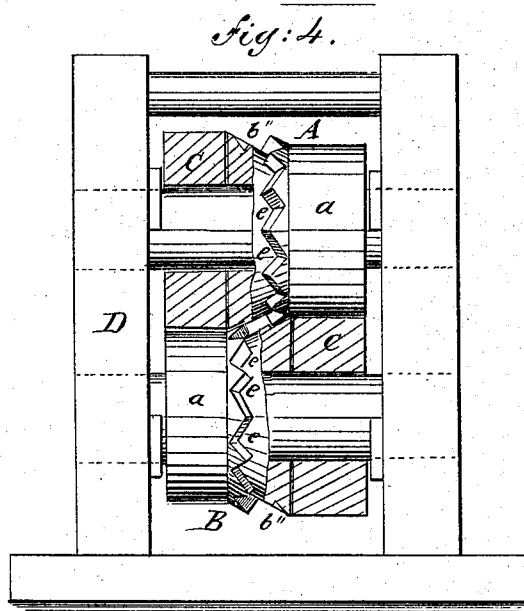
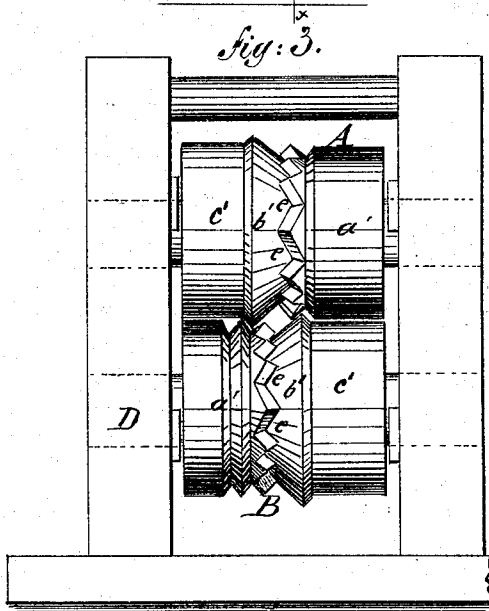
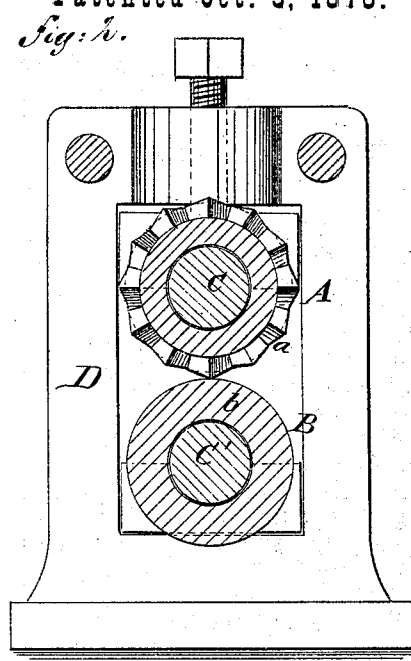
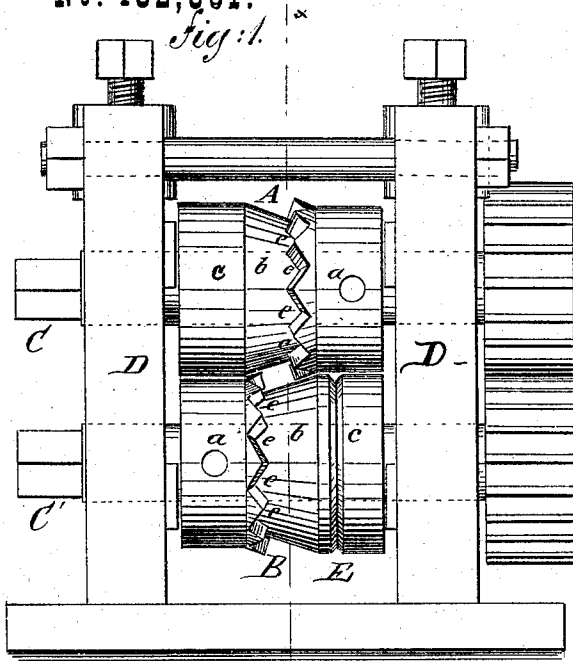


H. JOHNSON.

MACHINES FOR ROLLING NUT BLANK BARS.

