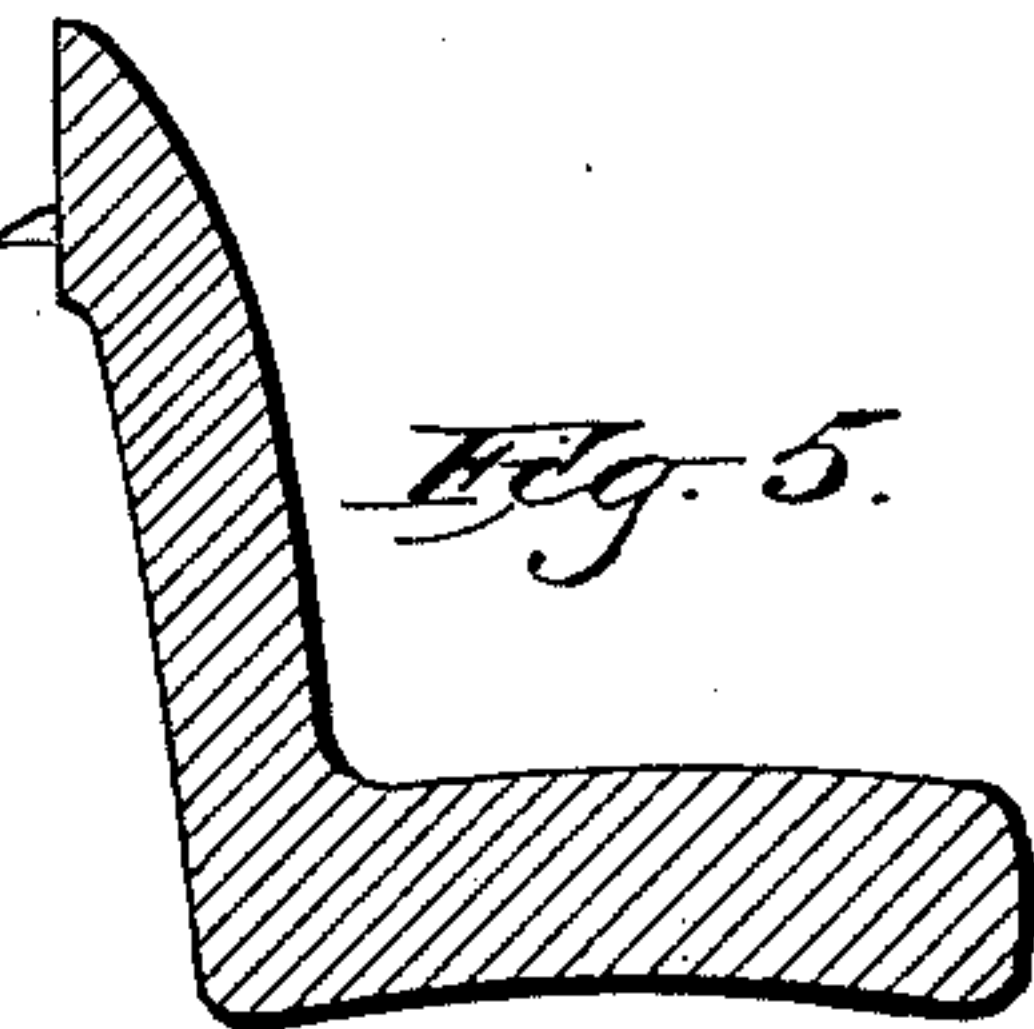
