

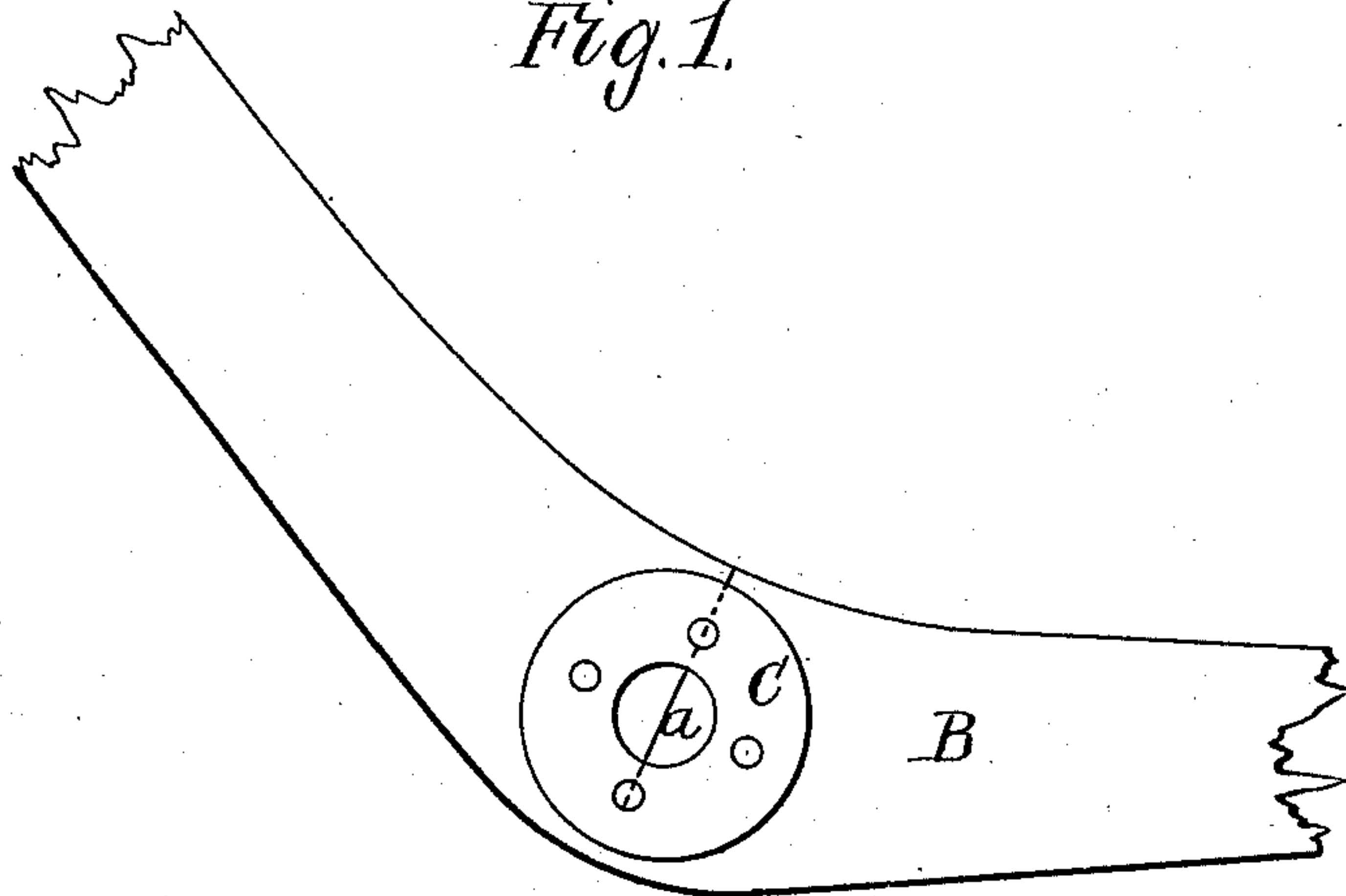
(No Model.)

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JOINT FOR BOAT KNEES, &c.

