

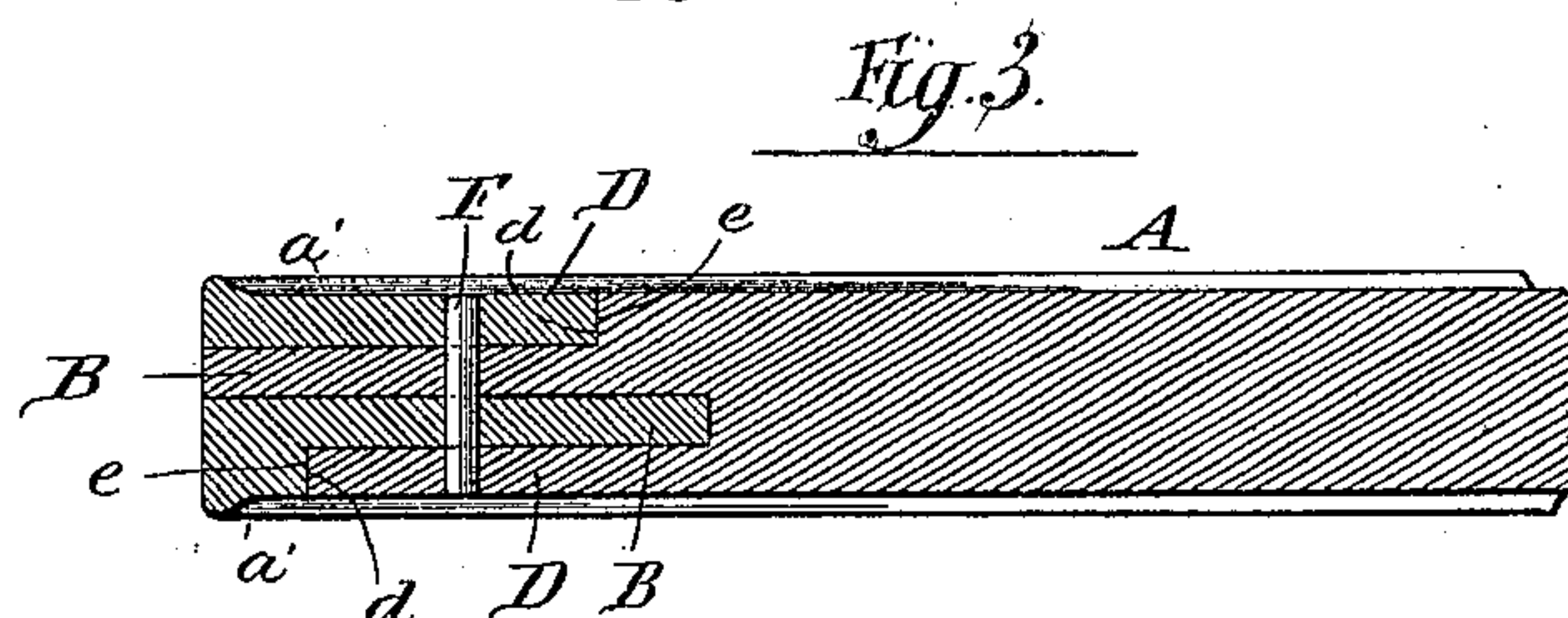
