

No. 687,841.

Patented Dec. 3, 1901.

M. G. LEWIS.  
SLIDE BAR FOR BENCH VISES.

(Application filed Apr. 6, 1901.)

(No Model.)

Fig:1.

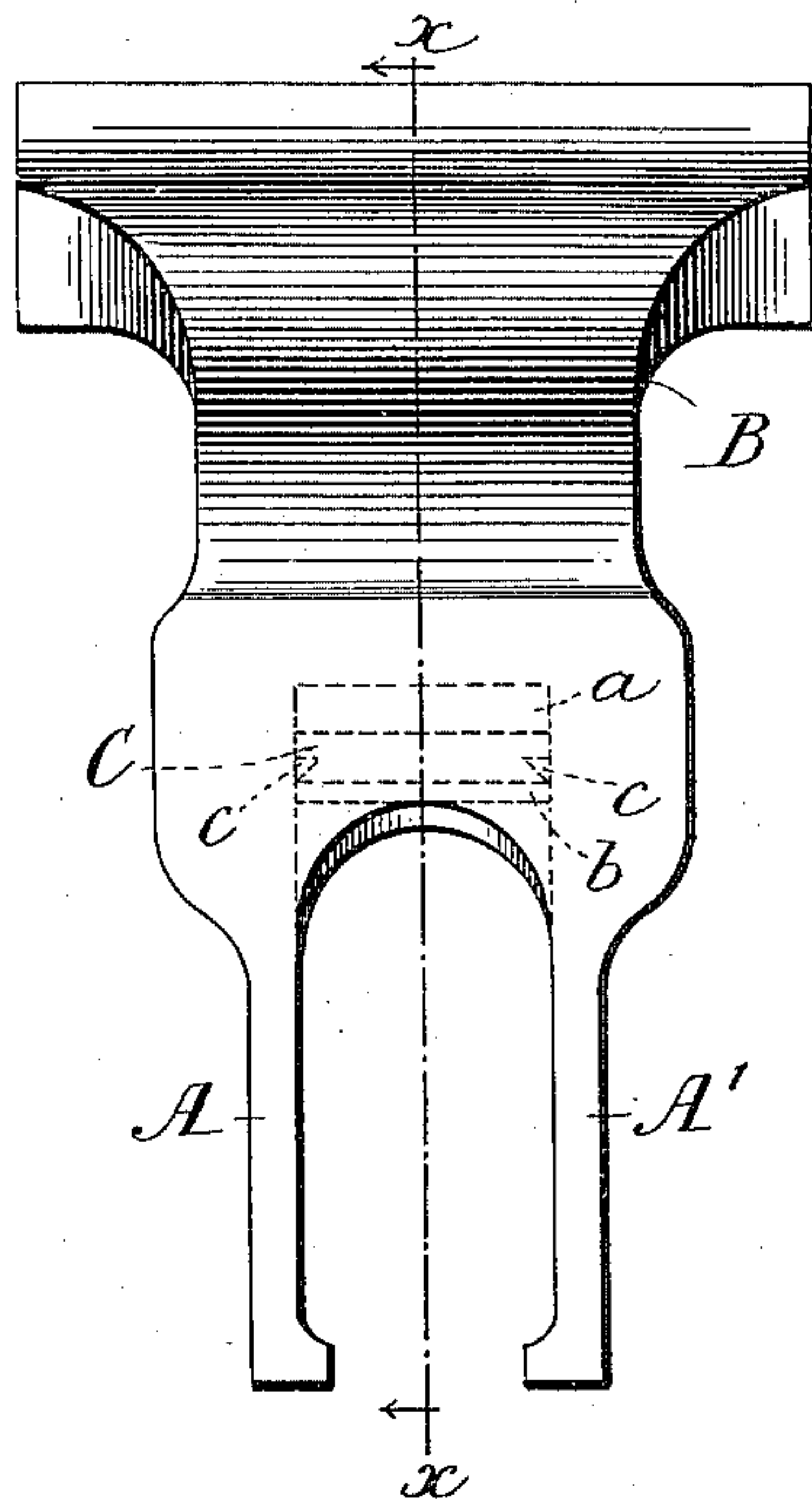


Fig:3.

