the rollers (A, A<sup>2</sup>) into the next set of rollers (by means of the guides) (d, d<sup>2</sup>) Fig. 3, and so on until it passes through any desired number of sets of dies (we prefer four). The bar is then placed upon its edge into the feed rollers opposite the hame dies, and passed through the combination of dized rollers similar to the process of sizing the bar. After the bar has passed through the consecutive rollers the second time it becomes transformed into a well proportioned hame with the end loops complete there being a D, countersink or punch, at the ends of each set of dies as shown at Fig. 3 letter, s.

The draft eyes are formed upon the same rollers similar to the hame and are attached to it by a single blow from a vertical or drop hammer. The terrets for the reins to pass through are also attached to the hames in a similar manner.

The superiority of our invention consists in the production of a metallic hame perfectly smooth and of uniform proportion and ready for plating direct from the machine thus doing away with the laborious task of filing which is always necessary when hames are wrought by hand.

What we claim as our invention and desire to secure by Letters Patent of the United States is—

The use of the consecutive ring dies 1, 1, 1, 1, 2, 2, 2, 2, 1<sup>2</sup>, 1<sup>2</sup>, 1<sup>2</sup>, 1<sup>2</sup>, 2<sup>2</sup>, 2<sup>2</sup>, 2<sup>2</sup>, 2<sup>2</sup> in connection with the angular grooves (a and a<sup>2</sup>) stops (b, and b<sup>2</sup>) on the feed rollers (E and E<sup>2</sup>) substantially as described, constructed, and operating in the manner specified, and shown in the accompanying drawings.

In testimony whereof we hereunto subscribe our names in the presence of two witnesses.

HENRY BURT.  
JAMES T. HEDDEN.

Witnesses:

JAMES P. McLEAN,  
ANNE S. McLEAN.