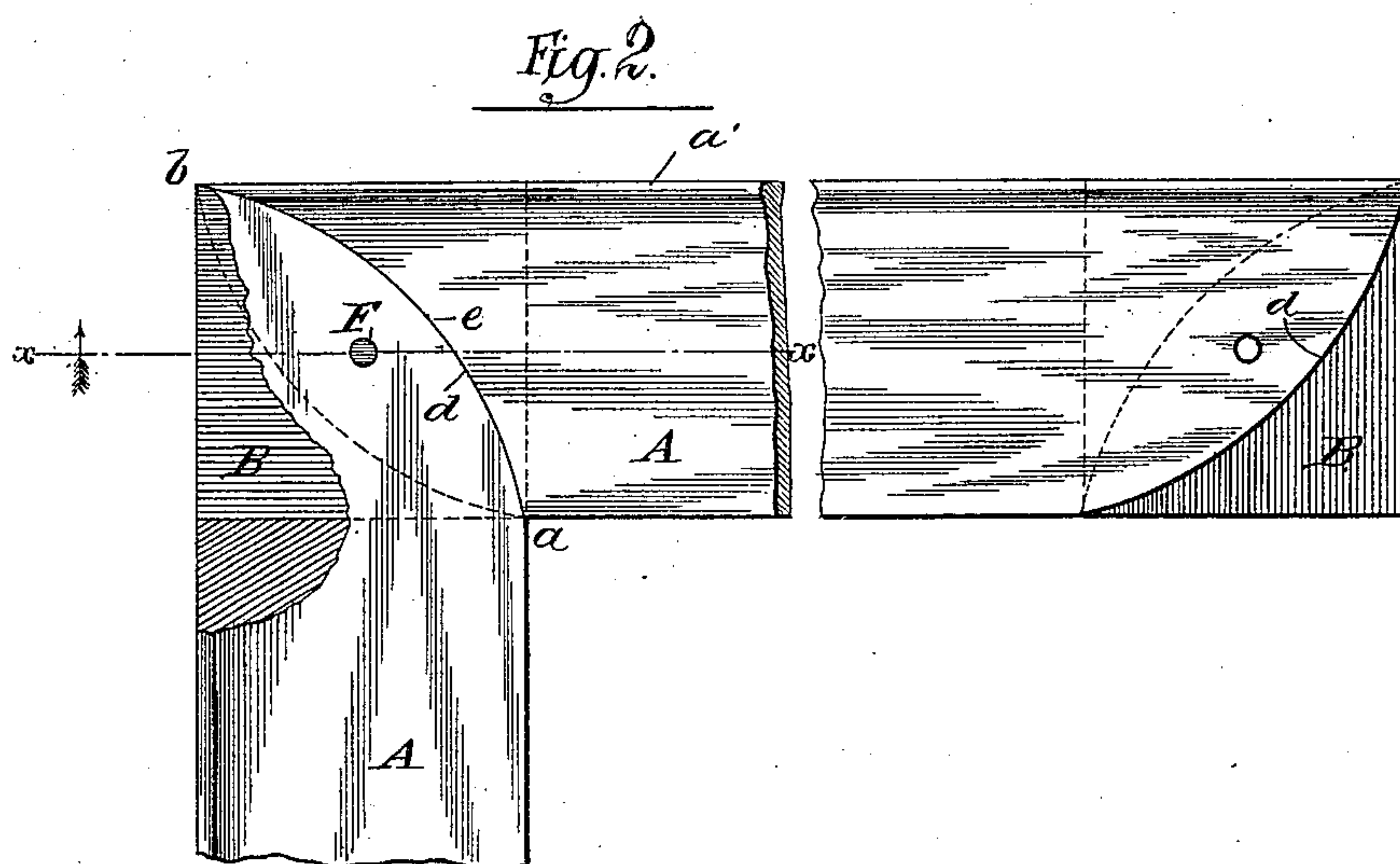