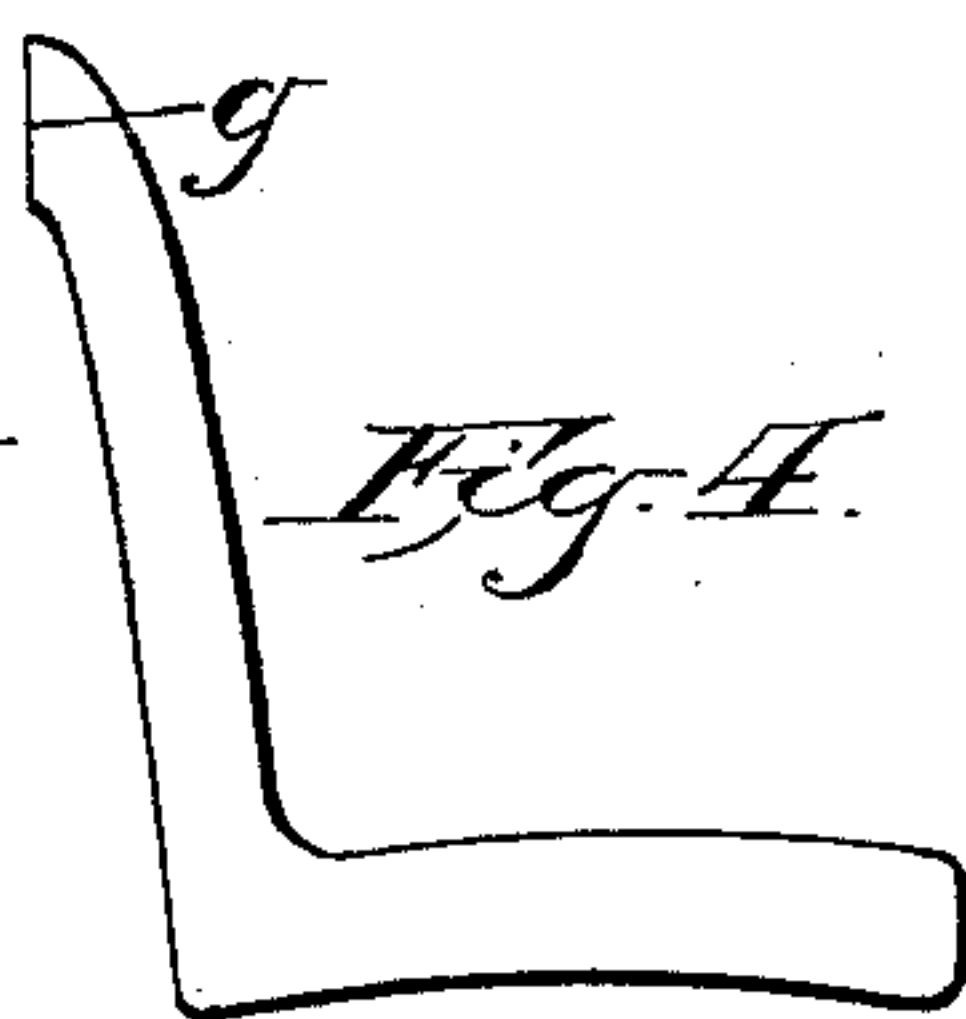
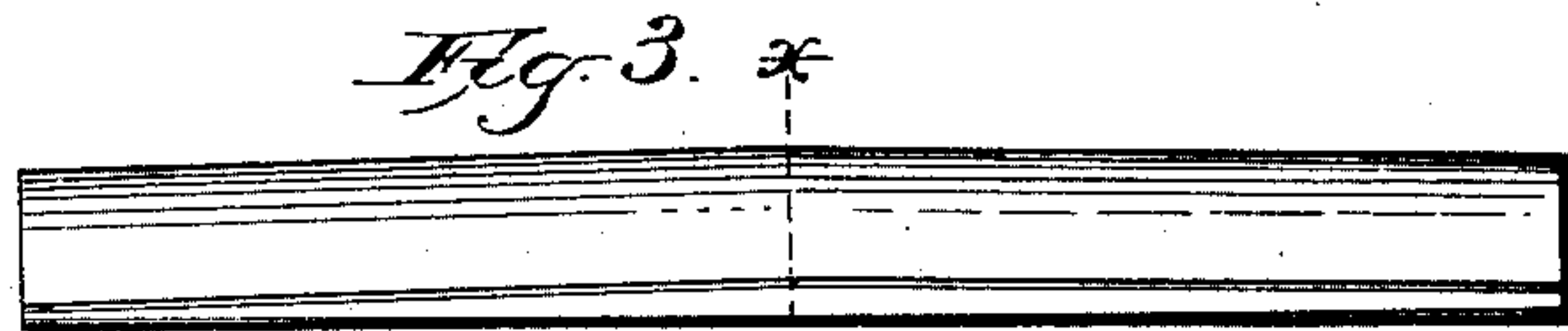
