

(No Model.)

D. TRUE.

BOAT KNEE.

No. 371,644.

Patented Oct. 18, 1887.

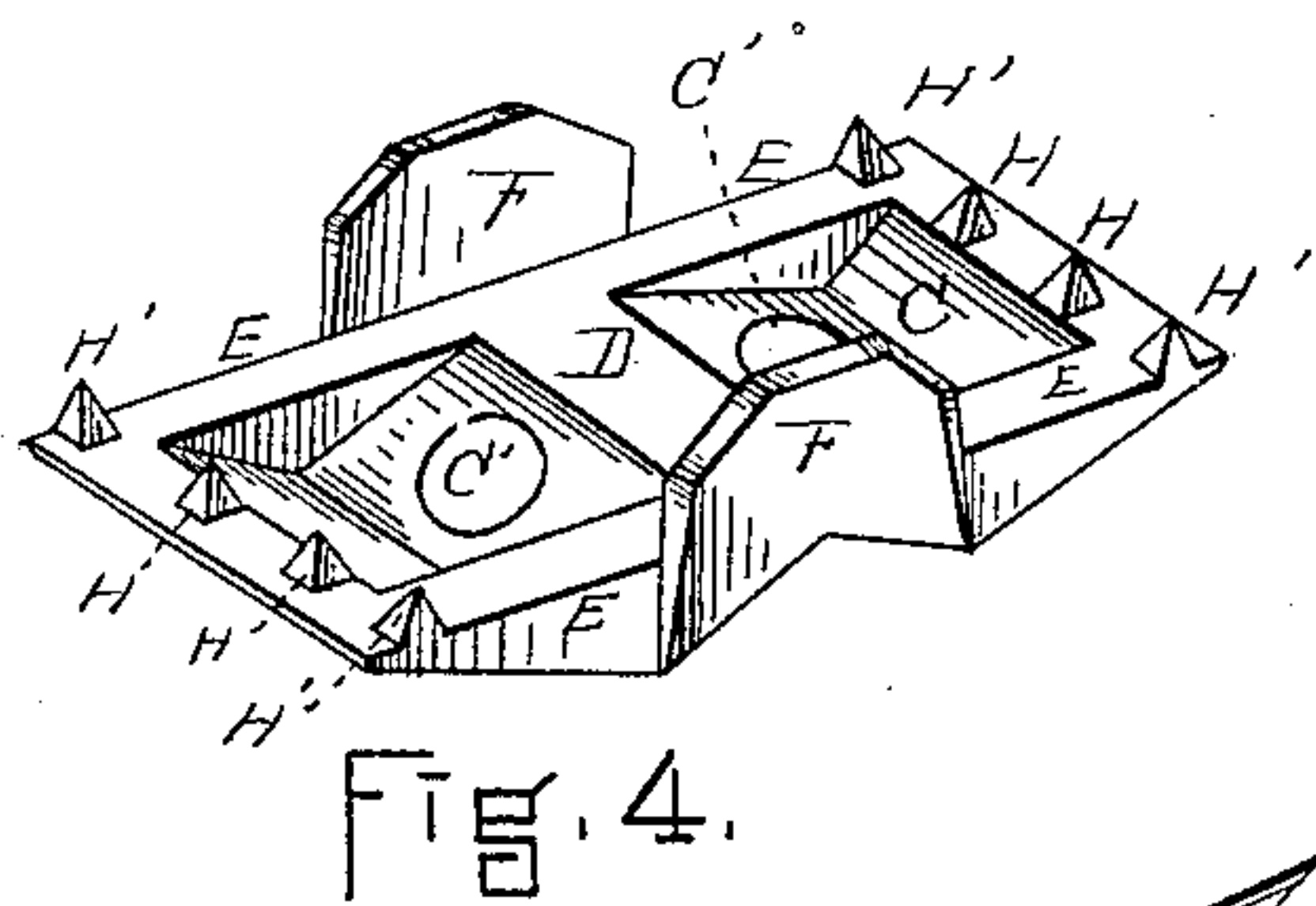


Fig. 4.