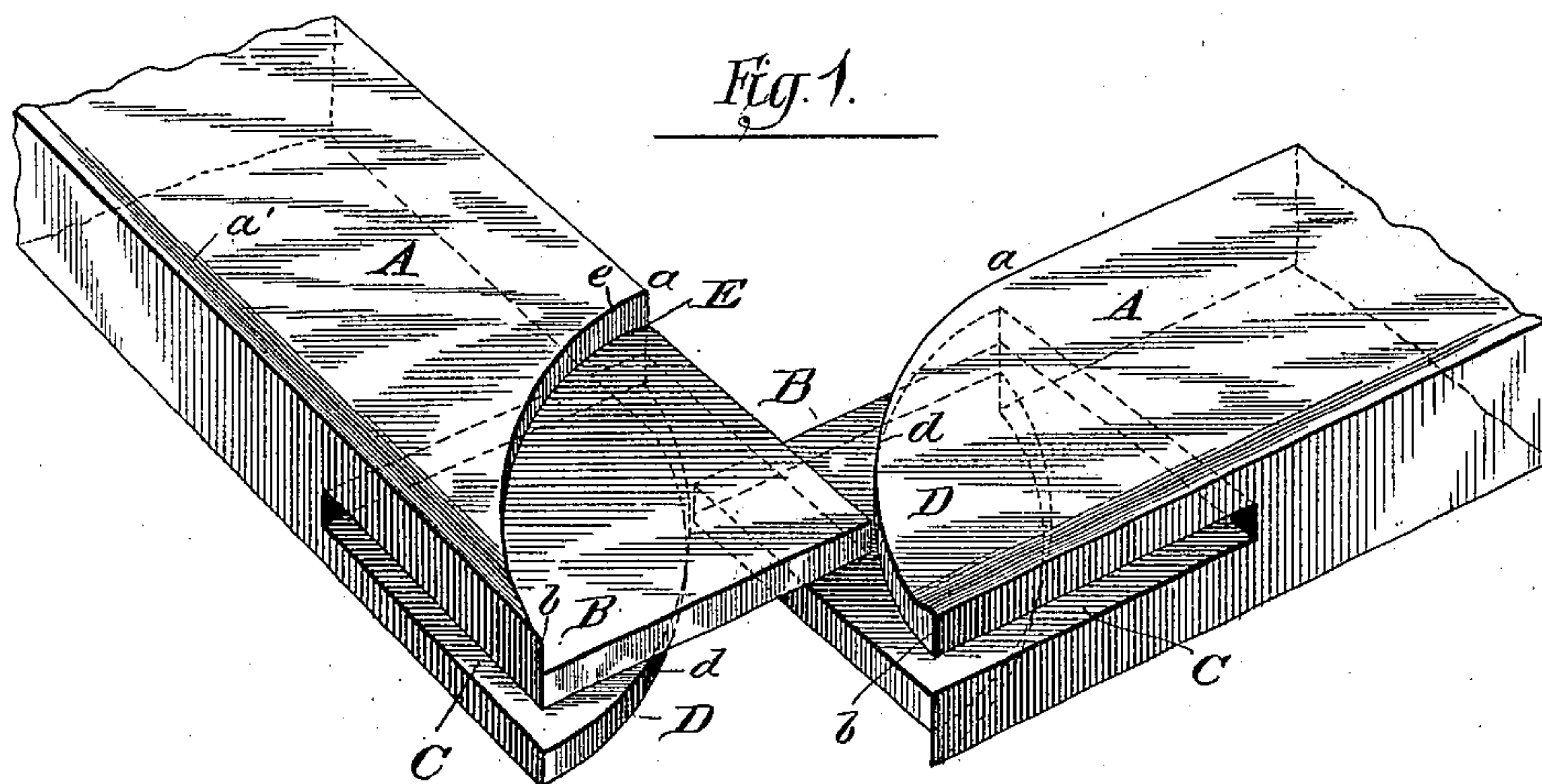
(No Model.)

