

(No Model.)

C. T. EVANS.
BLANK FOR SAWS.

No. 450,836.

Patented Apr. 21, 1891.

FIG. 1.

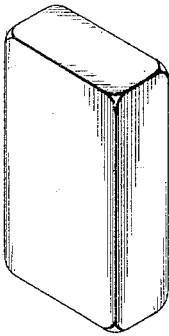


FIG. 2.

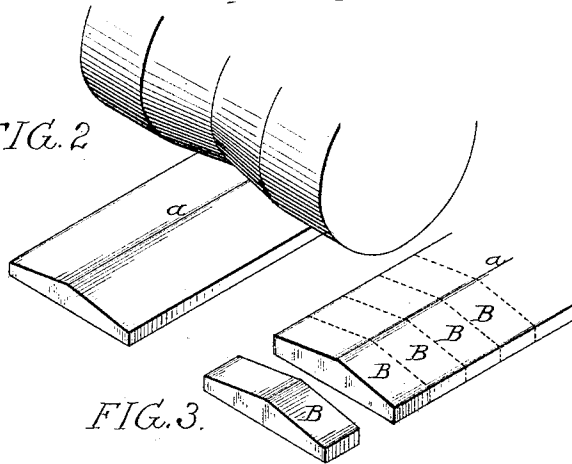


FIG. 4.

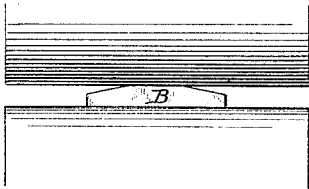


FIG. 5.

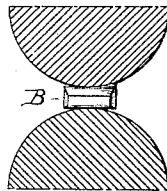


FIG. 6.

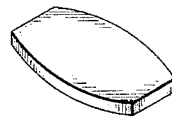


FIG. 7.

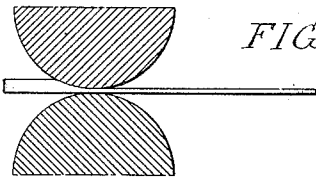


FIG. 8.

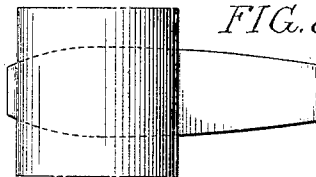


FIG. 9.

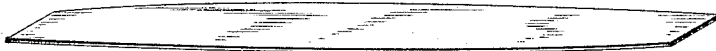


FIG. 12.

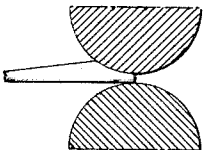


FIG. 10.

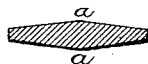


FIG. 11.



FIG. 13.

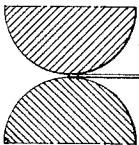


FIG. 14.



Witnesses:
H. D. Turner
Alex. Barkoff

Inventor:
Charles T. Evans
by his Attorneys

Howson & Hornum

UNITED STATES PATENT OFFICE.

CHARLES T. EVANS, OF PHILADELPHIA, PENNSYLVANIA.

BLANK FOR SAWS.

SPECIFICATION forming part of Letters Patent No. 450,836, dated April 21, 1891.

Application filed May 23, 1889. Serial No. 311,830. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. EVANS, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented an Improved Process of Forming Blanks for Saws and Like Articles, of which the following is a specification.

One object of my invention is to economize metal in the manufacture of irregular-shaped blanks, such as crosscut-saw blanks; and a further object of my invention is to avoid as much as possible the effect of piping of the ingots used in the manufacture of steel blanks for saws and similar articles. This latter object I attain by casting a large ingot, and rolling said ingot into proper shape and cutting it into the required sections, which are counterparts, as nearly as possible, of the smaller ingots commonly used in the manufacture of crosscut-saw blanks.