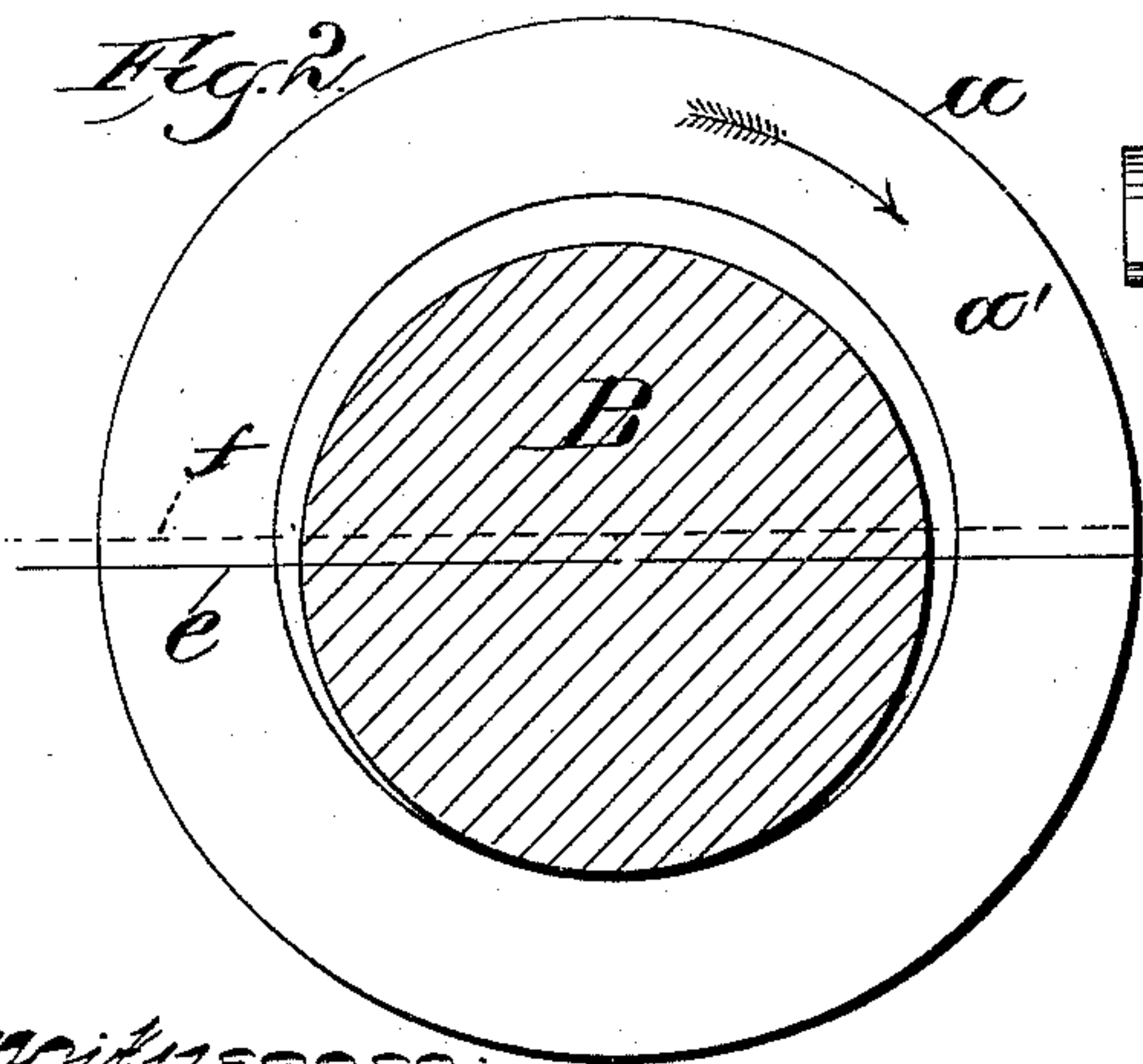
