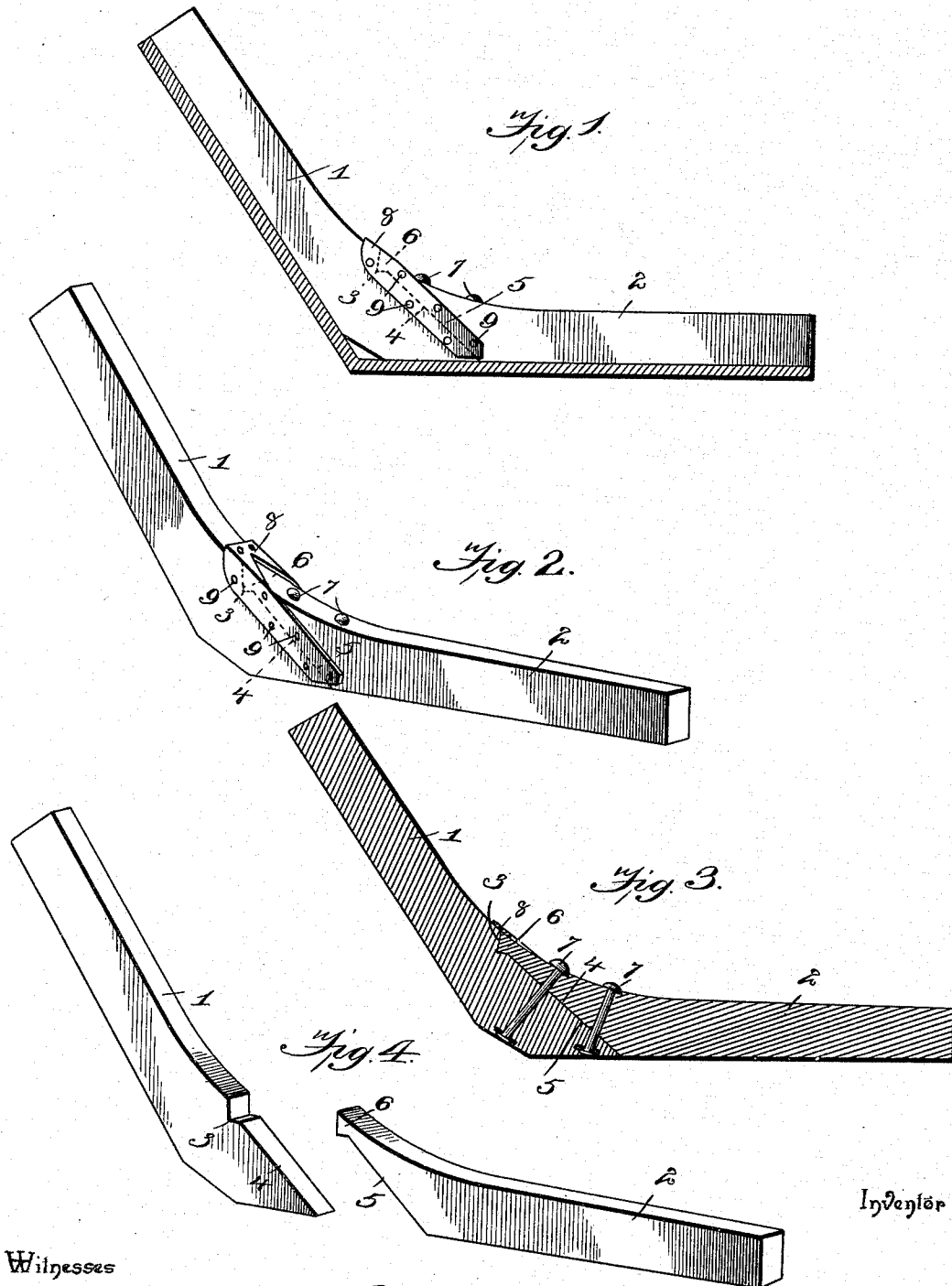


(No Model.)

A. J. NICKERSON.
BOAT KNEE.

No. 518,677.

Patented Apr. 24, 1894.



Witnesses

John C. Shaw
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By *his* Attorneys, *Admiral J. Nickerson*

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UNITED STATES PATENT OFFICE.

ADONIRAM J. NICKERSON, OF ARGYLE, CANADA.

BOAT-KNEE.

SPECIFICATION forming part of Letters Patent No. 518,677, dated April 24, 1894

Application filed September 26, 1893. Serial No. 486,569. (No model.)