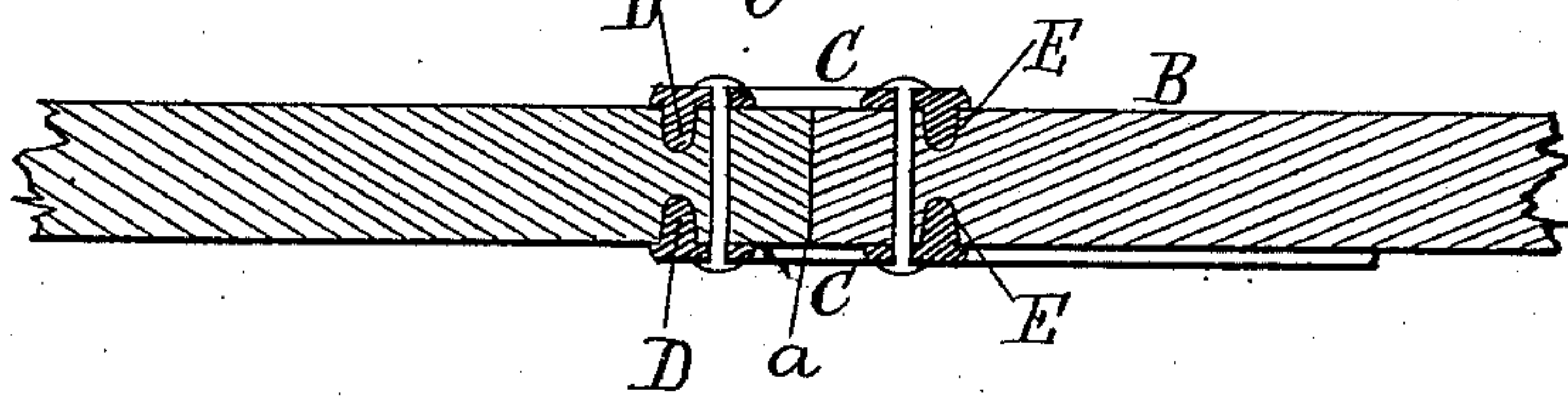
No. 287,057.

Patented Oct. 23, 1883.

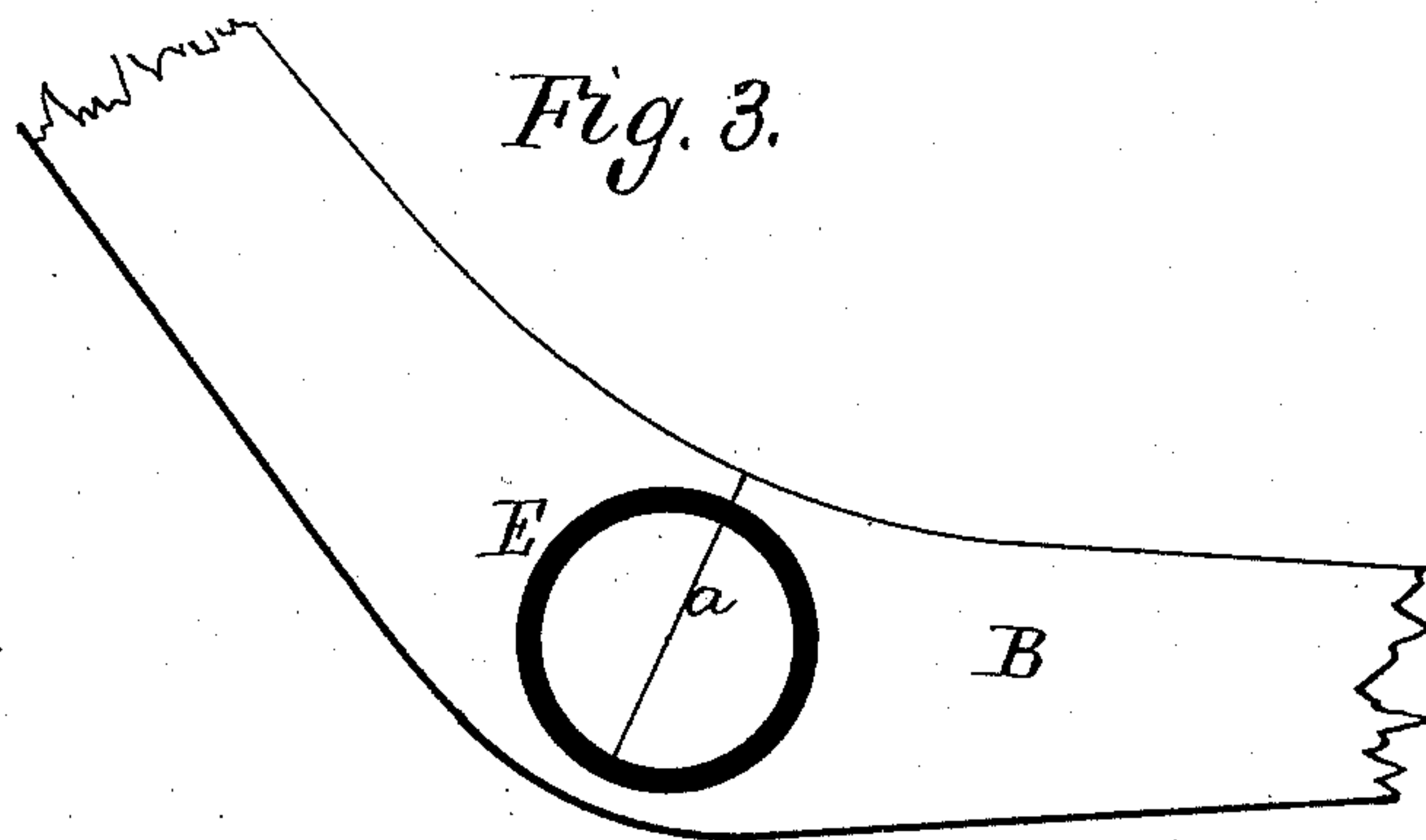
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

