

No. 819,784.

PATENTED MAY 8, 1906.

W. H. MULLINS & W. C. HARE.
METALLIC BOAT.

APPLICATION FILED DEC. 28, 1904

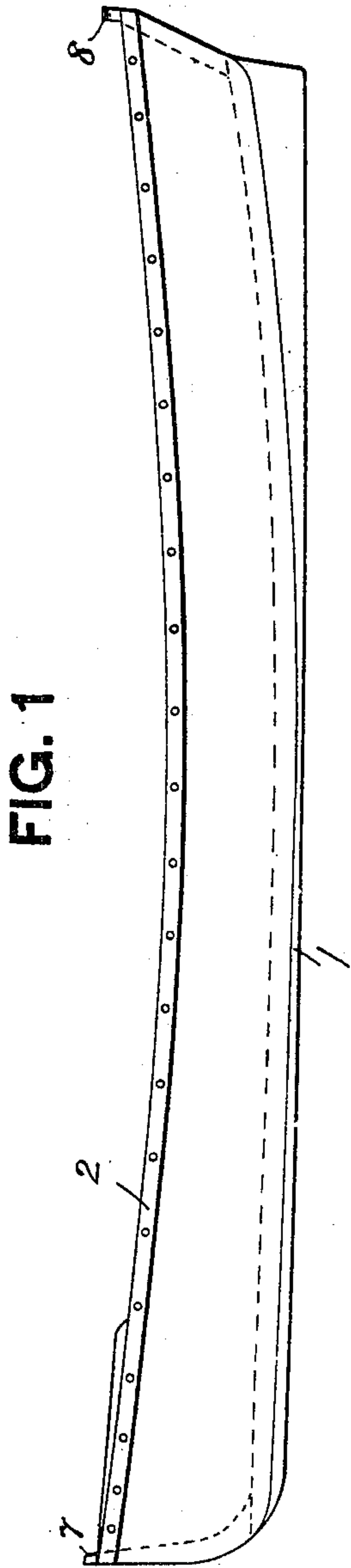


FIG. 1

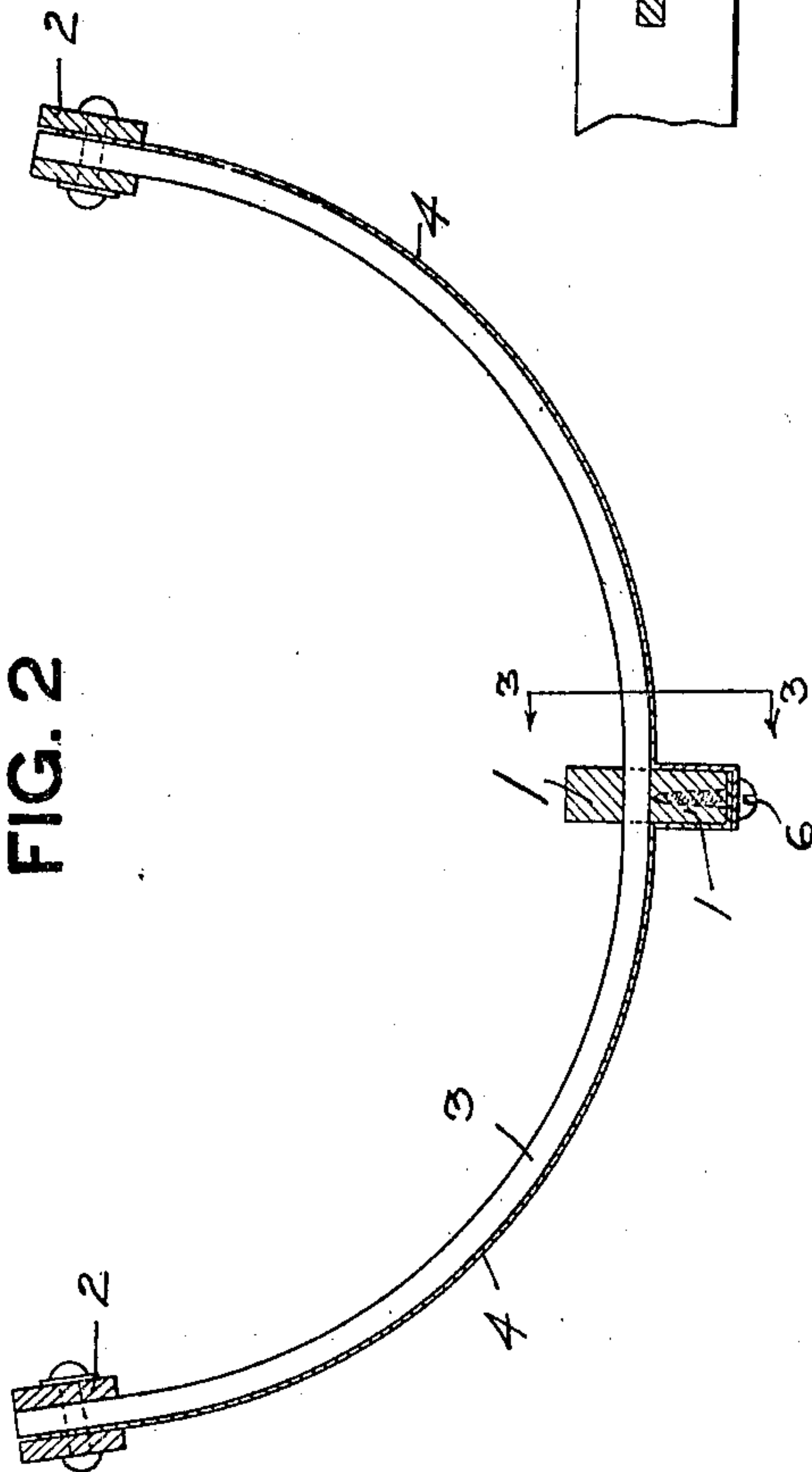


FIG. 2

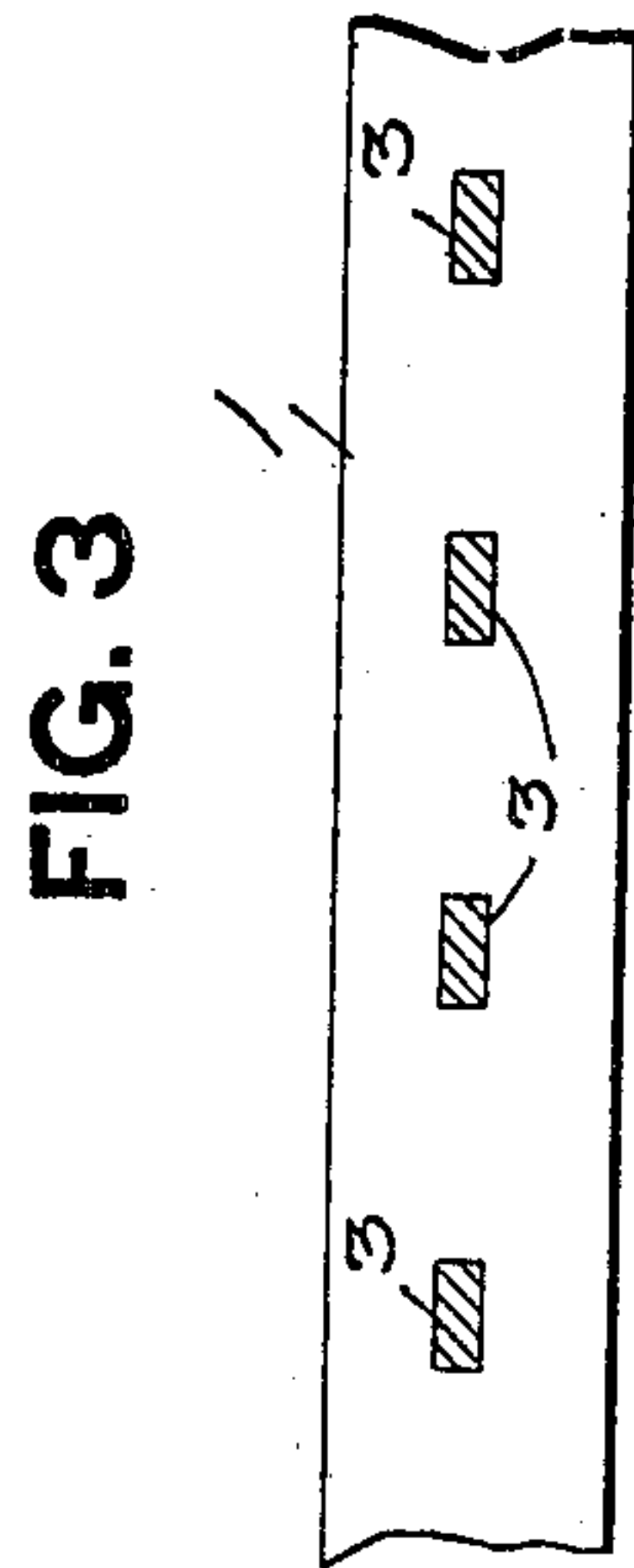


FIG. 3

WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM H. MULLINS AND WILL C. HARE, OF SALEM, OHIO.

METALLIC BOAT.

No. 819,784.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed December 28, 1904. Serial No. 238,623.

To all whom it may concern:

Be it known that we, WILLIAM H. MULLINS and WILL C. HARE, residents of Salem, in the county of Columbiana and State of Ohio, have invented a new and useful Improvement in Metallic Boats; and we do hereby declare the following to be a full, clear, and exact description thereof.

Our invention relates to boats and ships, and more especially to motor and other high-speed boats.

