

E. L. M. SIVARD.
BOAT CONSTRUCTION.
APPLICATION FILED AUG. 10, 1909.

986,411.

Patented Mar. 7, 1911.

2 SHEETS—SHEET 1.

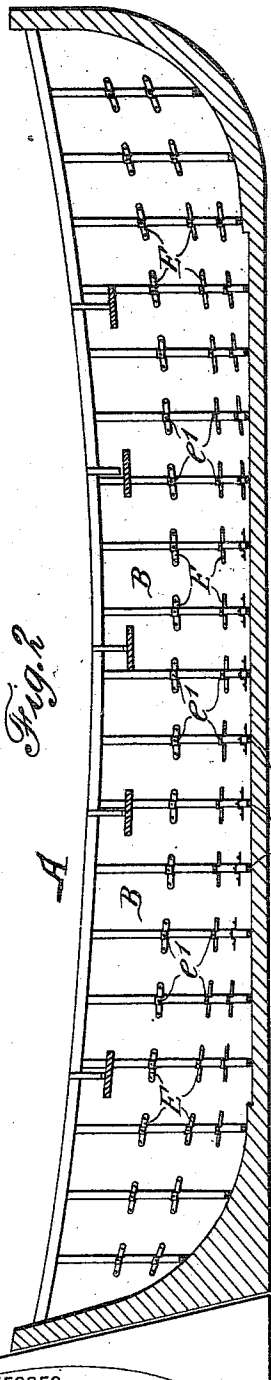
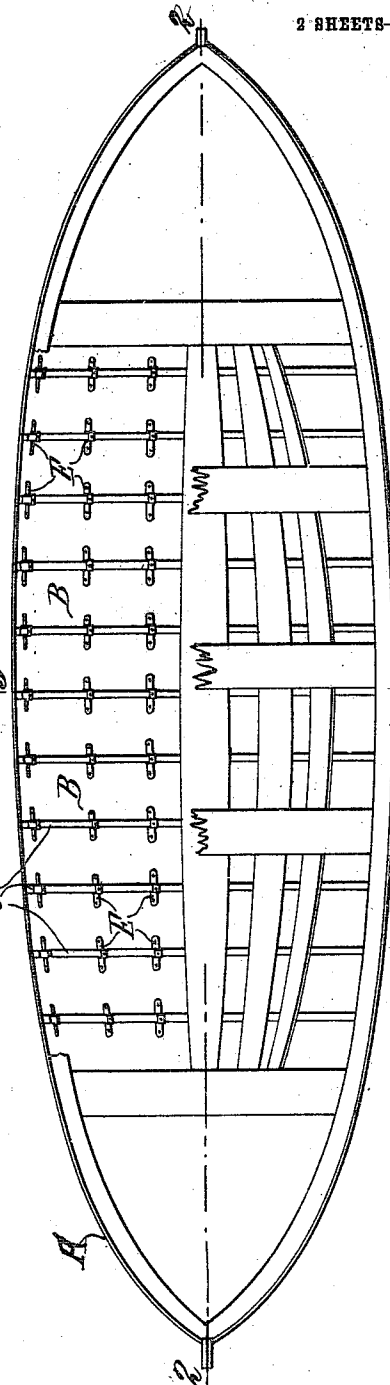


Fig. 2

Fig. 1



WITNESSES:

Jos. D. O'Brien
J. J. O'Dermott.

