

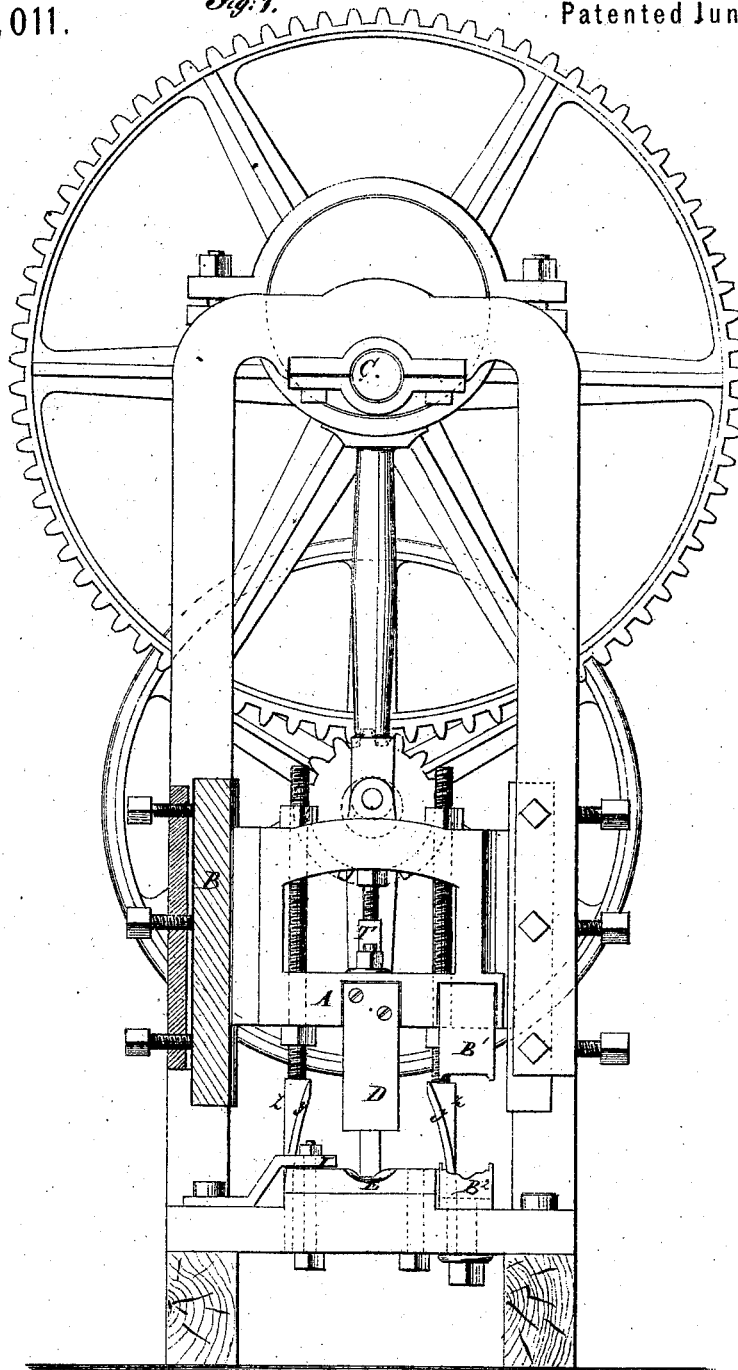
E. BARTHOLOMEW.

Ax Bit Blank Machines.

No. 116,011.

Fig. 1.

Patented June 20, 1871.



