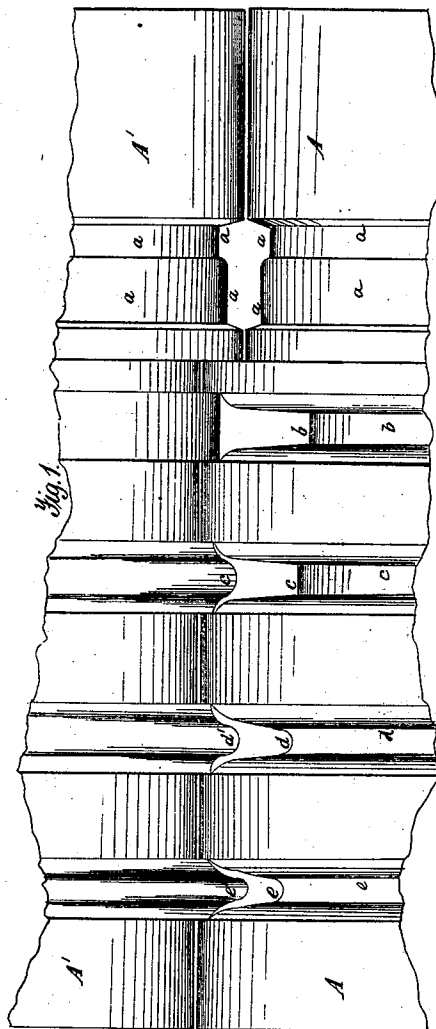
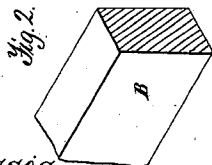
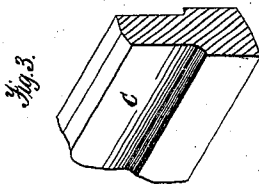
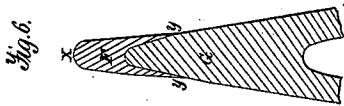
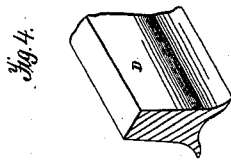
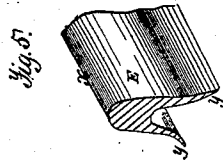


*J. Lippincott,
Making Axes,*

Nº 85,110,

Patented Dec. 22, 1868.



Witnesses:

*Allan C. Bakewell,
George B. Rushing*

Inventor:

*John Lippincott
by Bakewell & Christy
his attys.*

United States Patent Office.

JOHN LIPPINCOTT, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 85,110, dated December 22, 1868.

IMPROVED BAR FOR AXE-BIT BLANKS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, JOHN LIPPINCOTT, of the city of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in Making Bit-Blanks or Steels for Edged Tools ; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 shows in side elevation such portions of a pair of cylindrical metallic rolls, having grooves, collars, and tongues, as are necessary to illustrate my mode of rolling grooved bars from which to make bit-blanks for axes ;

Figure 2 shows, in cross-section and perspective, a steel billet or bar, of proper shape, to be fed into the rolls shown in fig. 1 ;

Figures 3 and 4 are similar views of the bar as it appears at different stages of the rolling-process ;

Figure 5 is a similar view of the grooved bar, complete, and ready to be cut up into axe-bit blanks ; and

Figure 6 is a section, formed by a plane passing through the blade-part of an axe-poll and bit-blank, at right angles to its edge, and illustrates the relative position of the two when ready for welding.

Like letters of reference indicate like parts.

My invention relates to the making of steels for the blades or bits for that class of edged tools in which it is desirable or advantageous that the steel should, along the line or plane of weld, overlap or enclose the iron on both sides ; and

The nature of it consists in making grooved steel bars, by the process of rolling, of the shape in cross-section which is required in the bit-blank, so that nothing further is required to the completion of the bit-blank, except cutting into blanks of the proper lengths.

To enable others skilled in the art to make and use my invention, I will proceed to explain my mode of construction and manner of use.

A A' are parts of a pair of cylindrical metal rolls, the peripheries of the two being so shaped, with reference to each other, as to present a succession of rolling faces, substantially as hereinafter to be described.

A steel billet or bar, B, fig. 2, of square, rectangular, or other desirable shape, in cross-section, being first heated, is introduced into the grooves *a* in the rolls A A', and made thinner along one edge, as shown at C, fig. 3. It is then passed on its edge between the rolls A A', through one or more grooves, *b*, by which it gradually receives the shape required, and then between a groove, *c*, in one roll, A, and a tongue, *c'*, in the other roll, A', when it receives the shape shown at D, fig. 4.

The process of rolling is continued, by passing the

bar D through between other grooves, *d e*, and tongues, *d' e'*, the aperture between each successive groove and tongue approaching more nearly to the shape of a bit-blank in cross-section, such as is shown at E, fig. 5. By such grooves and tongues, the part *x*, which is to form the edge of the axe, is reduced in thickness in the process of rolling, and the projecting sides of the groove *y y* on the opposite edge are drawn out thin and wide, so that, when the blank F is placed for welding on to the poll G, as in fig. 6, the projecting sides *y y* will lap well over the sides of the poll G, and give a large welding-surface, and, at the same time, furnish what is deemed exceedingly desirable, a steel face to the cutting-part or blade of the axe. If necessary, the sides *y y* may be further drawn in the usual way. The grooved bar E, thus formed, is cut or sawed into bit-blanks F of any desirable length, which are then welded to axe-poll G, in the usual manner.

By this mode of manufacture, I roll out grooved bars for bit-blanks, of any desirable length, usually from ten to twenty feet. I save nearly all the labor and time necessarily expended in forming the bit-blank in the way heretofore practised, which was to cut or force from a steel bar so much steel as was required for each single blank, split it with a chisel to any required depth, and, by forging or swaging, draw out the split edges to the shape shown at *y y*, fig. 5.

This mode of manufacture was both expensive and tedious, as each bit-blank was made separately, and a large amount of skilled labor was, necessarily, employed.

I also apply my invention to rolling each separate blank from a separate piece of steel, of the proper length, the mode of operation being the same.

I do not limit myself in my invention to the use of any particular number or arrangement of grooves and tongues in the rolls, nor to any particular shape for each groove and tongue, as these may be varied at pleasure, and the object being merely to produce bars having continuous grooves of the shape, substantially, as described, which grooved bars, when cut into proper lengths, will give properly-shaped bit-blanks.

What I claim as my invention, and desire to secure by Letters Patent, is—

Grooved steel bars, made by rolling, substantially as described, as a step in the manufacture of bit-blanks for axes.

In testimony whereof, I, the said JOHN LIPPINCOTT, have hereunto set my hand.

JOHN LIPPINCOTT.

Witnesses:

ELL TORRANCE,
G. H. CHRISTY.