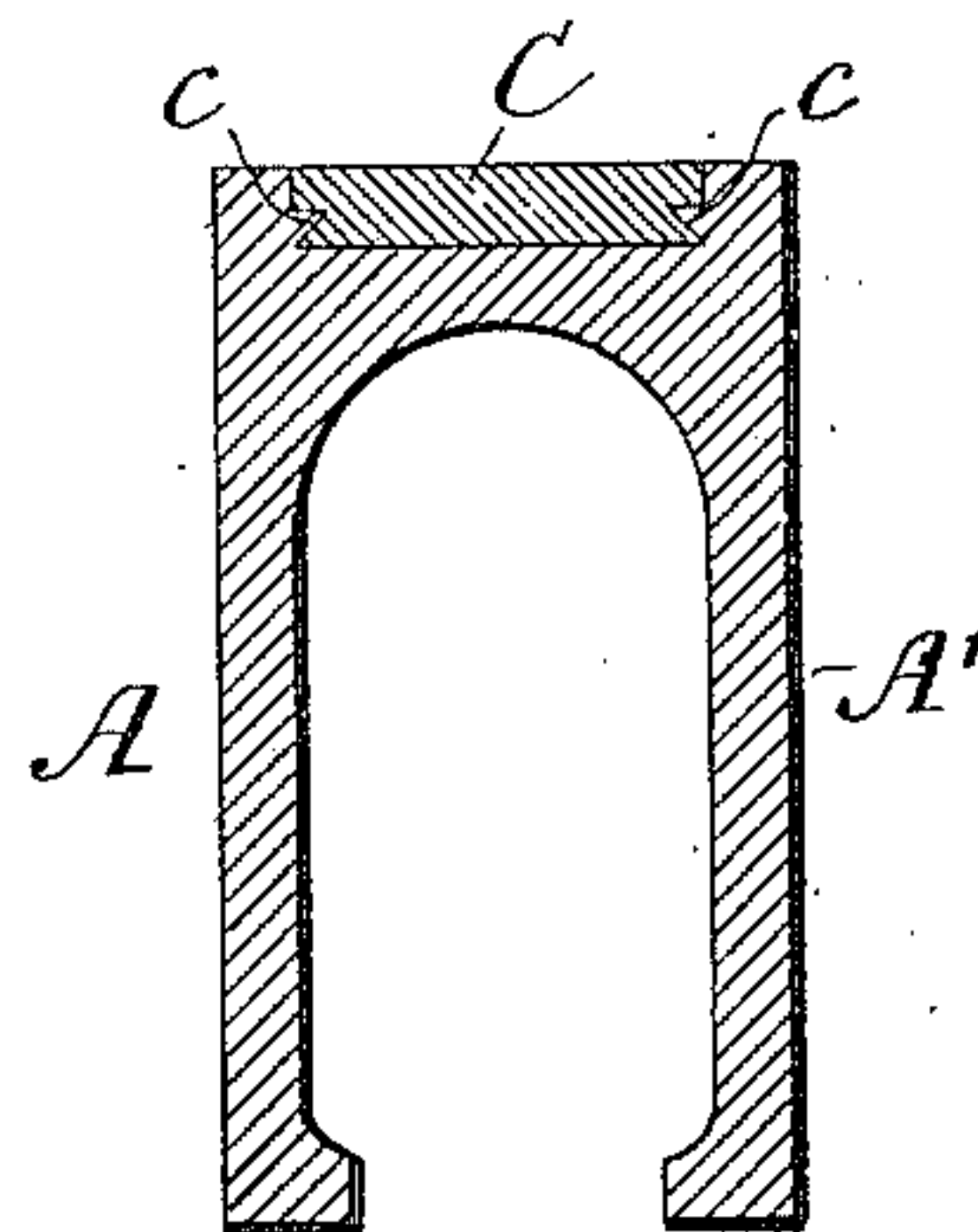


Fig:2.