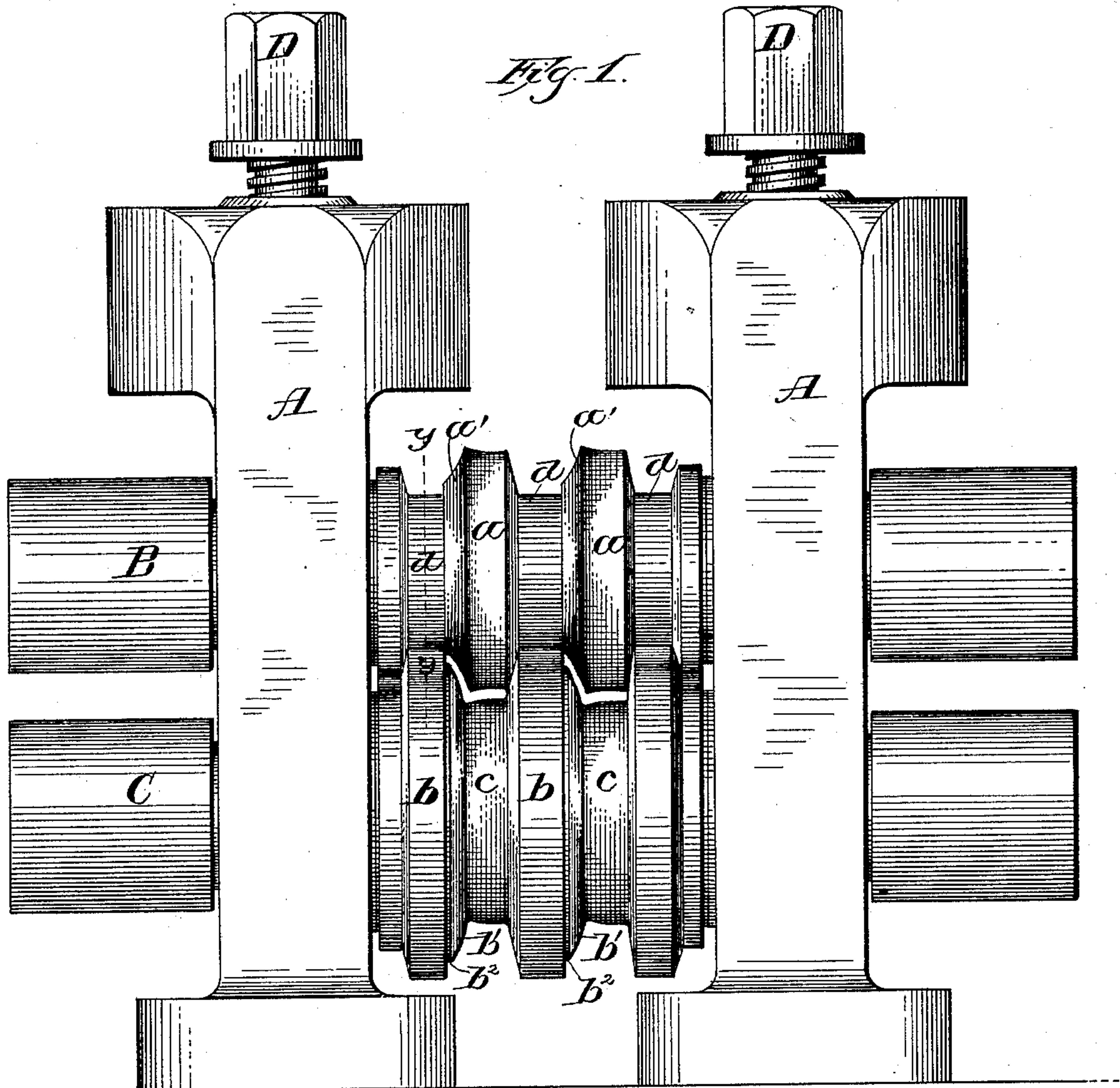


