W. E. McNEILLIE, Jr.

HULL CONSTRUCTION.

APPLICATION FILED OCT. 25, 1909.

984,285.

Patented Feb. 14, 1911.

2 SHEETS—SHEET 1.

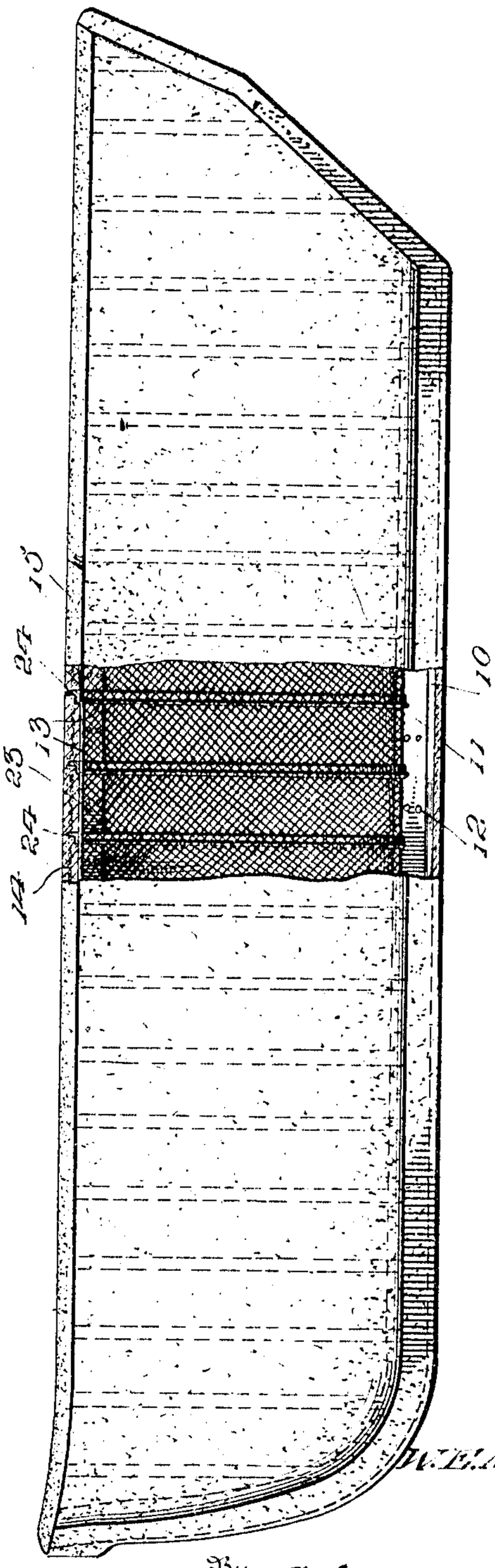


FIG. 1.

Witnesses
W. H. Woodson,
Juana M. Fallin,

Inventor
W. E. McNeillie, Jr.

By Wm. H. Lacey, Attorneys.

W. E. McNEILLIE, Jr.

HULL CONSTRUCTION.

APPLICATION FILED OCT. 25, 1909.

984,285.

Patented Feb. 14, 1911.