The object of our invention is to improve the construction of such vessels, so that the vibration to which they are subjected will not be communicated to the shell or outer plating.

As heretofore constructed boats have always been built with the shell or plating securely screwed, riveted, or otherwise attached to the skeleton or framework of the boat. With many forms of boats, and especially motor and other high-speed boats, difficulty has been experienced because the vibration to which the framing is subjected is communicated directly to the shell or plating and not only opens up the seams thereof, but also communicates the vibration to the surrounding water, so that there is a loss of energy in putting the water into vibration, with a corresponding loss of speed.

The object of our invention is to improve the construction of boats so that the foregoing difficulties are overcome.

To this end it consists in having the shell or plating entirely independent of the ribs and greater portion of the framework, the shell being fastened only at the top and bottom—that is, along the keel and gunwales and of course on the bow-piece and stern-post, which are continuations of the keel. As a result the vibration to which the frame is subjected will not be communicated to the shell or plating, the liability of opening up the seams of the latter is largely avoided, and no vibration is set up between the shell and water, so that the boat slides more smoothly and swiftly through the water.

In the accompanying drawings, Figure 1 is a side view of a small boat having a metallic plating or shell. Fig. 2 is a cross-section through the same, showing the manner of securing the shell according to our method; and Fig. 3 is a detail section on the line 3 3, Fig. 2.

Our invention is applicable to any form of boat or ship, from the smallest boat to the

largest ship, but is of special value for light-weight or high-speed motor and similar boats—such as motor racing-boats, torpedo-boats, and others of a similar character—which must be light in weight and driven at a high speed. In the drawings the invention is shown as applied to a small-sized boat; but this is merely for ease of illustration, and it will be understood that the principle is not limited to small-sized boats.

The frame of the boat may be constructed in any desirable manner and of any suitable material, that shown in the drawings having a framing composed of the keel 1, gunwales 2, and ribs 3, connecting the keel and gunwales. All of these parts are shown as made of wood; but obviously this is immaterial, as an iron or other metal frame may be used instead. The manner of connecting together these parts also can be varied within wide limits. In the specific form shown in the drawings the ribs pass through openings cut through the keel and extend continuously from one gunwale to the other. This obviously is a matter of choice.

The shell or plating is shown at 4, and this may be either metal or some other suitable material. Heretofore such shells have been securely fastened to the framework not only along the keel and gunwale, but also along the ribs. According to our present improvement the shell or plating is practically independent of the framework, being secured only at the gunwales and keel, and along continuations of the keel, such as the bow-piece 7 and stern-post 8. Fig. 2 makes this clear, the upper edges of the shell members being clamped between the gunwale members, while the lower edges thereof are bent and lapped over the keel and one over the other and secured thereto by any suitable means, such as the screws 6. With our construction preferably each half of the hull or body of the boat will be covered by a single sheet of metal or other material, which may be made of several plates joined together so that there will be no open seams from end to end. The only seam will be at the keel and its continuations; but inasmuch as the shell is not attached to the ribs the vibration of the frame will not be communicated to the shell, and as a consequence there will be little or no danger of the seam at the keel opening.

The details of construction of the boat and shell may be varied within wide limits and to suit individual conditions or tastes. The es-

5 sential feature of the invention is a boat construction in which the shell or plating is practically independent of the frame and fastened to the latter only at the top and bottom and bow and stern ends.

What we claim is—

1. In a motor-driven boat, the combination of a permanent rigid frame comprising a lower central longitudinal member or keel, 10 top side members, and a shell covering said frame and secured to the side and lower central members only.

2. In a motor-driven boat, the combination of a permanent rigid frame comprising a 15 lower central longitudinal member, top side members, and a metal shell or plating covering said frame and secured to the central bottom and side members only.

3. In a motor-driven boat, the combination of a permanent rigid frame comprising a 20 keel, gunwales, and connecting-ribs, and a shell covering said framing and secured thereto at the keel and gunwales only.

4. In a motor-driven boat, the combination of a permanent rigid frame comprising a 25 keel, gunwales and connecting-ribs, and a

metal shell covering said frame and secured thereto at the keel and gunwales only.

5. In a boat, the combination of a frame comprising a lower central longitudinal member or keel, and top side members, and a shell or plating covering said frame and comprising two sections extending from the gunwales to the keel and overlapped at the latter and secured to the framing at the gunwales and 30 keel only. 35

6. In a motor-driven boat, the combination of a permanent rigid frame comprising a keel and a bow-piece and stern-pieces forming continuations thereof, gunwales and connecting-ribs, and a metal shell covering said 40 frame and secured thereto at the gunwales and keel and bow-piece and stern-piece only.

In testimony whereof we, the said WILLIAM H. MULLINS and WILL C. HARE, have 45 hereunto set our hands.

WILLIAM H. MULLINS.
WILL C. HARE.

Witnesses:

J. H. BLACKBURN,
F. J. MULLINS.