No. 182,831.

Patented Oct. 3, 1876.



WITNESSES:

Chas. Nideg.
Jhu. Wetlands

Fig: 5.

INVENTOR:

H. Johnson
BY *Mumford*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY JOHNSON, OF HAVERSTRAW, NEW YORK.

IMPROVEMENT IN MACHINES FOR ROLLING NUT-BLANK BARS.

Specification forming part of Letters Patent No. **182,831**, dated October 3, 1876; application filed August 21, 1876.

To all whom it may concern:

Be it known that I, HENRY JOHNSON, of Haverstraw, in the county of Rockland, and State of New York, have invented a new and Improved Machine for Rolling Nut-Blanks and other articles, of which the following is a specification:

Figure 1 is a side elevation. Fig. 2 is an end elevation on line *xx* in Fig. 1. Fig. 3 is a side elevation of a modified form of rolls. Fig. 4 is a side elevation, with part broken away, representing another form of rolls. Fig. 5 is a detail view, showing the manner of holding the guide.

My invention relates to a pair of rolls, each one of which is made up of sections that are detachably fixed to the shaft. One section of each roll is conical, and forms the flat of the bar, and another section is chambered out to receive the smaller end of the conical section, and has formed on its side the reverse of the form required in the edge of the rolled bar. By this arrangement the flat of the bar passes through the rolls at an angle with the axes of the rolls between a line parallel with the axes and a line running at right angles to the axes of the rolls.

A and B are rolls consisting of the sections *a b c* detachably fixed to the shafts *CC'*, which are supported in journal-boxes in the frame D, in the usual manner. The sections *a b c* are arranged oppositely in the upper and lower rolls, so that the sections *b*, which are conical, present parallel surfaces. The parts *a* are chambered out to receive the smaller end of the conical parts *b*, and that portion of the part *a* that embraces the end of the part *b* is notched at *e*. The apex of the angle of the notches represent opposite corners of a hexagon nut. The conical parts *b* form the flat of the nut-bar, and the space between the ends of the teeth formed on opposite sections. *a* represents the side of the nut, which is formed by cutting the nut from the bar. The thickness of that portion of the part *a* that surrounds the part *b* determines the thickness of the rolled blank. The part *c* is fixed on the shaft and the part *b* abuts against it. E is a groove of any suitable form cut in the part *c* in the lower roll for the purpose of retaining a guide, *f*.

It will be seen that iron passing through

these rolls will be compressed flatwise more than sidewise, thus filling the notches *e*, and will be delivered to the guide *f*. A bar of iron rolled in this way and cut up at the narrowest part forms hexagon nut-blanks, having the fibers of the iron arranged in the most advantageous manner, as they are compressed flatwise or in the same direction in which they were formed from the pile. Whereas, if the blanks were formed by pressure at the edges of the bar the laminae formed by reducing the bar from the pile would be more or less buckled and separated, and the strength of the blanks would be impaired. In Fig. 3 the rolls are composed of the parts *a' b' c'*, which are, in all respects, similar to the ones previously described, except that the sides of the conical part form a less acute angle with the axes of the rolls. This throws the base of the cone out beyond the part *c'*, forming a support for the guide *f* and dispensing with the groove E. In Fig. 4 the parts forming the rolls differ from those of Fig. 1 in having depressions in the base of the conical part *b''*, which correspond in form to the part *a*, but are made deeper than would be required for simply receiving the part *a* for the purpose of making room for cinder and scale. In Fig. 5 the manner of retaining the guide *f* by means of the groove E is shown. The guide is provided with a lip that engages with the groove and prevents it from moving laterally.

I do not confine my invention to the manufacture of nuts alone, as rolls of this description are applicable to the manufacture of bars of iron having either straight or irregularly-formed edges and sides; neither do I confine myself to the precise arrangement or form of the parts herein described, as they may be varied without departing from my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, in a rolling-mill with one or more rolls or other devices, of a roll formed of sections *a b c*, the first having an irregularly-formed side and the second a conical shape, as and for the purpose specified.

HENRY JOHNSON.

Witnesses:

C. SEDGWICK,
GEO. M. HOPKINS.