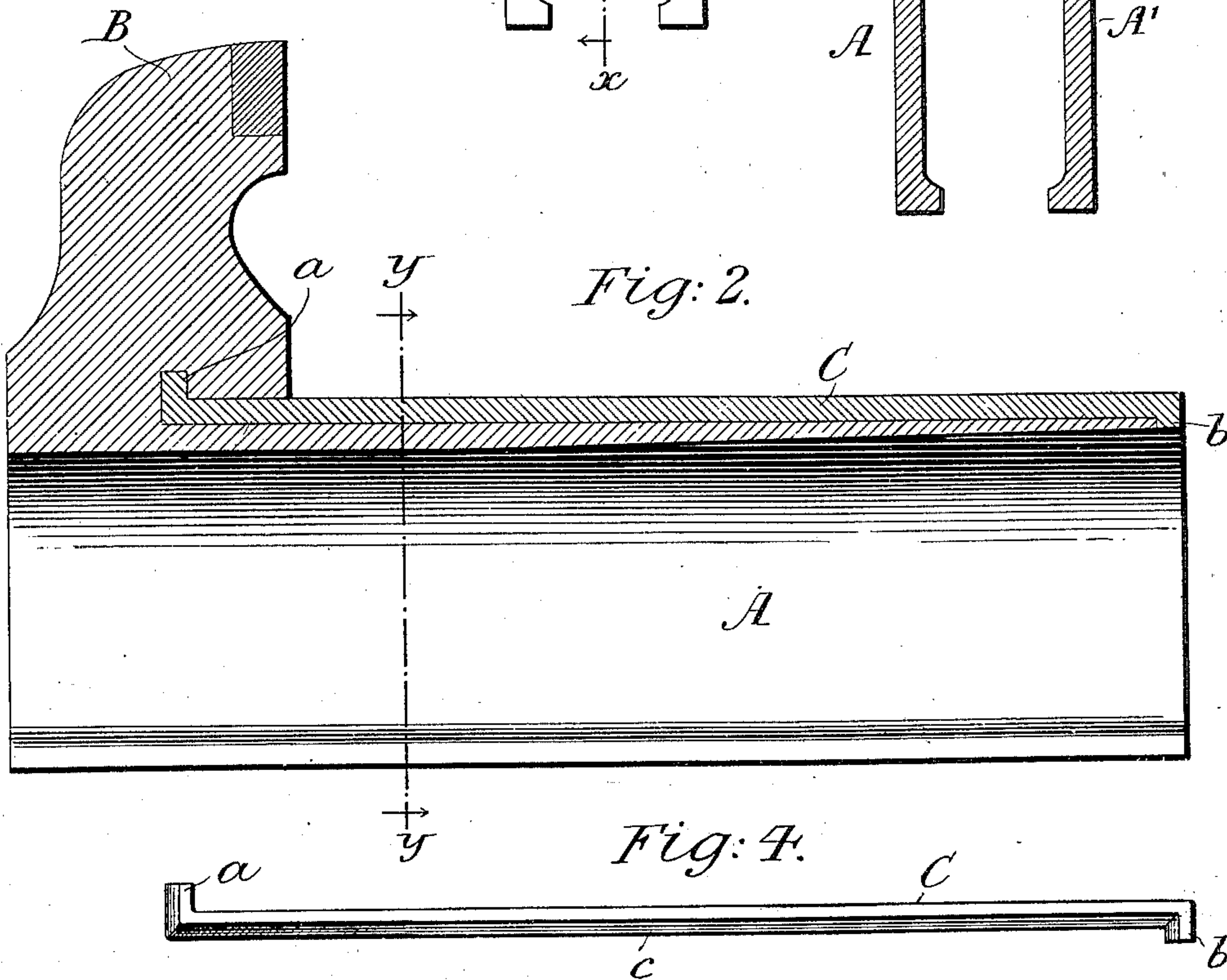
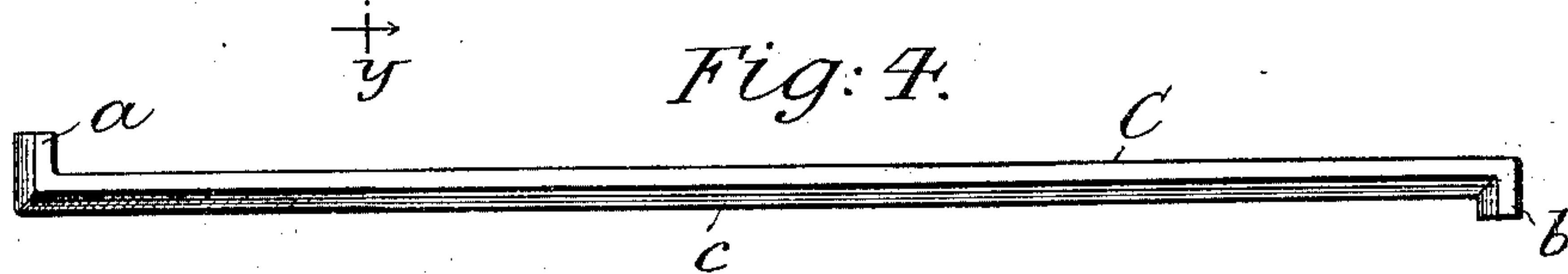


Fig:4.



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# UNITED STATES PATENT OFFICE.

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## SLIDE-BAR FOR BENCH-VISES.

SPECIFICATION forming part of Letters Patent No. 687,841, dated December 3, 1901.

Application filed April 6, 1901. Serial No. 54,604. (No model.)

*To all whom it may concern:*

Be it known that I, MORTIMER G. LEWIS, a citizen of the United States, residing at New York city, in the county and State of New York, have invented certain new and useful Improvements in Slide-Bars for Bench-Vises, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact specification.