Witnesses:

*Chas. A. Nida.*  
*Wm G. C. Smith.*

Inventor:

*E. Bartholomew.*

PER

*Wm. C. Smith.*

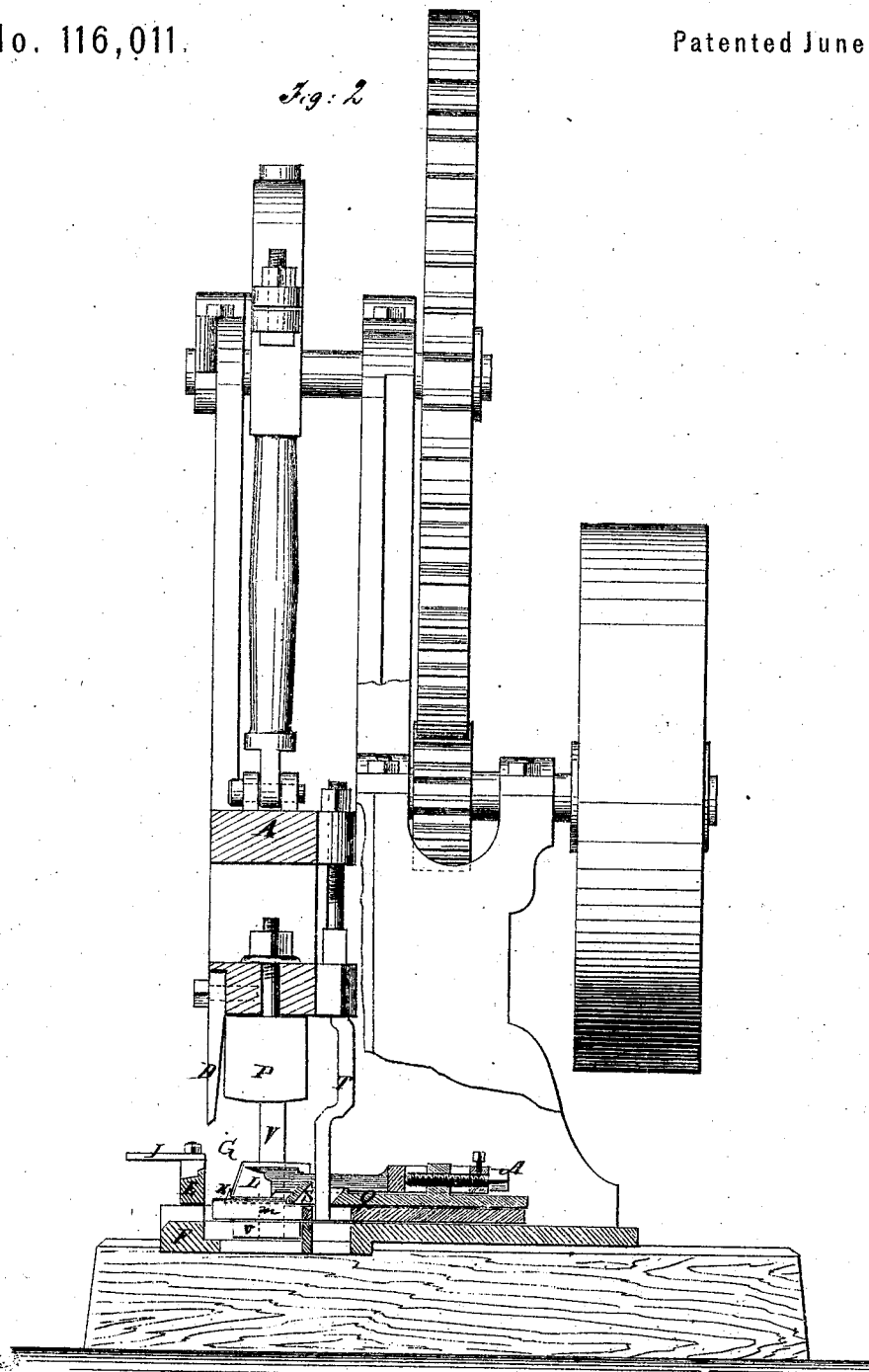
Attorneys

E. BARTHOLOMEW.

Ax Bit Blank Machines.

No. 116,011.

Patented June 20, 1871.