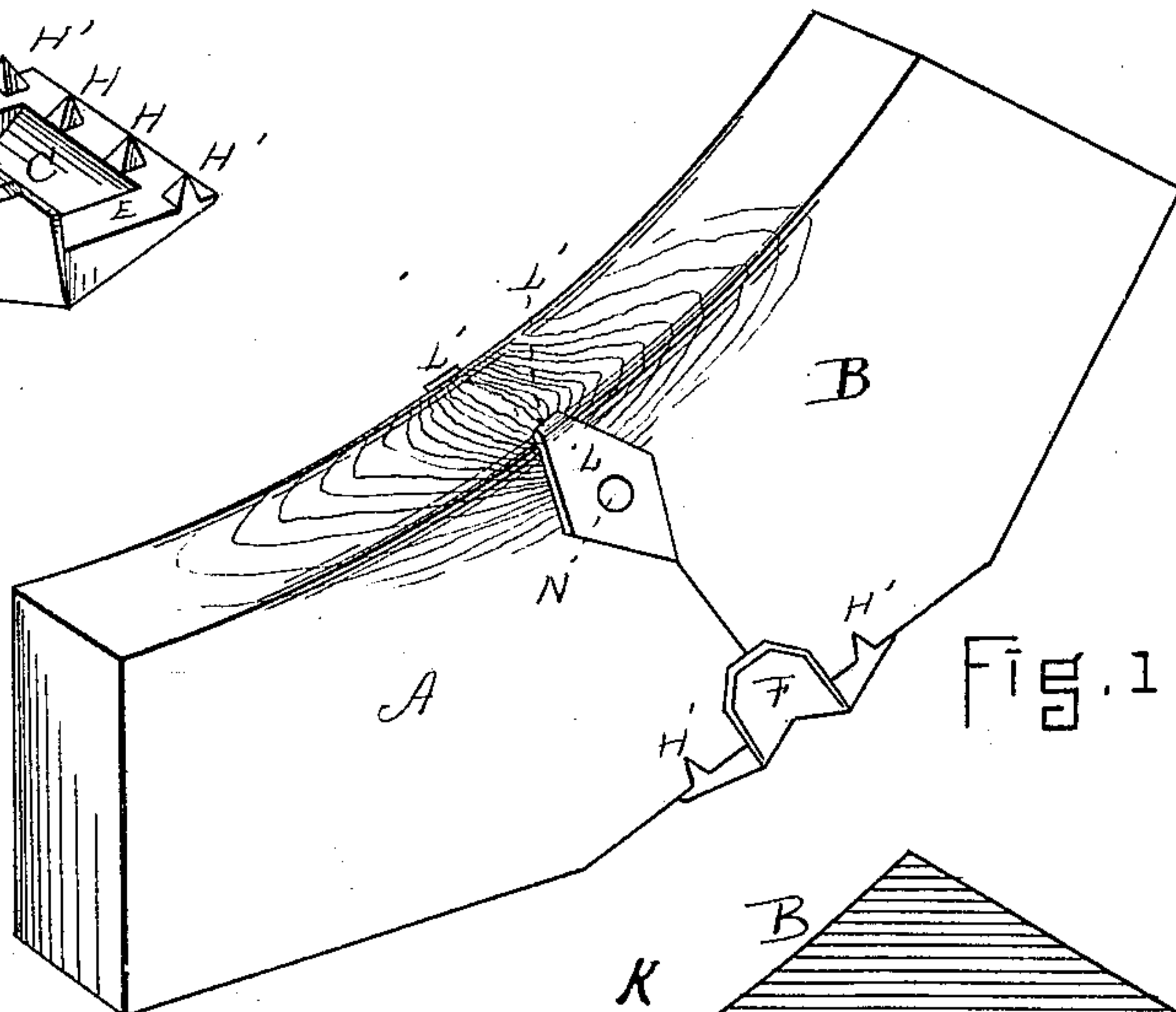


Fig. 1.

