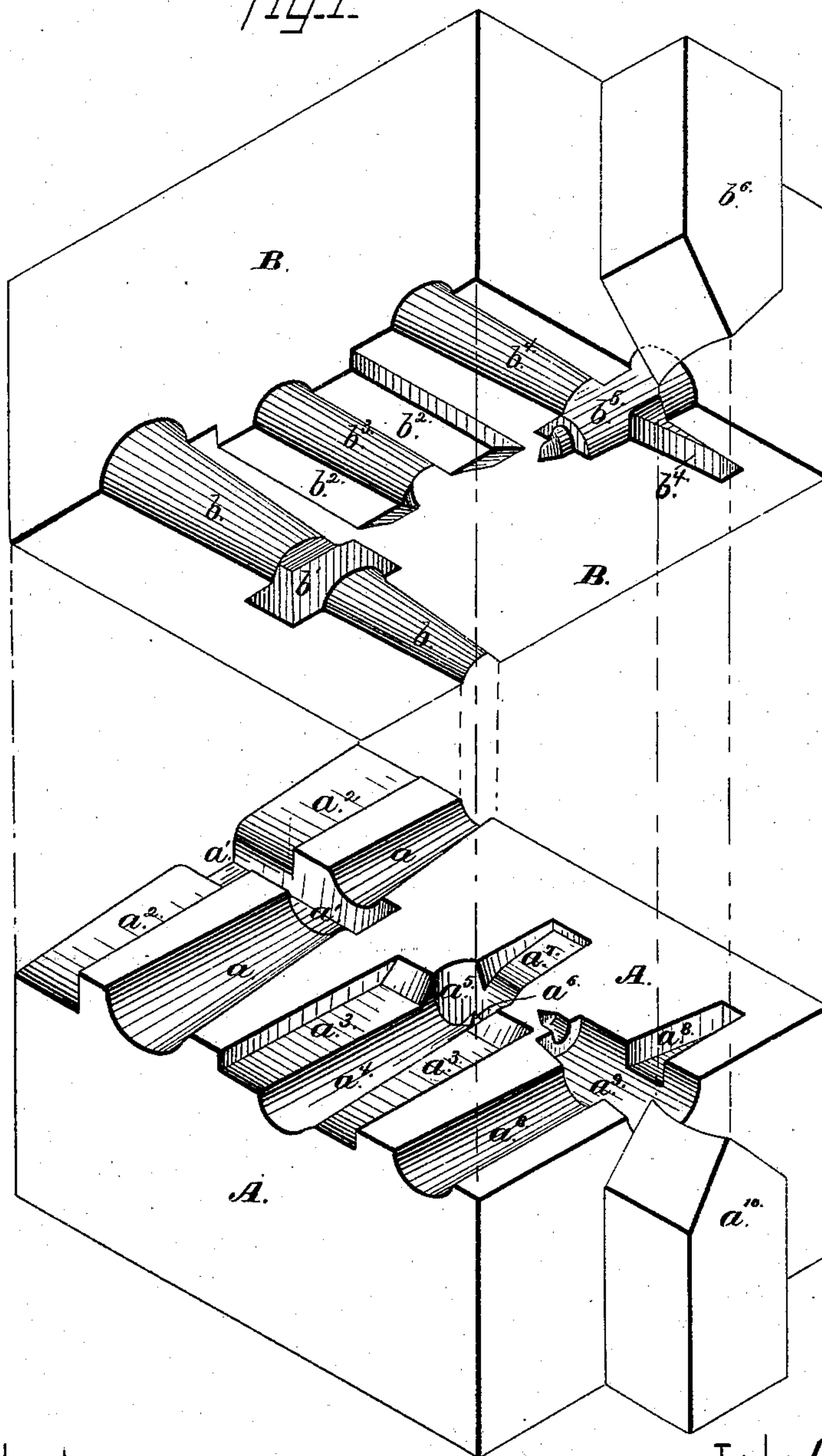


W. PEARCE.
 Device for Making Body Loops for Carriages.
 No. 235,806. Patented Dec. 21, 1880.

Fig. 1.



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Fig. 2.