2 SHEETS—SHEET 2.

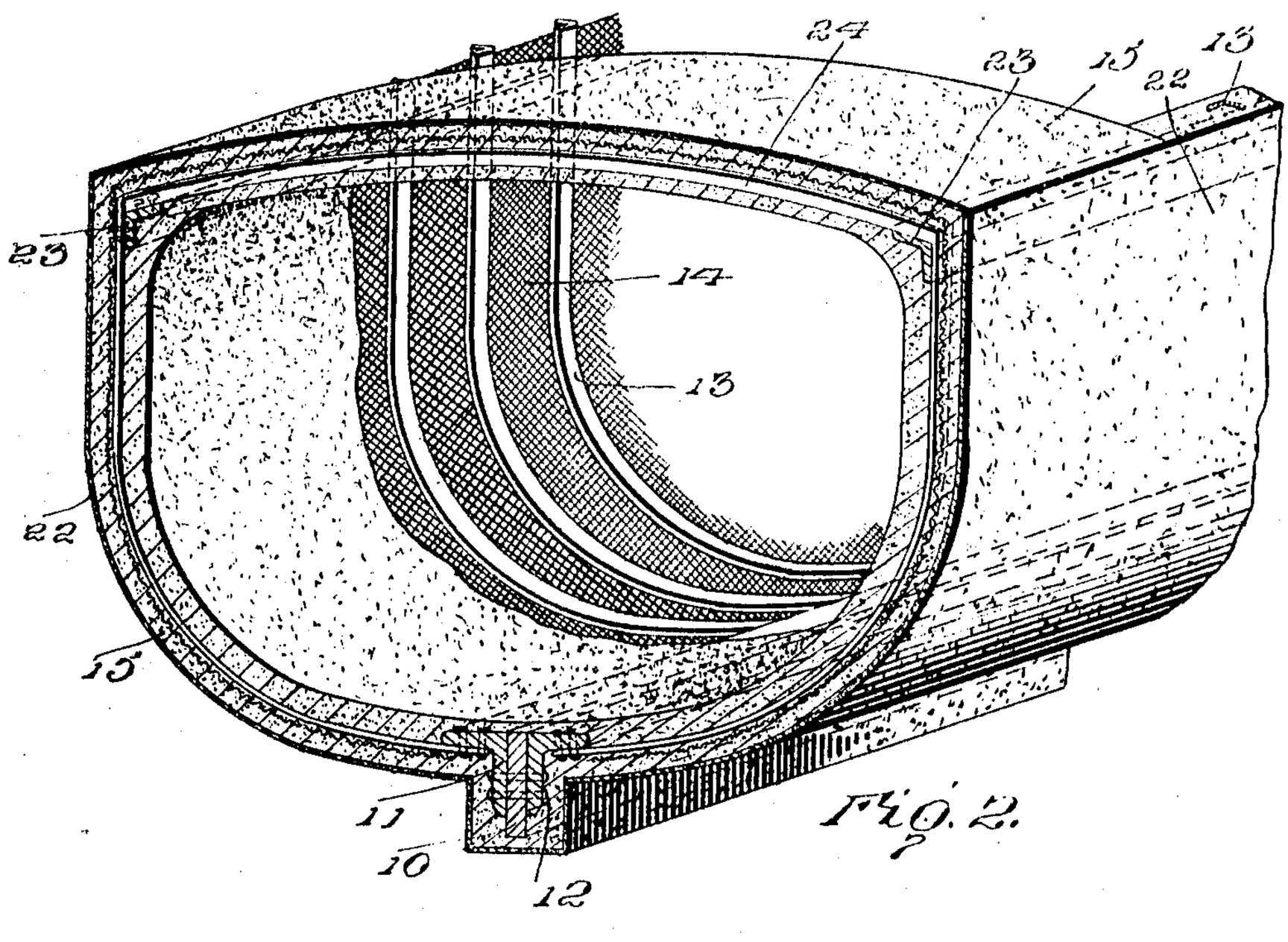


FIG. 2.

FIG. 3.