JOSEPH WASHINGTON SANBORN, OF KINGSTON, NEW HAMPSHIRE.

## JOINT FOR BOAT-KNEES, &c.

SPECIFICATION forming part of Letters Patent No. 287,057, dated October 23, 1883.

Application filed August 18, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH WASHINGTON SANBORN, a citizen of the United States, residing at Kingston, in the county of Rockingham and State of New Hampshire, have invented certain new and useful Improvements in Joints for Boat-Knees or other Uses; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to means for strengthening joints in wood, or between two pieces of wood; and it consists in the employment of a metallic stay-plate having formed upon one side a circular rib adapted to enter and fill a corresponding annular groove which is cut in the wood and intersects the joint to be strengthened, the plate overlapping the surface of the wood and being secured thereto by rivets, screws, or other means.

The drawings accompanying this specification represent, in Figure 1, a plan, and in Fig. 2 a section, of a boat-knee containing the principle of my invention. Fig. 3 is a plan of the joint with the groove.

In said drawings I have represented a boat-timber, which in this instance is composed of a strip or bar, B, of wood, bent into the desired form, a portion of the wood upon the inside of the bend being cut away, to enable the bending of the strip to be more readily accomplished.

In carrying out my invention I employ a thin metallic stay-plate, C, which may be of any suitable shape, but which, as shown in the accompanying drawings, is annular in form; and I form upon one side of this plate a circular rib, D, which is preferably somewhat wedge-shaped in cross-section, in order to tightly fill the groove into which it is crowded. In applying the stay-plate C, I form in one side of the timber B an annular circular

groove, E, of a size to tightly receive the rib D of the stay-plate, and I drive the rib into this groove until the stay-plate laps closely upon the face of the timber. I then secure the stay-plate to the timber by rivets, bolts, or other means, and in practice I apply a stay-plate to each side of the timber, as shown in Fig. 2 of the drawings. The groove E intersects the joint *a* at the bend of the timber, and I prefer that the joint shall cross the groove about centrally of the latter, as shown in dotted lines in Fig. 1 and fully in Fig. 2.

The timber B, in lieu of being in one piece and bent into the desired shape, as shown in the drawings, may be in two pieces abutted together. My invention is equally applicable to either form.

I have shown my invention as applied to a boat-timber; but it is evident that it is adapted to many other uses where joints between two pieces of wood or analogous material are to be strengthened.

The rib D, while serving to confine the parts of the joint firmly together, also tends to prevent splitting of the wood.

In forming the groove E it is desirable that the portion *b* of the wood inclosed by the rib D shall be of somewhat larger diameter than the interior of the said rib, in order that when the latter is driven into the groove it shall bind or cramp the portion *b*, and in so doing draw the sides of the joint closely together. My invention is simple, ornamental, strong, and easily applied.

I claim—

A method of strengthening joints, consisting of the stay-plate, with its circular rib and the annular groove in the material intersecting the joint, the rib tightly filling the groove, and the plate being properly secured to the material, substantially as explained.

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

JOSEPH WASHINGTON SANBORN,

Witnesses:

F. CURTIS,  
A. HAYDEN,