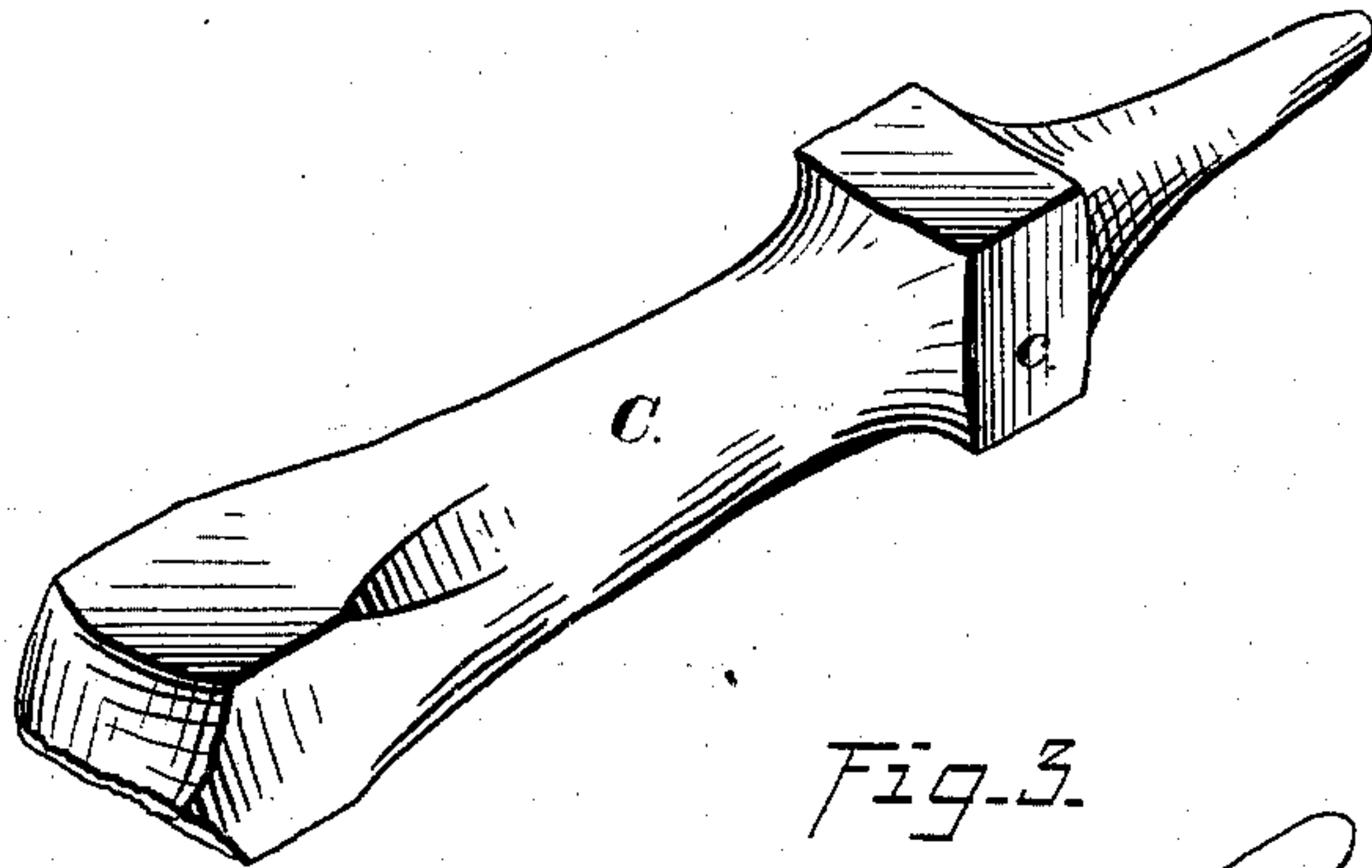


Fig. 3.