Slide-bars for bench-vises have heretofore been made of various patterns, some to attain cheapness of manufacture, others to insure against breakage, and again others to cover and protect the vise-screws from collection of dust and chippings or filings thereon. The preferable form of slide-bar is of general rectangular figure in cross-section, hollow to accommodate the vise-screw and open at bottom to admit of movement back and forth past the stationary nut with which the vise-screw engages. This form affords all the protection required for the vise-screw, whereas other forms generally do not afford such protection. The material used for this form of bar is cast-iron, and the bar has generally been cast with the head all in one piece. When these cast-metal pieces are employed, especially in the larger sizes of vises, they frequently become broken, and this generally in close proximity to the movable vise-head, due to the hammering or pounding upon the work which may be held in the vise. The cast metal having little tensile strength it opens at top under the influence of the blows. The slide-bars of vises are also frequently damaged and sometimes destroyed by using them as a sort of an anvil, on which metal is hammered. The blows seem to crystallize the iron in such cases and render it easily broken.

The object of my invention is to provide or produce a slide-bar for bench-vises which shall cover and protect the screw as well as in the best forms and which shall be supplied with a reinforcing-piece on top, the same being united to practically form part of the top of the bar, contributing ample tensile strength at this part to prevent possible breakage and affording a surface which will not be damaged by strokes or blows of the hammer.

To accomplish the above-named object and to secure other and further advantages in the

matters of construction, operation, and use, my invention involves certain new and useful arrangements or combination of parts and particular features of construction, as will be herein first fully described and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a view in elevation of the front face of the slide-bar and the vise-head formed therewith, other parts of the vise being omitted as not essential to an explanation of the present invention. Fig. 2 is a sectional view on line *x x* of Fig. 1 looking in the direction of the arrows. Fig. 3 is a cross-sectional view on a plane through line *y y* of Fig. 2 looking in the direction of the arrow. Fig. 4 is a side elevation of the reinforcing or strengthening piece or plate shown in Fig. 2.

In all the figures like letters of reference wherever they occur indicate corresponding parts.

*A A'* are parallel side walls of the vise-bar, the same being joined by the top, but open or separate at bottom, so as to cover and protect the vise-screw and admit of travel back and forth past the stationary nut.

*B* is the vise-head, which is preferably cast with the slide-bar.

*C* is a strip or plate of steel or wrought-iron of suitable thickness and width, varying, of course, as the size of the vise varies. It is preferably about as wide as the space between the sides of the bar and about half the thickness of the bar at the head; but of course these proportions may be varied. In length it preferably extends from about the middle of the head to the end of the bar, substantially as indicated. The strip *C* is supplied with an upturned portion *a* at one extremity and a downturned portion *b* at the other extremity. These portions or projections may be formed by simply bending the ends of the wrought-metal strip or by upsetting the ends thereof or by securely welding or otherwise applying separate pieces. This strip or plate is grooved or channeled on each side, as at *c*, this groove or channel being preferably in angular form and by preference extending along the sides of the portions *a b*, as indicated in the side view, Fig. 4. This groove or channel may be easily formed by milling, or it may



be otherwise formed. It affords a security and certainty in the uniting of the cast metal with the wrought metal, as is my desire. The wrought-metal strip being formed and prepared, it is placed in the mold or sand, and molten iron is then poured in to form the bar and head. The parts are thus securely and perfectly united together, and when they are withdrawn from the mold they form practically one piece. The finishing or trimming is accomplished precisely as if no wrought-metal strip entered into the structure. The strip being located in the bar, as indicated, it is securely anchored within the material of the head at one end and in the material of the bar at the other end, so that any blow tending to break the bar (at the top) must tend to overcome the tensile strength of the strip. In the proportions indicated the strip is thick enough and strong enough to resist any blow to which it is likely to be subjected. The top of the bar being thus strengthened and protected may be used after the manner of an anvil without danger of serious damage thereto. The improvements being applied substantially in the manner above indicated will be found to admirably answer all the purposes or objects of the invention hereinbefore alluded to. Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a slide-bar for bench-vises, the combination with the cast-metal bar of a wrought-metal strip united thereto and on the top thereof, substantially as explained. 35

2. In a slide-bar for bench-vises, the combination with the cast-metal bar of a wrought-metal strip having upturned and downturned projections at the ends, the same being secured in the top of the bar, substantially as explained. 40

3. In a slide-bar for bench-vises, the combination with the cast-metal bar of a wrought-metal strip having grooves or channels in the sides, said strip being secured in the top of the bar, substantially as and for the purposes specified. 45

4. In combination with a cast-metal slide-bar for bench-vises having a vise-head formed integrally therewith, a wrought-metal strip secured in the top of the bar, extending from about the middle of the head to the end of the bar, and supplied with upturned and downturned projections, substantially as shown and for the purposes set forth. 55

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

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Witnesses:

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