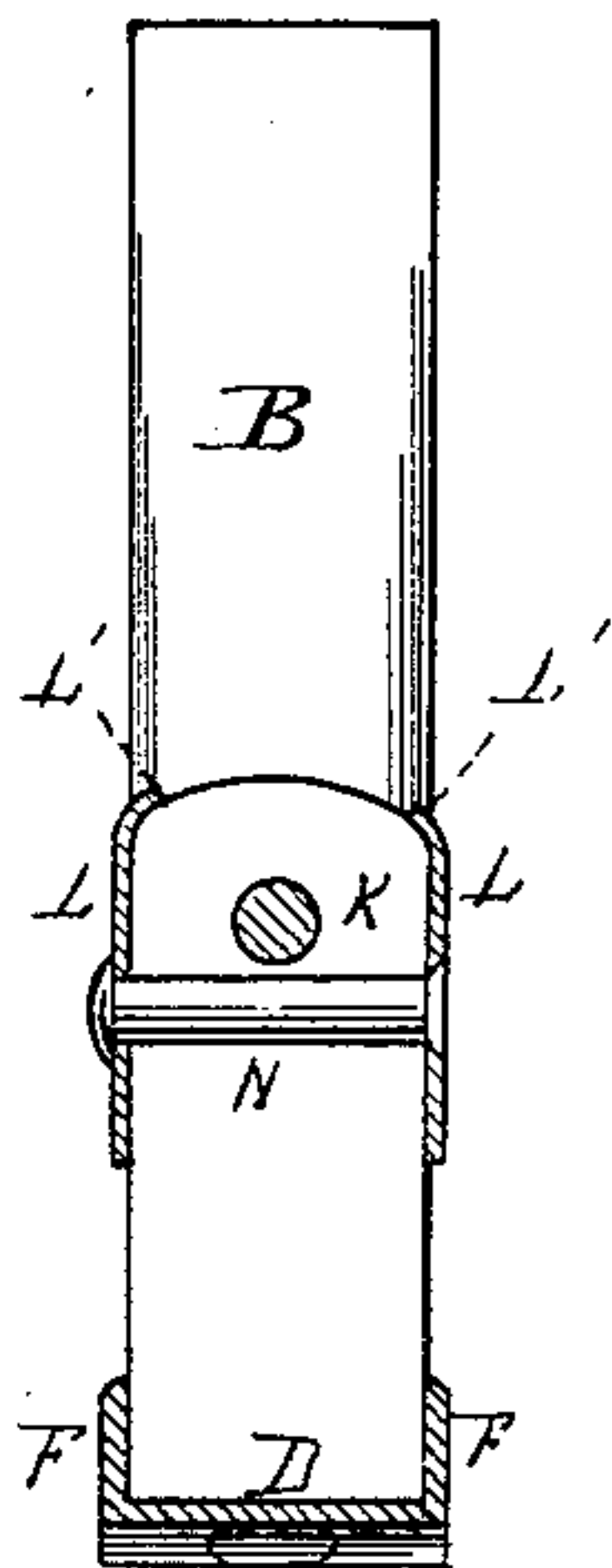


Fig. 3.