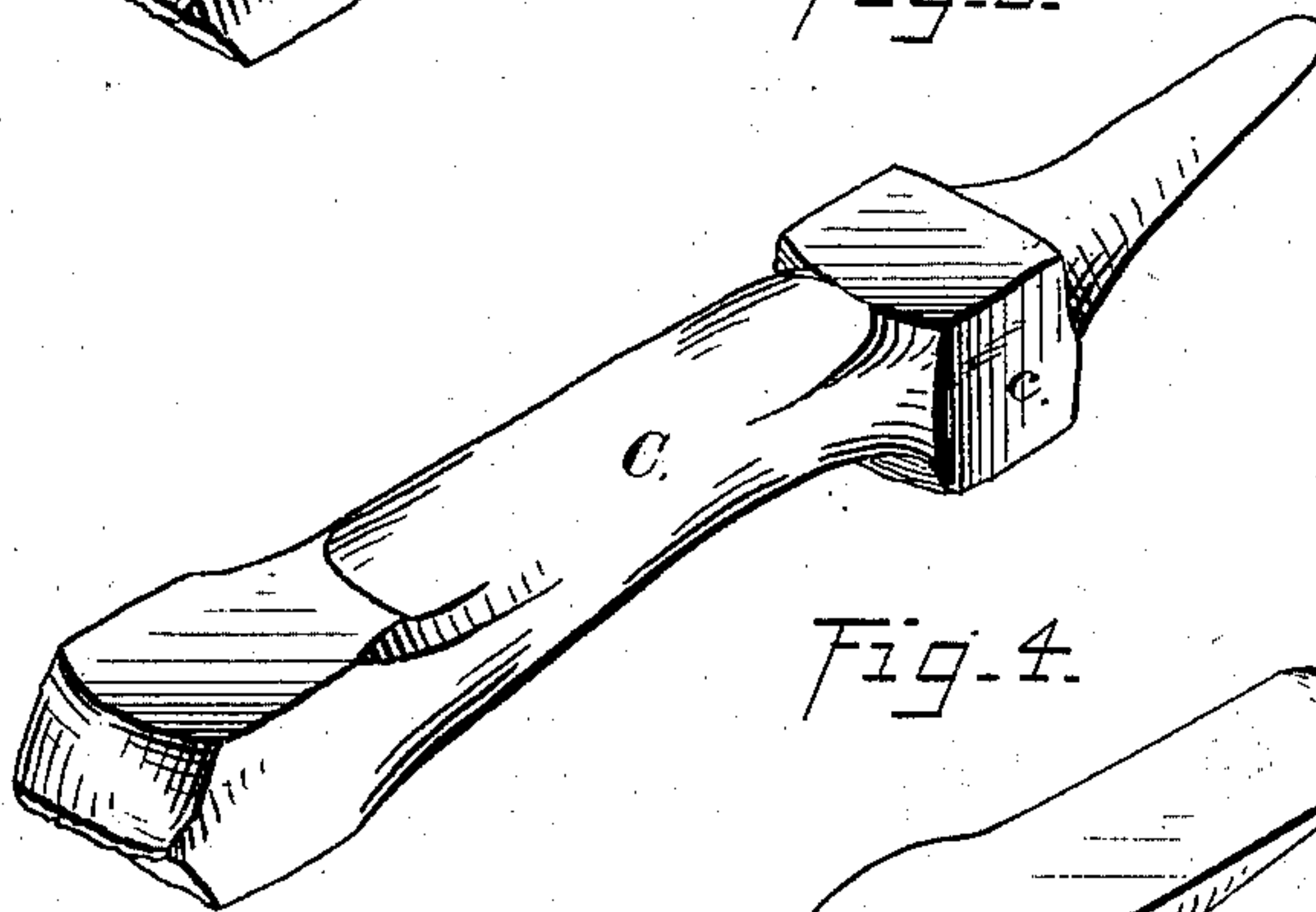


Fig. 4.