To all whom it may concern:

Be it known that I, ADONIRAM J. NICKERSON, a subject of the Queen of Great Britain, residing at Argyle, in the county of Yarmouth and Province of Nova Scotia, Dominion of Canada, have invented a new and useful Boat-Knee, of which the following is a specification.

My invention relates to improvements in boats, and has special reference to the timbers thereof or knees; the objects in view being to improve these timbers so as to render them staunch and not liable to weaken at their joints, which usually occurs at the intersection of the bottom and sides of dories and other small boats. In this class of boats that are constantly contacting with wharves, sides of vessels, &c., the sides or gunwales are the first to yield and weaken by reason of such contact and the imperfect strengthening thereof. It is common to form the timbers, or knees, as they are called, in two pieces, the joint occurring at the intersection of the sides and bottom of the boat, so that all strain against the sides is immediately transferred to this joint. Various means have been provided for strengthening these joints, principally among which are metal castings applied to each side of the joint. These, in course of time, however, work loose, rendering the boat unworthy, and subsequently resulting in its total destruction. By my present invention, as will hereinafter appear, it will be seen that I overcome these difficulties, and without constructing the knee or timber any heavier, secure greater rigidity and durability in the same, and adapt it to withstand with success the severe strain to which it is subjected.

Referring to the drawings:—Figure 1 is a sectional view of a portion of a dory, the same being provided with a timber or knee constructed in accordance with my invention. Fig. 2 is a perspective view of the timber. Fig. 3 is a longitudinal sectional view; Fig. 4 details in perspective of the two sections, the same being disconnected.

Like numerals of reference indicate like parts in all the figures of the drawings.

In practicing my invention I employ the side-section 1 and the transverse bottom-section 2, and as their names would imply, they lie adjacent to the sides and bottom of the

boat. The side section 1 is greatly increased in width toward its end, as is usual, and at a point above the latter is notched angularly, as at 3, beyond which the edge of the section 1 is continued in a slanting line, as indicated at 4, the disposition of the said line being at a greater angle than is the inner edge of the section 1. The section 2 is provided at its opposite ends with inclined or cut away portions 5 that extend up to near the extremity of the section, at which point they are provided with angular tenons 6. The cut away ends 5 are designed to conform to and form a joint in connection with the inclined ends 4 of the sections 1 and likewise are the tenons 6 designed to fit within the angular recesses or mortises 3. After having assembled the two sections I insert through the same in a vertical manner two or more galvanized bolts 7, the same being headed upon their upper ends and provided upon their lower ends with washers. This may constitute the joint, but in order to strengthen the same still more and exclude water I preferably apply to the opposite sides of the knee thus formed strips 8 of sheet-metal, the said strips overlying the joint and being bolted thereto by transverse bolts or rivets 9. This completes the construction of the knee, and it will be seen at once that it is well adapted to withstand the lateral strain communicated thereto by the side wall of the boat as the same contacts with such objects as wharves, the sides of vessels, &c., and that the strain is all removed from the angle of the knee and distributed throughout the length of the knee, so that I avoid the usual looseness caused by the wrenching of the timbers at this point.

I do not limit my invention to the precise details of construction herein shown and described, but hold that I may vary the same to any degree and extent within the knowledge of the skilled mechanic.

Having described my invention, what I claim is—

1. The herein described improved boat timber or knee, the same consisting of the inclined side-section 1 and transverse bottom section 2, the same overlapping each other and one side of the angle thereof; the bolts passed through the sections at their overlapping ends,

and sheet metal strips applied to the opposite sides of the joint and bolted by transverse bolts to the sections, substantially as specified.

2. The herein described improved boat timber or knee, the same consisting of the section 1 provided at its inner edge near its lower end with the angular mortises 3, and below the same with the inclined cut-away portion 4, the transverse bottom section 2 having its outer end upon its under side cut away, as at 5, to conform to the inclined cut away portion 4 of the section 1, and upon this cut away portion 5 provided with the angular tenon 6 for engaging the mortise 3, and the bolts 7 passed through the two sections, substantially as specified.

3. The herein described improved boat timber or knee, the same consisting of the section 1 provided at its inner edge near its lower

end with angular mortise 3 and below the same with the inclined cut away portion 4, the transverse bottom section 2 having its outer end upon its under side cut away as at 5 to conform to the inclined cut away portion 4 of the section 1 and upon this cut away portion 5 provided with the angular tenon 6 for engaging the mortise 3, the bolts 7 passed through the two sections, and the sheet-metal strips 8 applied to the opposite sides of the knee and overlapping the joint and bolted to the said sections, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ADONIRAM J. NICKERSON.

Witnesses:

ARTHUR ROGERS,
THOMAS E. CORNING.