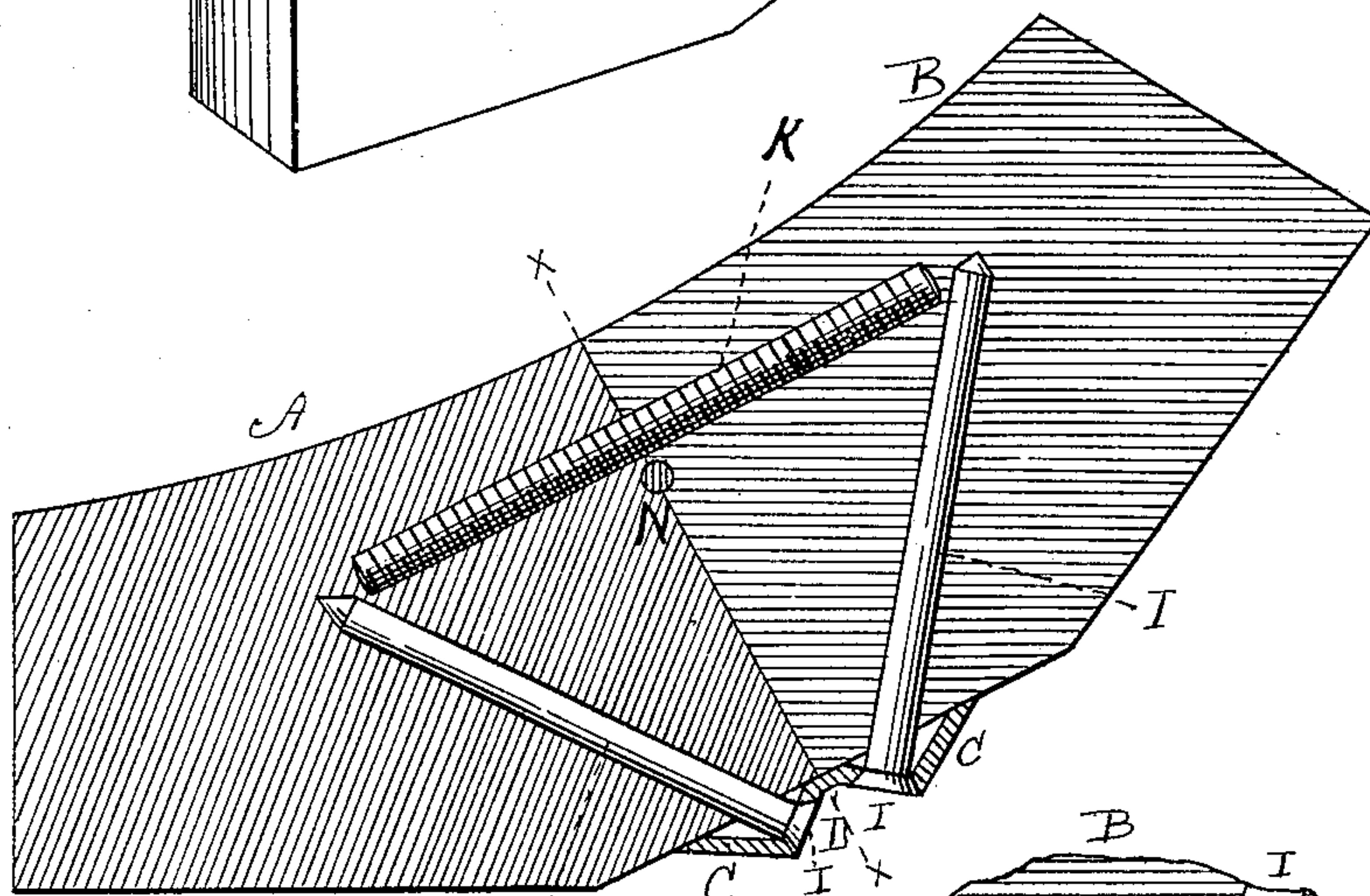


Fig. 2.