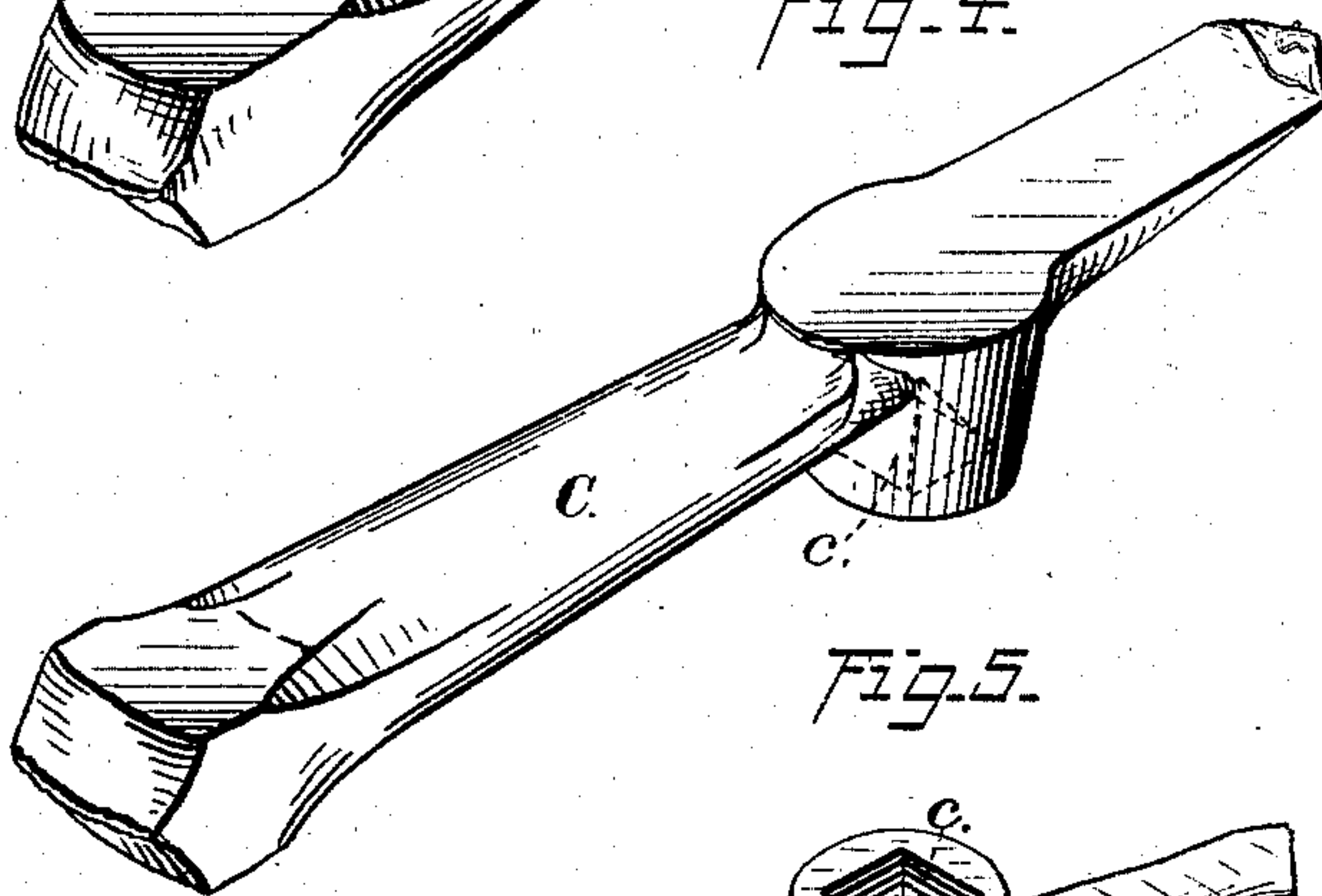