(No Model.)

W. B. PARKES.  
ROLLING MILL.

No. 353,270.

Patented Nov. 23, 1886.



Witnesses:

*E. G. Jones*  
*H. E. Oliphant*

*Inventor:*  
*William B. Parkes*  
*By* *Stout & Underwood*  
*Attorneys.*



# UNITED STATES PATENT OFFICE.

WILLIAM B. PARKES, OF BAY VIEW, ASSIGNOR OF ONE-HALF TO FRANCIS HINTON, OF MILWAUKEE, WISCONSIN.

## ROLLING-MILL.

SPECIFICATION forming part of Letters Patent No. 353,270, dated November 23, 1886.

Application filed June 14, 1886. Serial No. 205,071. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM B. PARKES, of Bay View, in the county of Milwaukee, and in the State of Wisconsin, have invented certain  
5 new and useful Improvements in Rolling-Mills; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to rolling-mills, and is preferably designed for rolling angle-irons—  
10 such, for instance, as railway fish-plates; and it consists in the peculiar construction and arrangement of a train of rolls, whereby at one revolution a reduction is had at both ends of the irons, to leave the greatest thickness at the  
15 center or that portion on which comes the most strain, as will be hereinafter described with reference to the accompanying drawings, in which—

Figure 1 represents a side elevation of a  
20 train of rolls embodying my invention; Fig. 2, a vertical transverse section on line *yy*, Fig. 1; Fig. 3, a side elevation of a fish-plate produced by my train of rolls; Fig. 4, an end view of Fig. 3; Fig. 5, a vertical transverse section  
25 on line *xx*, Fig. 3.

Referring by letter to the drawings, A A represent suitable standards having journaled therein, after the usual manner, a pair of rolls, B C, the top one, B, being held down in op-  
30 erative relation to the lower one by means of set-screws D. The top roll, B, is provided with one or a series of tongues, *a*, and the lower one, C, with collars *b*. The tongues *a* of the top roll are in line vertically with the  
35 grooves *c*, between the collars *b* of the lower roll, and these collars are likewise arranged with relation to recesses *d*, between said parts *a* of the top roll.

The irons are rolled between the tongues *a*  
40 of the top roll and the grooves *c* of the lower one, the faces of these opposing parts being of such contour as to give said irons the requisite outline after being rolled.

The tongues *a* of the top roll are eccentric  
45 to the latter's line of axis, as best illustrated by Fig. 2, the relative centers of both this roll and its tongues being respectively shown by the full line *e* and dotted line *f* in said figure.

The collars *b* on the lower roll all have their  
50 center on the line of axis of said roll, and the

axial line of both rolls determines the centers from which are struck the circumferences of the intervals between the respective parts *a b* of said rolls.

The irons to be treated by my improved rolls 55 are first formed in the usual manner, and are of equal thickness throughout their entire length. These irons, after being suitably heated, are severally fed to the rolls B C when the eccentric tongues *a* of the top one are at their 60 greatest throw and the distance between them and the grooves *c* on the lower one the least. The end of the iron first engaged is reduced by the pressure exerted and the surplus metal forced toward the other end. The pressure 55 gradually diminishes as the throw of the eccentric tongues lessens until a half-revolution is accomplished, when, as the throw of said eccentric begins to increase, this pressure is correspondingly increased until the greatest 70 throw is again attained and the iron passed out from the rolls.

The operation just described leaves each iron thickest in its center and gradually tapered therefrom toward each end, as shown by Fig. 75 3, while the pressure-faces of the rolls give said iron the desired contour, this result being accomplished at one revolution of the rolls.

In the manufacture of fish-plates I provide the eccentric tongues *a* of the roll B with a 80 bevel, *a'*, that is also eccentric and opposes a bevel, *b'*, and a shoulder, *b''*, on the collars *b* of the roll C. The blanks for the fish-plates are first given their angular shape by other rolls, but are of equal thickness throughout their 85 length, and when acted upon by my improved rolls the bevel *a'* on the eccentric tongues *a*, opposing the beveled and shouldered portions *b' b''* of the collars *b*, act upon the upper bearing-part, *g*, of said plates, so as 90 to give them the greatest width in the center and a gradual taper therefrom to each end, Fig. 5 showing this bearing part at its center and Fig. 4 at one end.

Fig. 1 shows the eccentric tongues *a* on the 95 roll B when at their least throw, and the space between them and the opposing grooves *c* on the roll B the greatest. In this figure I show the rolls constructed to operate upon two angle-irons at one time; but this construction 100

may be varied so as to accommodate a greater number.

Though I have described my invention as more particularly applicable to the manufacture of angle-irons—such as railway fish-plates—it is obvious that it may be used for other irons, the contour of the pressure portions being varied accordingly.

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

In a train of rolls, one roll provided with one or more eccentric tongues eccentrically

beveled on one side, and the opposing roll having one or more non-eccentric collars beveled and shouldered on the side opposite the bevel on the aforementioned tongues, substantially as set forth.

In testimony that I claim the forgoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

WILLIAM B. PARKES.

Witnesses:

H. G. UNDERWOOD,  
MAURICE F. FREAR.