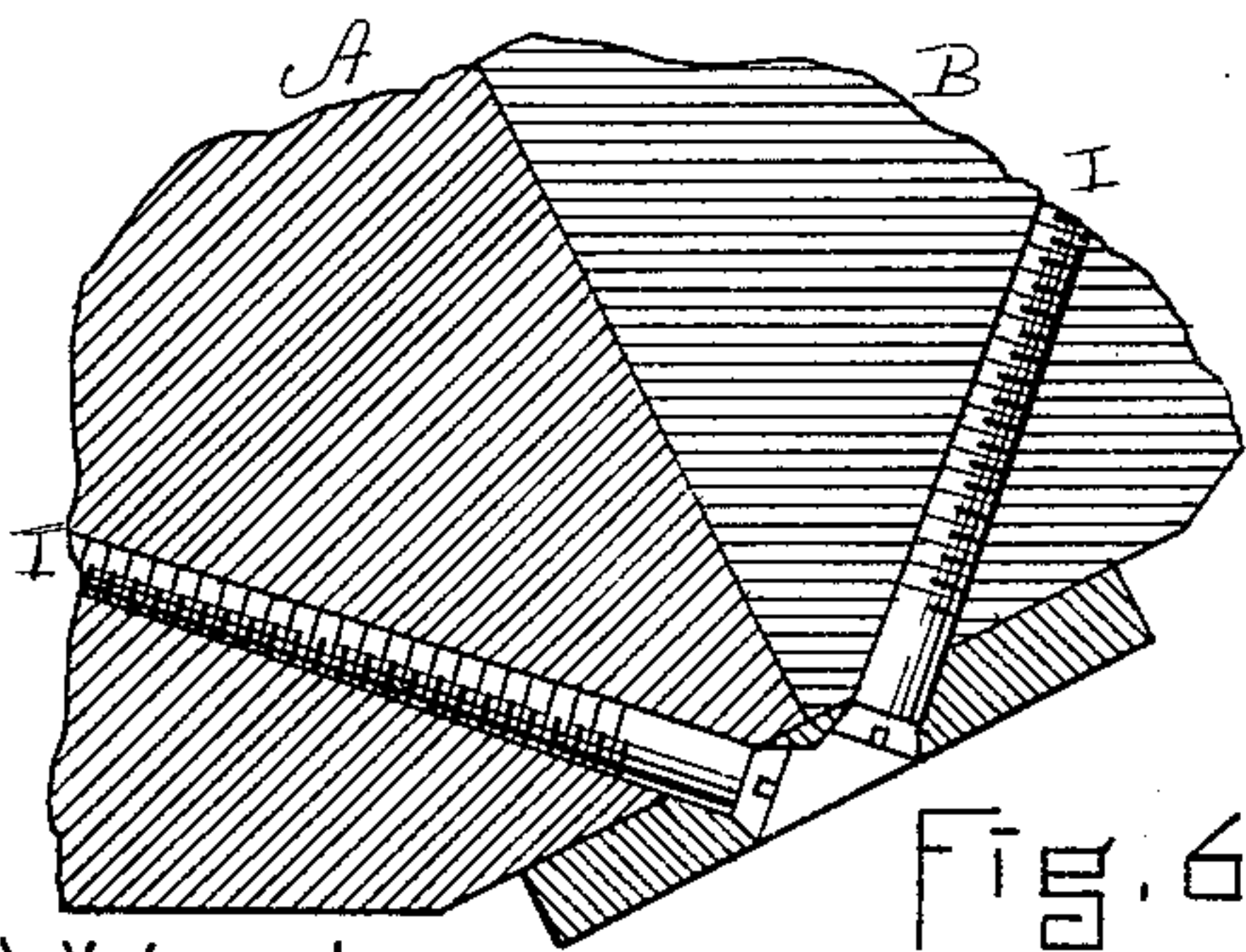


Fig. 6.