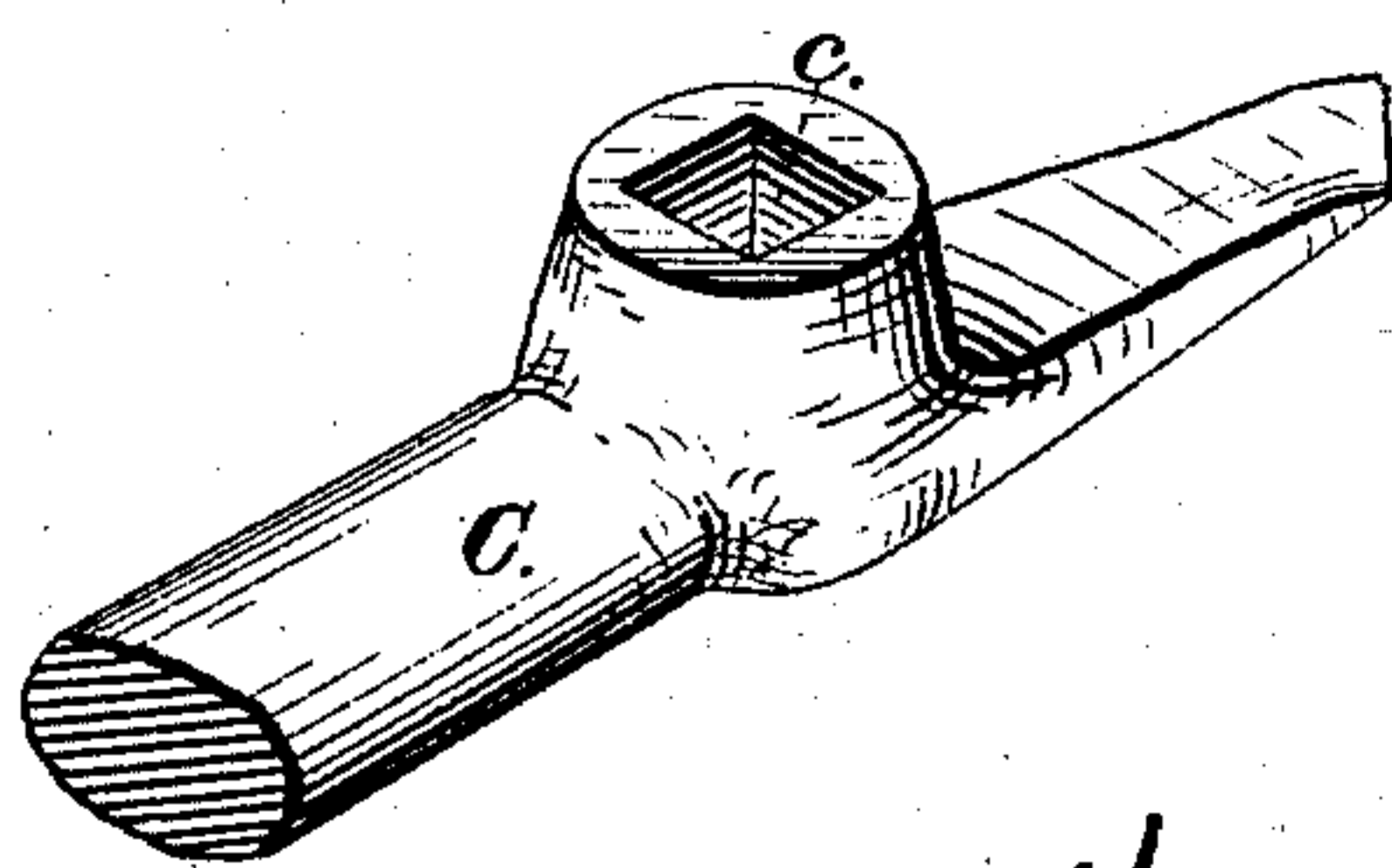