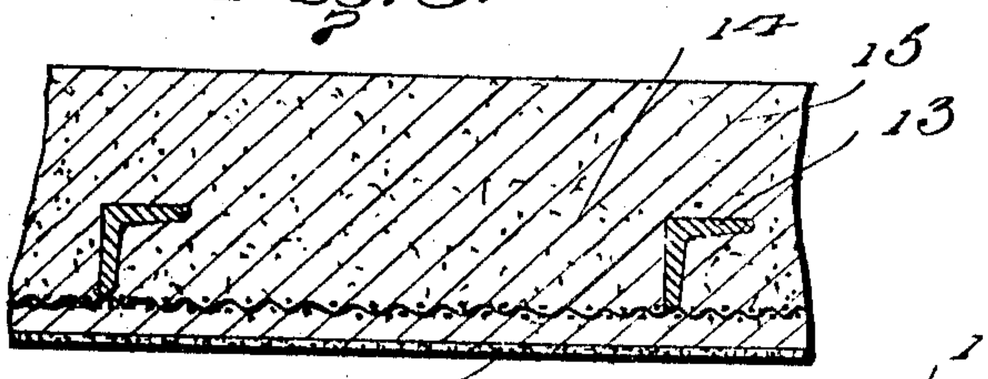
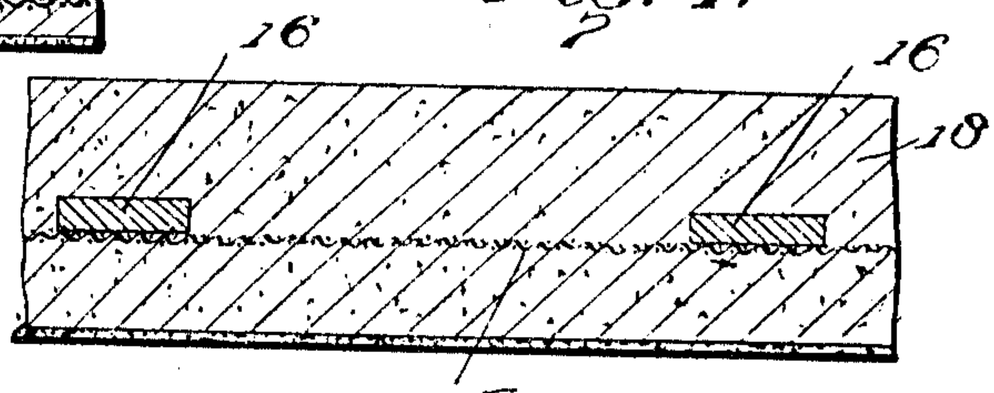


FIG. 4.



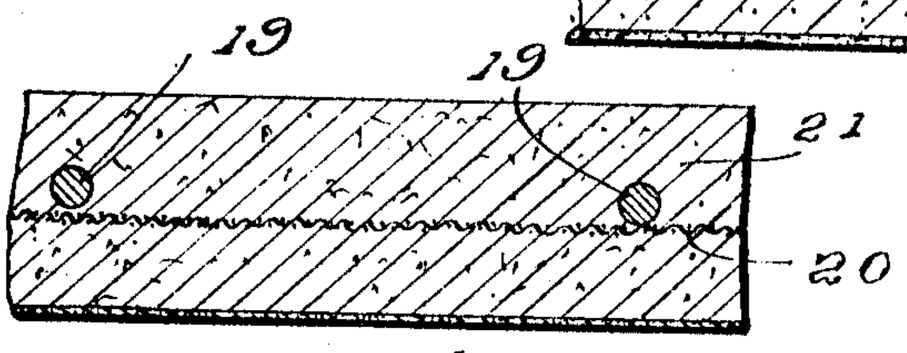


FIG. 5.

Witnesses

W. T. Woodson,

Juana M. Fallin,

Inventor

W. E. McNeillie, Jr.

By Howson & Howson, Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM EDWARD McNEILLIE, JR., OF NEW ROCHELLE, NEW YORK.

HULL CONSTRUCTION.

984,285. Specification of Letters Patent. Patented Feb. 14, 1911.

Application filed October 25, 1909. Serial No. 524,481.

To all whom it may concern:

Be it known that I, WILLIAM E. McNEILLIE, Jr., a citizen of the United States, residing at New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Hull Constructions, of which the following is a specification.

This invention relates to marine vessels and refers particularly to a peculiar construction in the hulls of the same.

An object of this invention is to arrange a body of concrete and reinforcement for the same whereby the hulls of vessels may be constructed from such material.

The invention has for another object the provision of a reinforcement for concrete hulls wherein the elements which comprise the same are so arranged as to receive and ably sustain the pressure which is exerted thereupon, and also to form a hull which is capable of carrying considerable weight.

A further object of this invention is to form an integral hull and deck of concrete or like plastic material which is molded about an improved reinforcement which is so constructed that frames for hatches, and the like may be rigidly secured in position.

The invention has for a still further object the provision of a concrete hull which enables the forming of the hull in the usual manner so that the same is adaptable for vessels of various types.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a side elevation of the hull partly in section to disclose the frame and the metallic meshing. Fig. 2 is a fragmentary and sectional perspective view of the improved hull. Fig. 3 is a horizontal section through a portion of the hull, Fig. 4 is a view of the same disclosing a slight modified form of the ribs employed, and Fig. 5 is a similar view disclosing a still further modified form of the ribs.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

Referring specifically to the drawings, the improved hull is formed of a keel which is reinforced by a longitudinal beam 10, having disposed against its opposite faces angle irons 11. The angle irons 11 are secured to the beam 10 through the medium of rivets 12 which are engaged through the members at frequent intervals throughout the lengths of the same.