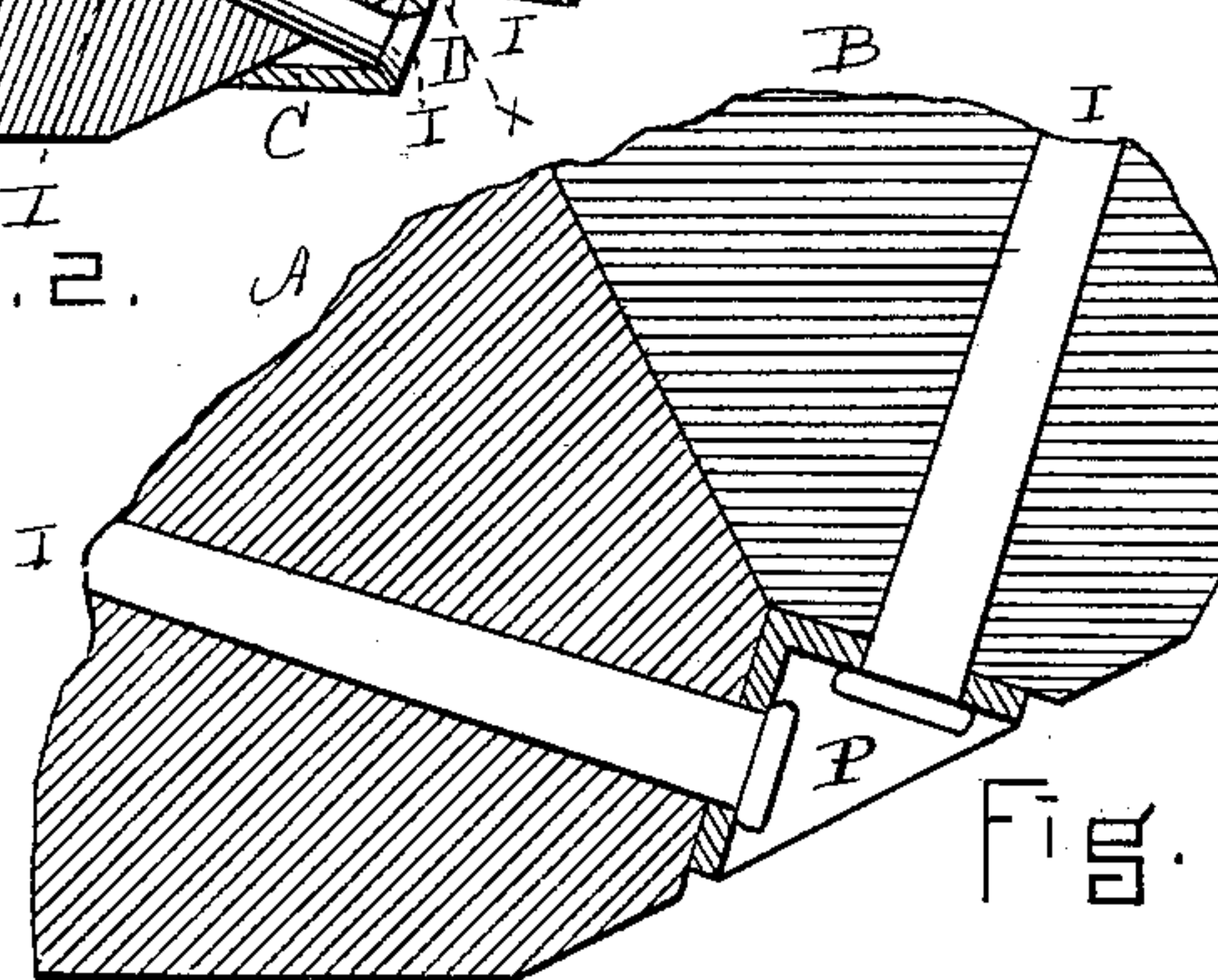


Fig. 5.

WITNESSES.

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BOAT-KNEE.

SPECIFICATION forming part of Letters Patent No. 371,644, dated October 18, 1887.

Application filed March 2, 1887. Serial No. 229,461. (No model.)

To all whom it may concern:

Be it known that I, DAVID TRUE, of Amesbury, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Boat-Knees, of which the following is a specification.

This invention relates to that class of boat-knees made in two (or more) parts and held together at the adjacent or adjoining portions of said parts, and is applied more particularly to knees used in the construction of dories and similar craft.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a view in perspective of a portion of a boat-knee embodying my invention. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a sectional elevation on line *x*, Fig. 2. Fig. 4 is a perspective view of the bottom or scupper-plate removed. Figs. 5 and 6 are enlarged sectional views of modifications.

A and B represent the two main portions of the knee meeting at the bend and held firmly and immovably together by the means below described.

At the bottom or scupper of the knee, and extending on each side of the joint, is placed a metallic plate of the form shown in Fig. 4. This plate in central longitudinal vertical section is substantially of the shape of two V's, C C, connected by a flat piece, D, which lies next the joint. The plate is strengthened by sides E, from which extend vertical lips F, which are hammered against the opposite sides of the knee at the joint. When force enough is applied to the knee to wrench it apart at the bottom, by forcing the two parts A B inward, the first effect is to split the knee longitudinally at the bottom or scupper. The lips F operate to counteract this tendency by pressing against the sides of the knee.

H H' are teeth projecting vertically into the knee at the bottom or scupper for the purpose of holding the two parts of the knee together. The outer teeth, H', in each series are made longer than the others, for the purpose of assisting in preventing the knee from splitting at the scupper in the manner above described.

I I are round nails driven into the two parts of the knee at angles which are on lines corresponding with the directions of the strain.

These nails pass through perforations C' in the bottom plate, such perforations being made in those parts of the plate which are at right angles to the lines of direction of the nails, thus providing even bearings for the heads of said nails.