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM PEARCE, OF PLANTSVILLE, ASSIGNOR OF ONE-HALF TO MERIT N. WOODRUFF AND NORMAN A. BARNES, OF SOUTHLINGTON, CONNECTICUT.

DEVICE FOR MAKING BODY-LOOPS FOR CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 235,806, dated December 21, 1880.

Application filed February 27, 1880.

To all whom it may concern:

Be it known that I, WILLIAM PEARCE, of Plantsville, in the county of Hartford, and in the State of Connecticut, have invented certain new and useful Improvements in the Manufacture of Body-Loops for Carriages; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my dies separated from each other. Fig. 2 is a like view of the blank as it leaves the first pair of dies. Fig. 3 is a perspective view of said blank in its second stage. Fig. 4 is a like view of the completed body-loop from its lower side, and Fig. 5 is a perspective view of the same from its upper side.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to enable a body-loop to be easily and quickly formed, without upsetting, from a bar of iron having the requisite dimensions for the shank; and it consists in the series of dies employed for forming the body-loop from the bar, substantially as is hereinafter shown and described.

In the annexed drawings, A represents a rectangular block of metal, within which, near one end, is formed a half-round groove, a , which extends transversely across said block, and has regularly-decreasing transverse dimensions from its front end to its rear end. At a point slightly in rear of the longitudinal center of said groove a is formed a recess, a' , which has vertical parallel sides and inner end, and extends to the nearest end of said block, its course being at a right angle to the line of said groove.

At the end of the block A, immediately adjacent to the groove a , is formed a right-angled rabbet, a^2 , which extends parallel with the latter across the entire face of said block and across the recess a' , and regularly decreases in depth from its front to its rear end.

Within the face of the block A, adjacent to the groove a , but upon the side opposite to the rabbet a^2 , is formed a recess, a^3 , which has

a width considerably greater than the greatest width of said groove, has parallel vertical sides, and extends over half the distance across said block. Within said recess a^3 is formed a longitudinal half-round groove, a^4 , which decreases in transverse dimensions from its front to its rear end, and at the latter point connects with a recess, a^5 , that has a round form in plan view, and decreases in diameter from its upper to its lower end, at which point is provided a square conical lug, a^6 , that is centrally located.

From the rear side of the recess a^5 extends rearward a groove, a^7 , which has nearly parallel inward-sloping sides, a square rear end, and a bottom that extends in a curve upward and rearward.

Near the end of the block A, adjacent to and parallel with the groove a^4 , is provided a groove, a^8 , which, from its front end to the center of said block, is half-round, while that portion in rear of said point has a horizontal bottom, side and end walls, which incline slightly inward and downward, and from front to rear decreases slightly in width.

Between the half-round and right-angled portions of the groove a^8 is formed a recess, a^9 , which is half-round, is arranged at a right angle to the line of said groove, and decreases regularly in transverse dimensions from one end to the opposite end.

The upper die, B, corresponds in size and shape to the die A, and within its lower face is provided with a groove, b , and recess b' , which are exactly similar in size and form to the groove a and recess a' of said die A, and when said dies are brought together exactly coincide with the same in position. Directly over the recess a^3 the die B is provided with a projection, b^2 , which corresponds in size and shape to and fits into said recess, and has within its face a half-round groove, b^3 , that corresponds in dimensions to the groove a^4 . Directly over the groove a^8 and recess a^9 a groove, b^4 , and recess b^5 are formed within the face of the die B, which latter are the exact counterparts of the former.

At one end of each die A and B is formed a cutting-die, a^{10} , and b^6 , respectively, which coincide when said dies are closed together.

The dies are now complete, and are used as follows, viz: A bar of square iron, having suitable dimensions for the butt of the body-loop, is heated at one end, and then placed within the groove a of the die A and subjected to several blows of the upper die, B, said bar being turned one-fourth of a revolution after each blow, the result of which is the rounding of such portions as are within said groove, while that part which is over the recess a' maintains its square form, the blank C (shown in Fig. 2) being the result of the operation. The blank C is now placed within the rabbet or die a^2 , its square part c being contained within the recess a' , and after one or more blows from the die B said square part is forced downward into said recess, so as to make its upper surface upon a line with the remainder of said blank, the result being the form shown in Fig. 3. The blank C is now placed within the third die a^4 a^5 , and after one or more blows from the upper die is transferred to the fourth die a^8 a^9 , and placed edgewise within the same and again subjected to one or more blows of said upper die, said blank being operated upon alternately by said third and fourth dies until the metal is caused to closely fill the same, and the completed body-loop (shown in Figs. 4 and 5) is produced. The lug a^6 forms

a corresponding recess, c' , within the boss of the body-loop C, so that in preparing the opening for the bolt it is only necessary that a round hole should be drilled, the square shank of the bolt being accommodated by said recess.

In the use of the dies described no upsetting of the metal is required for the formation of the boss, nor is it necessary to use larger iron than is required for the body-loop, while, from the manner of the operation of said dies, no fin is produced except at the small end of said body-loop, and the removal of the said fin is all that is required to finish the forging. After the forging described the body-loop C is cut from the bar by means of the cutting-dies a^{10} and b^6 .

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

The series of dies employed for forming the body-loop, constructed and operating substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of January, 1880.

WILLIAM PEARCE.

Witnesses:

A. M. LEWIS,

MARY J. LEWIS.