I will describe my invention as applied to the manufacture of crosscut-saw blanks; but it will be evident that other blanks may be made without departing from my invention. In the accompanying drawings, Figure 1 is a perspective view of an ingot. Fig. 2 is a view of a bloom or molder being rolled from the ingot. Fig. 3 is a view of the molder or bloom divided into quadrangular sections, each section containing sufficient material for the saw-blank. Figs. 4 and 5 are views showing one of the pieces being rolled to reduce the bloom to the shape shown in Fig. 6. Fig. 6 is a view showing one of the pieces after being passed through the rolls, Figs. 4 and 5. Figs. 7 and 8 are views showing a piece being rolled to reduce it to the shape shown in Fig. 9. Fig. 9 is a view of the finished blank for a crosscut-saw. Figs. 10 and 11 are sectional views of modifications of the bloom or molder shown in Fig. 3, and Figs. 12, 13, and 14 are views illustrating a modification of my invention.

In carrying out my invention I cast a large ingot, as shown in Fig. 1, and pass this ingot through a series of rolls until the bloom assumes the shape shown in Fig. 2, being high in the middle and tapering to both sides. In Fig. 2 the under side of the bloom is perfectly level and the top is tapering to the ridge or elevation *a*, although it will be evident that the bloom may be tapered on both

sides, as shown in Fig. 10, or may be rounded on both sides, as shown in Fig. 11, or the ridge *a* may be toward one side, as shown in Fig. 12. The bloom is then passed under shears and divided transversely into elongated quadrangular sections B, as shown in Fig. 3. The sections B are then passed through flat rolls in the same direction (transversely) as in the previous rolling, the thickened central portion being forced down and out, as shown in Figs. 4 and 5, thus forming a molder wider in the middle than at the ends, as shown in Fig. 6, and of sufficient thickness to be rolled out by being passed longitudinally through the finishing-rolls, as shown in Figs. 7 and 8, to form the blank illustrated in Fig. 9 wider at the middle than at the ends.

The proportion of piping in a large ingot is much less than in small ingots, and consequently the piping that would naturally show itself in saw-blanks made from small ingots would be greater than that shown by a saw-blank made from sections of a large ingot; and, furthermore, by having the bloom rolled to the shape described I am enabled to roll the saw-blank as economically as possible and avoid the waste heretofore incurred in this class of goods.

In place of passing the portion Fig. 3 through the rolls Fig. 4 to make the plate shown in Fig. 5, the bloom may be rolled and cut as shown in Fig. 12, with the thickened portion near one edge, and the bloom fed to the rolls longitudinally, as shown in said figure, which will spread the material, as shown in the diagrams Figs. 13 and 14, thus gaining a result similar to that described above.

It will be evident that in rolling other articles than crosscut-saw blanks by increasing the height of the rib *a* the piece shown in Fig. 5 will be increased in width, and, if properly manipulated, an oval plate, or a plate very nearly circular in form, will be the result.

I claim as my invention—

1. The process herein described of producing blanks for crosscut-saws and like articles, said process consisting in first forming a molder or bloom narrow at the edges and thickened from the edges inward, as described; second, cutting said molder or bloom transversely into elongated quadrangular sections, in which the thickened ridge is trans-

verse to the length of the section, and, third, passing said sections through rolls, crushing said thickened portion and forcing it out transversely, whereby a blank is produced
5 which is wider at the middle than at the ends, substantially as described.

2. The process herein described of producing blanks for crosscut-saws and like articles, said process consisting in first forming a
10 molder or bloom narrow at the edges and thickened from the edges inward, as described; second, cutting said molder or bloom transversely into elongated quadrangular sections; third, passing said sections through
15 rolls first in a direction transversely to the

length of the section, crushing said thickened portion out transversely, and, fourth, passing said shaped blank in a direction parallel with the length of the section, so as to reduce the section to the form of a saw-blank wider in
20 the middle than at the ends, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES T. EVANS.

Witnesses:

HENRY HOWSON,

HARRY SMITH.