INVENTOR

Einar L. M. Sivard

BY

R. S. E. Star

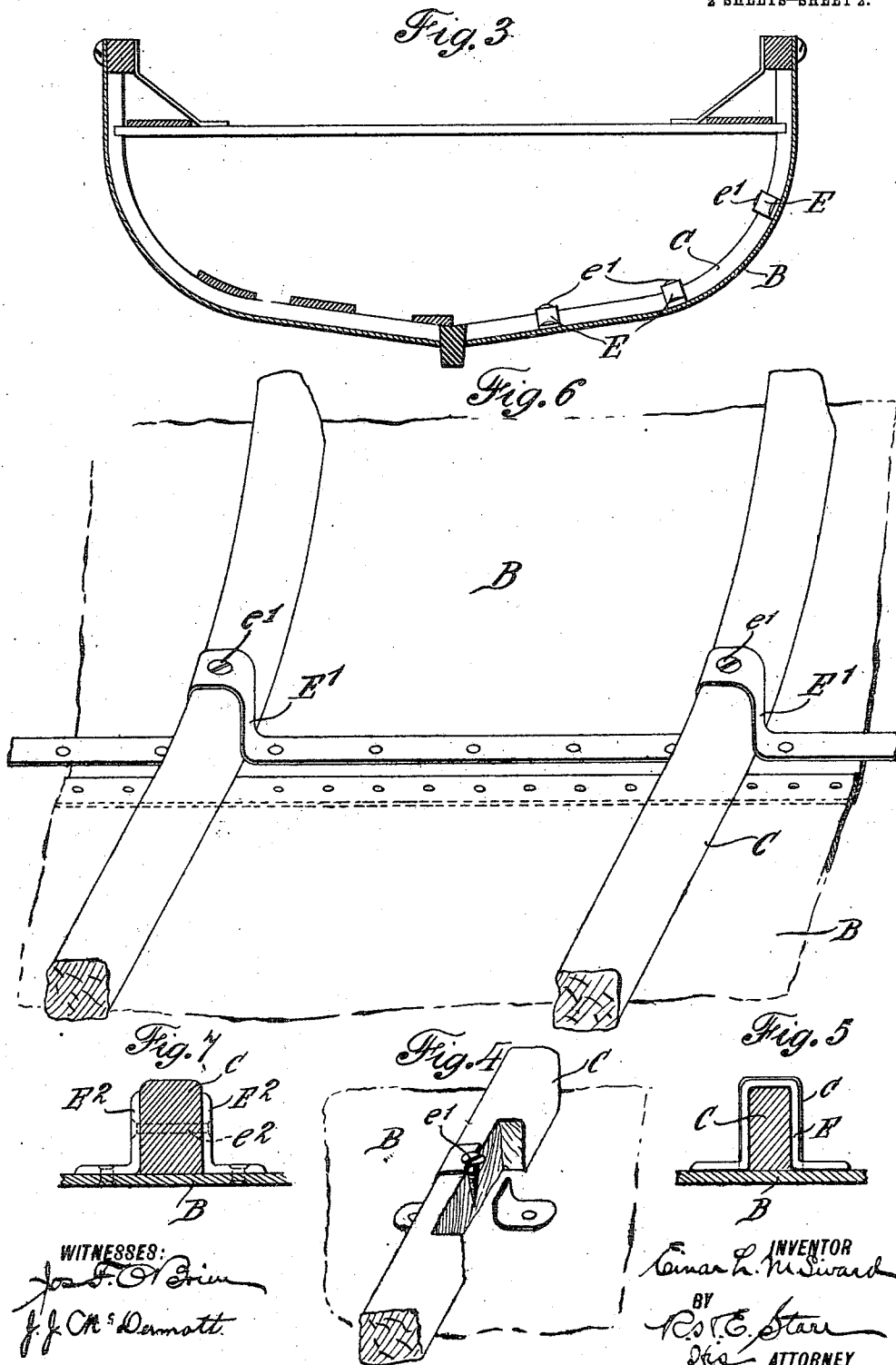
His ATTORNEY

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UNITED STATES PATENT OFFICE.

EINAR L. M. SIVARD, OF BROOKLYN, NEW YORK, ASSIGNOR TO WELIN DAVIT AND LANE & DE GROOT COMPANY, CONSOLIDATED, A CORPORATION OF NEW YORK.

BOAT CONSTRUCTION.

986,411.

Specification of Letters Patent.

Patented Mar. 7, 1911.

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To all whom it may concern:

Be it known that I, EINAR L. M. SIVARD, a subject of the King of Sweden, and residing in the borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Boat Construction, of which the following is a full, clear, and exact description.

10 This invention relates to improvements in boat construction and particularly to that class of boats having an outer metal plating and inner ribs of lighter material, such as wood.

15 It is well known that when wooden ribs and metal plating of a boat are directly connected together by passing a rivet through both, corrosion takes place at the joint and a leak occurs. By the use of my invention, the metal plating and laterally extending ribs of the boat are firmly secured together by means of metallic stay-pieces, which hold the ribs firmly in place against the metal plating and form a metal to metal joint with the plating, thereby avoiding the possibility of leaks. In the preferred form of my invention, each of these stay-pieces is connected to the metal plating at each side of the rib by riveting or in any other suitable manner and preferably spans or bridges the rib, thereby obtaining the full stiffening and strengthening effect of the rib and plating and preventing displacement or undesirable movement of such ribs in any direction.