Although I believe the angles in which the nails are placed to correspond as nearly as possible with the lines of direction of the strain when the knee has a tendency to be forced inward, I do not confine myself to those exact angles, as there are many angles between zero and ninety degrees at which the nails might be placed with beneficial results.

K is an internal screw placed near the upper side of the knee, and substantially parallel with the bottom or scupper, for the purpose of assisting in holding the two parts of the knee together, with special relation to that strain which would tend to straighten the knee or pull it apart on the upper side.

L L are washers, one of which is placed on each side of the knee at the joint and next the upper surface thereof.

N is a rivet extending through the knee from one washer to the other at the joint and located somewhat below the center of the washers, in order to avoid the screw K. The object of these washers is to counteract the tendency of the knee to split at the top from the strain, such tendency being, perhaps, aggravated by the fact that the screw K is driven into as small a bore as possible. The upper ends, L', of these washers are bent inward over the curved edge of the knee, as shown in Figs. 1 and 3, in order to prevent the ends of the two portions of the knee, which meet at that point, from being knocked or split off.

In the modification shown in Fig. 5 the scupper is cut out at about right angles, and a V-shaped plate is set into the same, having openings to receive the nails I and strengthening sides P.

Ordinary nails, rectangular in section, are used in place of the round nails shown in Fig. 2.

In Fig. 6 a simple flat plate is shown attached to the scupper, said plate being perforated at suitable angles to receive the screws I, which are shown in place of the round nails exhibited in Fig. 2.

I propose to use nails of any style, screws,

or other analogous devices capable of being driven into or inserted in the two portions of the knee in the position and at the angles shown and of being held by the bottom plate
5 extending across the joint.

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

1. The combination of the two portions A
10 B of a boat-knee, a bottom plate extending across the joint of said knee, and a fastening nail, screw, or analogous fastening device passing from said plate into one of said portions of the knee on a line which is at angles with the
15 line of the joint and the line of the bottom or scupper of the knee, substantially as and for the purpose set forth.

2. The combination of the two portions A
20 B of a boat-knee, a bottom plate extending across the joint of said knee, and two fastening nails, screws, or analogous fastening devices passing from said plate into the said portions A
25 B, each of said nails, screws, or analogous devices being on a line which is at angles with the line of the joint and the bottom or scupper of the knee, substantially as and for the purpose described.

3. The combination of the two portions A
30 B of a boat-knee, the bottom plate provided with the two V-shaped portions C C, having the perforations C' C', and the nails, screws, or analogous fastening devices I, substantially as and for the purpose set forth.

4. In combination with the two portions A
35 B of a boat-knee, a bottom or scupper plate provided with lips or ears F, extending up against the sides of the knee, substantially as and for the purpose set forth.

5. In combination with the two portions A
40 B of a boat-knee, the herein-described bottom or scupper plate provided with the perforated

V-shaped portions C C, central portion, D, sides E, and lips F, substantially as and for the purpose set forth.

6. The combination, with the two portions 45 A B of a boat-knee, of a bottom or scupper plate provided with series of points or projections H H', said outer projections, H', which are nearer the sides of the knee, being longer than said inner projections, H, which are nearer
50 the center of the knee, substantially as and for the purpose described.

7. The combination of the two portions A
55 B of a boat-knee, said portions being provided with rounded upper edges or corners next the joint, and side plates extending across the joint, said side plates having their upper ends bent over the rounded or curved edges of said knee, for the purpose of preventing the knock-
60 ing or splitting off of the wood at those points next the joint, substantially as and for the purpose set forth.

8. The combination of the two portions A
65 B of a boat-knee, said plates extending across the joint, a rivet extending through the knee from one plate to the other and placed upon the dividing line between said portions, and the internal screw, K, substantially as specified.

9. The combination of the two portions A
70 B of a boat-knee, the internal screw, K, side plates, L, extending across the joint, rivet N, passing through the knee from one to the other of said side plates, perforated bottom or scupper plate, C D E F H H', and screws, nails, or
75 analogous fastening devices I, extending upward into the knee through said plate, substantially as and for the purpose set forth.

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Witnesses:

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