J. APOLL.

JOINT FOR FRAMES OF PICTURES AND OTHER FRAMES.

No. 354,824.

Patented Dec. 21, 1886.



*Witnesses:*

*Louis M. F. Whitehead.*  
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*Inventor:-*

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*by:*

*M. E. Dayton*

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# UNITED STATES PATENT OFFICE.

JACOB APOLL, OF CHICAGO, ILLINOIS, ASSIGNOR TO DUNCAN & JOHNSTON,  
OF SAME PLACE.

## JOINT FOR FRAMES OF PICTURES AND OTHER FRAMES.

SPECIFICATION forming part of Letters Patent No. 354,824, dated December 21, 1886.

Application filed March 11, 1886. Serial No. 194,890. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB APOLL, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Joints for Frames of Pictures and other Frames; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to novel features of construction in tenon-and-mortise joinery of frames, and has more especial reference to such joinery in frames for pictures, screens, and for artists' canvas stretchers. The invention involves a plurality of tenons on each end of each piece or bar of the frame, one of which tenons is external or flush and finds seat in a corresponding relish in the adjacent piece.

The invention consists in the relish formed with an inwardly curved or concaved shoulder having its terminals at the edges of the frame-piece in a line which bisects the angle of the frame, and the flush or external tenon outwardly curved or convex on its end to fit such concavity of the relish.

Referring to the drawings for an illustration of my invention, Figure 1 is a perspective view of meeting parts of a screen or stretcher frame having joining mortises, tenons, and relishes constructed in accordance with my invention, the parts being drawn apart to better show their particular construction. Fig. 2 is a plan of the same parts connected and pinned together, but with a portion of the flush or external tenon removed. This figure also shows an opposite arrangement of the tenons and mortises on opposite ends of the same piece of the frame. Fig. 3 is a section through *xx* of Fig. 2.

A A are several frame-pieces. B B are interior full tenons.

C C are through-mortises, which receive the tenons B.

D D are the outer or flush tenons, and E E are the external mortises, or so-called "relishes," which receive the flush tenons D. The latter are convex on their ends *d*, being preferably cut off in the arc of a circle between the marginal points *a b*, which are in a line that bisects the angle of the frame. The shoulders

of the relishes E are also concaved in a corresponding form between their terminals at the edges of the frame-piece, to receive the convex ends of the tenons D.

Adjacent ends of the frame-pieces being provided with a flush tenon and an opposite relish of the form described, it is evident that when the frame is joined an external tenon will project beyond a miter-line of the joint on each face of the frame, and that, by reason of this overlap of said flush tenons, the joint is materially stronger than would be the case if the flush tenon were mitered with the relish. Moreover, for the same reason, in fixed joints of this construction, a pin, F, inserted through the parts in the miter-line engages all the tenons and imparts the same strength to the joint as though all the tenons were full, while retaining the essential advantages of an externally-mitered joint. In picture-frames having corner ornaments the fastening for the ornament may form such a pin.

For different uses the frame may be either of uniform thickness, beveled to a less thickness at its inner edge, or provided with one outer bead, *a'*, as seen in Fig. 1, or with two opposite beads, *a' a'*, as seen in Fig. 3. For picture-frames and stretchers the beveled or beaded form will commonly be used which requires that the full thickness of the outer margin of each frame-piece shall extend to the angle. In stretchers also it is desirable that the parts shall be interchangeable, wherefore I employ, in this use of the invention, the old device of opposite arrangement of the tenons and mortises on opposite ends of each frame-piece, or, in other words, place a tenon on one end of the piece opposite a mortise or relish on the other end of the piece, as shown in Fig. 2.

I am aware that frames have been made heretofore in which each piece or bar of the frame is provided upon both ends with a mortise and tenon and with exterior mitered parts adjacent to both side faces of the frame-pieces; and I am also aware that a mortise-and-tenon joint has been made with a series of convexly-rounded tenons and concave mortises to fit said tenons. I am not aware, however, that a frame-joint has ever heretofore been made containing one or more interior full tenons and



corresponding through-mortises, and having exterior or flush tenons curved upon their ends and fitted in grooved mortises or relishes, as herein described and shown, this construction obviously giving a much stronger joint than would be obtained by the use of mitered surfaces at each side of the joints, while at the same time retaining the essential advantages of mitered joints, as hereinbefore stated.

10 I claim as my invention—

1. A frame having mortise-and-tenon joints in which the adjacent or joined ends of the frame-pieces are provided one with one or more full tenons and through-mortises and an exterior or flush tenon, and the other with a corresponding full tenon or tenons and through mortise or mortises, together with an exterior mortise or relish to receive the said flush tenon, the said exterior mortise or relish being formed with an inwardly curved or concave should-

der, and the flush or external tenon being outwardly curved upon its edge to fit the concavity of the relish, substantially as described.

2. In a frame having mortise-and-tenon joints, frame-pieces which are each provided on each end with one or more interior full tenons, and also with a tenon flush with one face of the frame and convex upon its end, and with a relish on the opposite face of the frame, having a corresponding concave shoulder and one or more through-mortises to receive a full tenon or tenons, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

JACOB APOLL.

Witnesses:

M. E. DAYTON,  
C. CLARENCE POOLE.