I will now describe preferred embodiments of my invention and then point out the novel features in claims.

In the accompanying drawings in which similar characters designate corresponding parts throughout the several views, Figure 1 is a plan view partially broken away showing a boat embodying my invention; Fig. 2 is a longitudinal section on the line 2—2 of Fig. 1; Fig. 3 is a transverse section on the line 3—3 of Fig. 1; Fig. 4 is an enlarged view of a fragment of the ribs and plating, showing my preferred form of stay-piece; Fig. 5 is a sectional view of a modified form of stay-piece, and Fig. 6 is a view similar to Fig. 4 of another modified form, and Fig. 7 is a sectional view of another modified form.

Referring now to these drawings, A designates a boat as a whole, B the outside

metallic plating, and C the ribs thereof constructed of wood or similar light material.

In the preferred embodiment of my invention shown in Figs. 1 to 4, inclusive, the metal plating is secured to each rib at a plurality of places by means of a metallic stay-piece or strip E connected at each side of the rib to the metal plating and spanning the said rib. I preferably secure one or more stay-pieces to each separate metal plate of the outer plating at one or more points where such plating comes in contact with the ribs. It will readily be seen that the rib is thus held firmly in place, and I secure a tight metal-to-metal joint, which will not corrode and leak, as would be the case if the rib were riveted or otherwise secured directly to the plating, or, in other words, if a rivet or other fastening device were passed directly through the wood into the plating, nor will any strain on the boat which might shift or bend the ribs, such as that caused by rowing, materially affect or open up such joints, or cause a material separation of the ribs and plating. I also preferably fasten the ribs and stay-piece together by means of a screw e^1 which, as will be seen, does not penetrate the metal plating. This connection between the stay-piece and rib secures the rib against excessive longitudinal movement resulting from any cause. This purpose might be accomplished, however, by grooving the rib and having the stay piece fit into such groove, and I have illustrated such a construction in Fig. 5.

In Fig. 6, I have shown a construction where the stay-pieces E^1 for the various ribs are in the form of a continuous strip riveted to the plating and spanning or bridging the ribs and independently connected to the ribs at such spanning portion in the same manner as heretofore described in regard to Figs. 1 to 4. In the construction shown in Fig. 7, such stay-pieces comprise two upwardly-projecting lugs E^2 E^2 extending only part of the distance to the top of the rib and connected together by a rivet e^2 passing transversely through the rib from one side to the other. In any event, whether my preferred or a modified form be used, a plurality of stay-pieces are preferably employed to secure the rib and plating at different points along the length of the rib, as illustrated in Figs. 1, 2

and 3, and preferably each individual metal plate of the outer plating will be separately secured to the ribs by one or more of these stay-pieces.

5 As my improved boat construction above described, enables the full stiffening and strengthening effect of the ribs and plating combined to be obtained, a fewer number of individual metal plates than would otherwise
10 be necessary to obtain the required degree of strength and stiffness may be employed, that is to say, larger plates with the seams spaced farther apart may be employed to obtain the same degree of strength and stiff-
15 ness which is at present obtained by using smaller plates and a greater number of seams, and expense and labor will, therefore, be saved by the use of my invention. This is especially true if the form of stay-
20 piece shown in Fig. 7 is employed.

Having described my invention, I claim:

1. In boat construction, the combination with an outer metallic plating, and a series of transverse wooden ribs, of a plurality of

metal stay-pieces for each rib, each con- 25 nected with the plating, bearing against the rib, and permanently securing such rib to the plating at a plurality of places along its length, whereby the combined stiffening and strengthening effect of the wooden ribs and
30 metal plating is obtained.

2. In boat construction, the combination with an outer metallic plating and transverse wooden ribs, of metallic stay-pieces located at a plurality of places along each
35 rib and permanently securing the rib and plating together, each stay-piece comprising a metallic strip connected to the metal plating at each side of the rib, spanning the same and also having an independent connection
40 with the rib alone.

In witness whereof, I have signed my name to the foregoing specification in the presence of two subscribing witnesses.

EINAR L. M. SIVARD.

Witnesses:

JOSEPH F. O'BRIEN,

R. V. FINN.