No. 829,100. PATENTED AUG. 21, 1906.

L. D. DAVIS.

MECHANISM FOR PIERCING OR SHAPING METALLIC INGOTS.

APPLICATION FILED SEPT. 3, 1901.

Fig. 1.

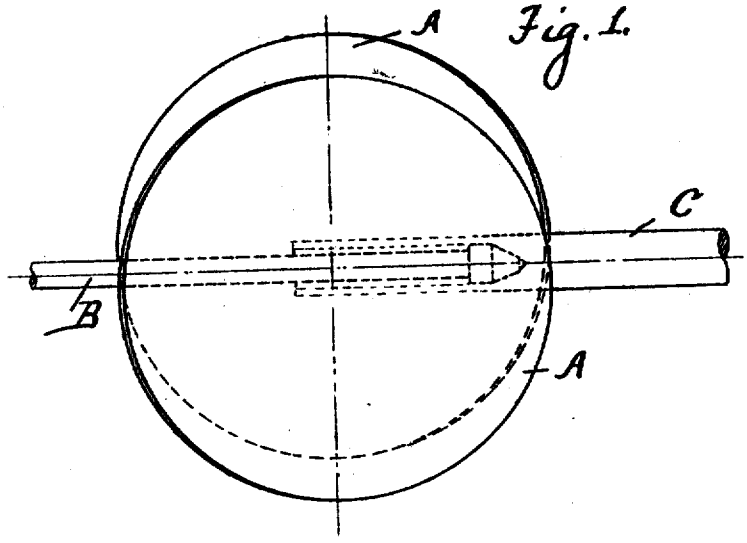
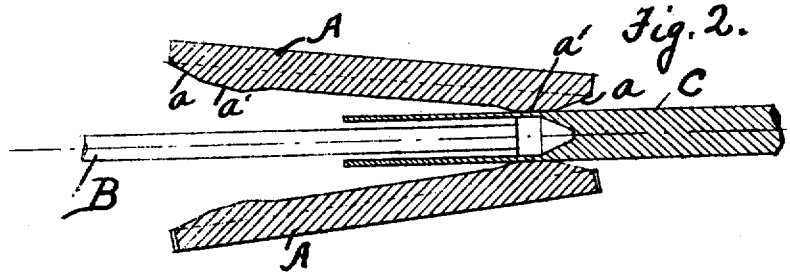


Fig. 2.



Witnesses

Clint Dawson

Willis E. Cardwell

Inventor

Leonard D. Davis

by N. C. Ford

Attorney

UNITED STATES PATENT OFFICE.

LEONARD D. DAVIS, OF ERIE, PENNSYLVANIA.

MECHANISM FOR PIERCING OR SHAPING METALLIC INGOTS.

No. 829,100. Specification of Letters Patent. Patented Aug. 21, 1906.

Application filed September 3, 1901. Serial No. 74,166.

To all whom it may concern.

Be it known that I, LEONARD D. DAVIS, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Mechanisms for Piercing or Shaping Metallic Ingots; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to mechanisms for shaping or piercing metallic ingots; and it consists in certain improvements therein which will be hereinafter fully described, and pointed out in the claim.

The object of the invention is to pierce ingots or form pierced ingots with greater smoothness and thinner walls than has been heretofore accomplished.

The invention is illustrated in the accompanying drawings as follows:

Figure 1 is a side elevation of a piercing-mill embodying my improvement. Fig. 2 is a horizontal section along the axis of the billet.

Fig. 1: A A mark the disks. These are arranged eccentrically, so as to produce rotative and longitudinal action of the billet as it passes between them. The general arrangement of the disks is that of a common piercing-mill, only the outlines of the disks being shown. A mandrel B is arranged as common in these mills, and a billet C is shown partially pierced.

My improvement particularly relates to the forming or shaping of the disks, and this consists in arranging a gripping or divergent working surface *a a*, which grips and feeds forward the billet, subjecting it to pressure rotatively. After the billet passes through this working surface it passes through a smoothing or finishing surface *a' a'*. I have found that a surface *a' a'*, arranged with the contact-line approximately parallel with the axis of the billet, produces a much smoother tube than disks of other shapes. This is of great advantage and permits of the hot rolling of the tube in a mill of this character to a point giving much thinner walls than with disks as ordinarily formed. The mandrel should extend between the smoothing portion *a'*.

What I claim as new is—

In a mill for shaping or piercing metallic ingots the combination of a pair of disks set eccentrically to each other with divergent working surfaces and smoothing-surfaces extending from the exit side of the working surfaces, said smoothing-surfaces forming contact-lines with the billet approximately parallel to the axis of the billet, and a mandrel arranged in the pass between the smoothing-surfaces.

In testimony whereof I affix my signature in presence of two witnesses.

LEONARD D. DAVIS.

Witnesses:
H. C. LORD,
GRACE E. YARD.