Witnesses:

*Chas. Nida.*  
*Wm. H. C. Smith.*

Inventor:

*E. Bartholomew*

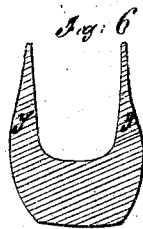
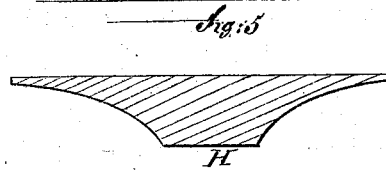
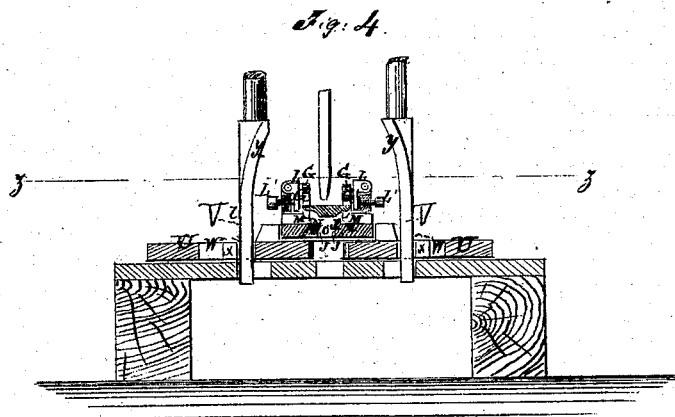
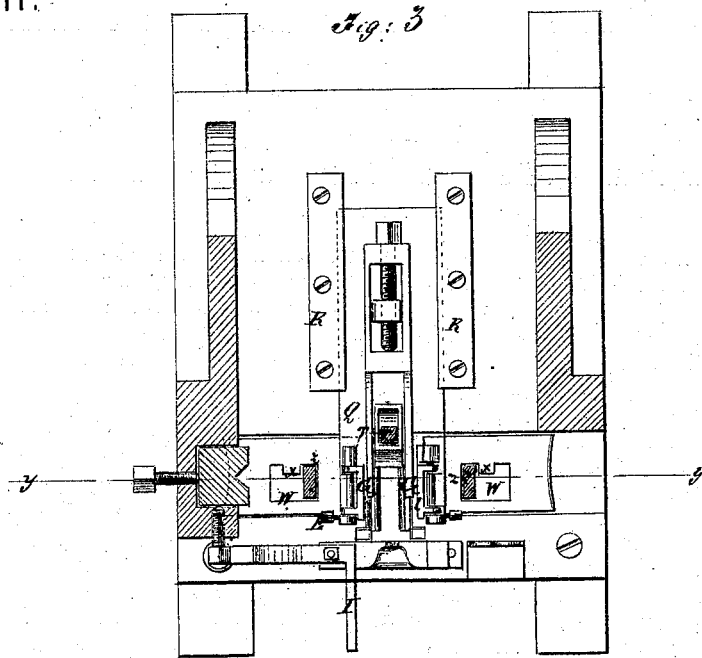
PER *Wm. H. C. Smith*  
Attorneys.

E. BARTHOLOMEW.

Ax Bit Blank Machines.

No. 116,011.

Patented June 20, 1871.



Witnesses:

*Chas. Nida*  
*Wm. H. C. Smith*

Inventor:

*E. Bartholomew*

PER

*Wm. Co*  
 Attorneys.

# UNITED STATES PATENT OFFICE.

ENOS BARTHOLOMEW, OF MILL HALL, PENNSYLVANIA.

## IMPROVEMENT IN AX-BIT-BLANK MACHINES.

Specification forming part of Letters Patent No. 116,011, dated June 20, 1871.

*To all whom it may concern:*

Be it known that I, ENOS BARTHOLOMEW, of Mill Hall, in the county of Clinton and State of Pennsylvania, have invented a new and Improved Ax-Bit-Blank Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to a new and improved machine for cutting and shaping the ax-bit blanks known as "Mann's improved ax-bit blanks;" and it consists in a cutting, punching, and compressing-machine in which the several parts are combined and arranged as hereinafter particularly described.

Figure 1 is a front elevation of the said machine with a part sectioned. Fig. 2 is a section on the line *xx* of Fig. 1. Fig. 3 is a horizontal section taken on the line *zz* of Fig. 4. Fig. 4 is a section on the line *yy* of Fig. 3. Fig. 5 is a cross-section of the bar from which the blanks are to be cut, and Fig. 6 is an end view of one of the blanks after being cut and shaped.