As will be noted in Fig. 2 one of the flanges of each of the angle irons 11 is engaged against the face of the beam 10, while the opposite flange is extended from the beam 10 and at right angles thereto, the outwardly extending flange being disposed in flushed relation with the upper edge of the beam 10. The angle irons 11 are provided with a plurality of ribs 13 which are formed, preferably, of angle iron, and which are secured at their lower extremities against the under faces of the out-turned flanges of the angle irons 11. The ribs 13 are disposed in equi-distantly spaced relation throughout the lengths of the angle irons 11 and form the body of the hull. In order to conform the hull to the common construction the ribs 13 are curved outwardly as is disclosed in Fig. 2 and may be formed in any suitable manner to provide hulls for various types of vessels.

The ribs 13 carry across their upper ends angle beams 23 which extend the entire length of the hull and which are so disposed that the horizontal flanges of the same are directed inwardly and are flushed with the upper extremities of the ribs 13. A plurality of girders 24 are engaged across the beams 23 and are secured at their ends upon the horizontal flanges of the beams 23. The ribs 13 and the girders 24 are provided with a metallic meshing 14, which is preferably a wire meshing, and which is engaged against the outer faces of the ribs and girders, and extending the entire length of the hull. The metallic meshing 14 in conjunction with the ribs 13 and girders 24 support a body of concrete 15 which is molded against the opposite sides of the same and provides the wall and deck of the hull. The body of concrete 15 may be formed into any desired thickness according to the strength and weight desired in the hull construction. For the purpose of protecting the outer surface of the body of concrete 15, a water-proofing substance, consisting of paraffin, glue, or the like is placed against the outer face of the body of concrete 15 to form a protective sheet 22, through the medium of hot irons or the like, as is usual in the hull construction.

In Fig. 4 a slight modification is disclosed

in which the ribs or frame is shown as being formed of flat bars curved into the desired formation and carrying the metallic meshing 17 against the outer faces for the support of the body of concrete 18. Fig. 5 shows a still further modified form of the ribs 19 in which the same are formed from rounded bars and which support across their outer faces the meshing 20 for carrying the body of concrete 21.

It will be observed that in the construction of the hull, each of the ribs is diverged outwardly from the keel and that the ribs are disposed in pairs to form rigid braces for amply supporting the pressure which is exerted against the outer face of the wall of the hull. The keel of the hull is formed by molding the body of concrete 15 about the beam 10 and angle irons 11, whereby a continuous integral wall is formed throughout the entire length of the keel. The stem and the run of the hull are formed by simply curving the beam upwardly at its opposite ends in the desired angle and of shortening the ribs 13 in accordance with the points of contact between the same and the angle irons 11. In this manner the hull is formed of practically one piece so that a rigid and strong structure is provided.

Having thus described the invention what is claimed as new is:—

1. A hull construction including a longitudinal beam, angle irons carried against the opposite sides of the longitudinal beam, curved ribs secured in longitudinal spaced relation to the angle beams and extending upwardly and outwardly in pairs therefrom, longitudinal angle beams carried across the upper ends of the ribs and against their inner faces, transverse girders disposed between the upper ends of the ribs and secured to the angle bars, a metallic meshing arranged about the ribs and the girders, and a body of concrete molded against the opposite sides of the meshing.

2. A hull construction including a longitudinal beam, angle irons secured against the opposite sides of the beam and having their outturned flanges registering with the upper edge of the beam, a plurality of curved ribs secured in longitudinal spaced relation against the angle iron and extending upwardly therefrom, angle beams carried across the upper ends of the ribs and extending inwardly from the same, arched girders transversely disposed across the upper ends of the ribs and secured at their opposite ends upon the angle beams, a wire meshing secured against the outer faces of the ribs and the girders, and a body of concrete molded about the meshing to engage the ribs and the girders.

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

WILLIAM EDWARD McNEILLIE, JR. [L. S.]

Witnesses:

WM. E. McNEILLIE,

HELEN McNEILLIE.