Similar letters of reference indicate corresponding parts.

A is a vertically-reciprocating cross-head, working between guides B by a driving-shaft, C, in any suitable or approved way. This cross-head carries a cutter, D, which works in connection with the fixed cutter E on the bed F of the machine, to cut the blanks from the bar fed along over the said fixed cutter against gauges G, which stop it when fed in beyond the cutters E the length required for the blank. This fixed cutter is shaped in its upper edge to correspond with the irregular side H of the bar to be cut, so that the latter will bear on it alike across the said side. I is a gauge or stop applied to the cutter E to assist the attendant in placing the bar on the latter properly. The cut blank falls upon the carriers K between the vertical hinged plates L, and is carried back a short distance over the sides M of a female die, O, and under a broad punch, P, for forcing it through the die for turning the edges up, as indicated in Fig. 6, the said punch having the same shape as the ax-pole, to which the bit is to be fitted. The said carriers K consist of two prongs projecting from plate Q, one on each

side of the female die. The blank falls on them so as to rest by each edge on them. They lie under the blank when the punching begins, but the bending of the blank over the raised ribs J of the parts M of the die draws the blank from them to the die. I intend to make these ribs J detachable for removing them readily for repairs. The plate Q, to which the carriers are attached, works toward and from the fixed cutter in guides R on the bed of the machine. It has a hole, S, with walls oblique to the top, through which a bent bar, T, attached to the cross-head, works for moving it. The bar is so arranged as to act on the plate and draw it back just before the punch comes down upon the blank, and as soon as the punch rises again it throws the plate forward for the carriers to be in position behind the cutter E for receiving another blank. U represents a pair of compressors arranged under the female die O, to work toward and from the vertical plane of the longitudinal axis thereof, being moved by the bars V attached to the cross-head, and working in the holes W, having the projections X, between which and one end wall the curved ribs Y of said bars work to move the said compressors. These parts are so arranged that as soon as the blank has been forced down through the female die, and before it is discharged from the punch, also before the latter arrives at the end of its downward movement, they are brought against the sides of the turned-up parts Y and compress them hard against the punch to give them the same bevel on the outside they have on the inside, and reduce the upper edges down thin, and cause them to fit snugly and with exactness against the punch, so that when placed on the ax-pole they will fit in like manner and exclude the cinder and other foreign matter while in the fire, thereby insuring a more perfect weld than when they fit the pole loosely. The hinged plates L are mounted in supports on plate Q, and provided with set-screws L' for setting them inward more or less, and are for causing the blank to be properly centered with the die O, and to be adjusted for wide or narrow blanks. The gauges are made adjustable on the movable plate Q by a set-screw, A', as shown, for varying them for longer or shorter blanks, as required, and are moved back and forth by the said plate. B<sup>1</sup> and B<sup>2</sup> represent

a movable and fixed cutter, employed in connection with the cross-head and bed for trimming the ends of the bars, or for other purposes.

The sliding plate Q and the compressors may be operated by any other suitable means; but I prefer the means here shown, as the construction is simple and cheap. The hole S in the plate Q may have friction-rollers arranged in it to take the wear out of the bent rod T, and the said rollers may be adjustable and removable.

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

1. The combination of the cutters D E, carriers K, punch P, and die O, substantially as specified.

2. The compressors, arranged and operated in connection with the broad punch and female die, for the purpose of beveling the steel ends

of the blank and swiveling the sides in the center thereof, as specified.

3. The combination, with the die O and punch P, of the hinged plates L and adjusting-screws L', substantially as specified.

4. The cutters D E and carriers K, combined with female die, broad punch, and compressors, as and for the purpose specified.

5. The combination, with the cross-head and the movable plate, of the bent bar T, said bar working in the oblique hole S in said plate, substantially as specified.

6. The combination, with the compressors having the holes W and projections X, of the bars Z attached to the cross-head, and having the curved ribs Y, substantially as specified.

ENOS BARTHOLOMEW.

Witnesses:

S. B. DARRAH,

H. BARTHOLOMEW.