

(No Model.)

2 Sheets—Sheet 1.

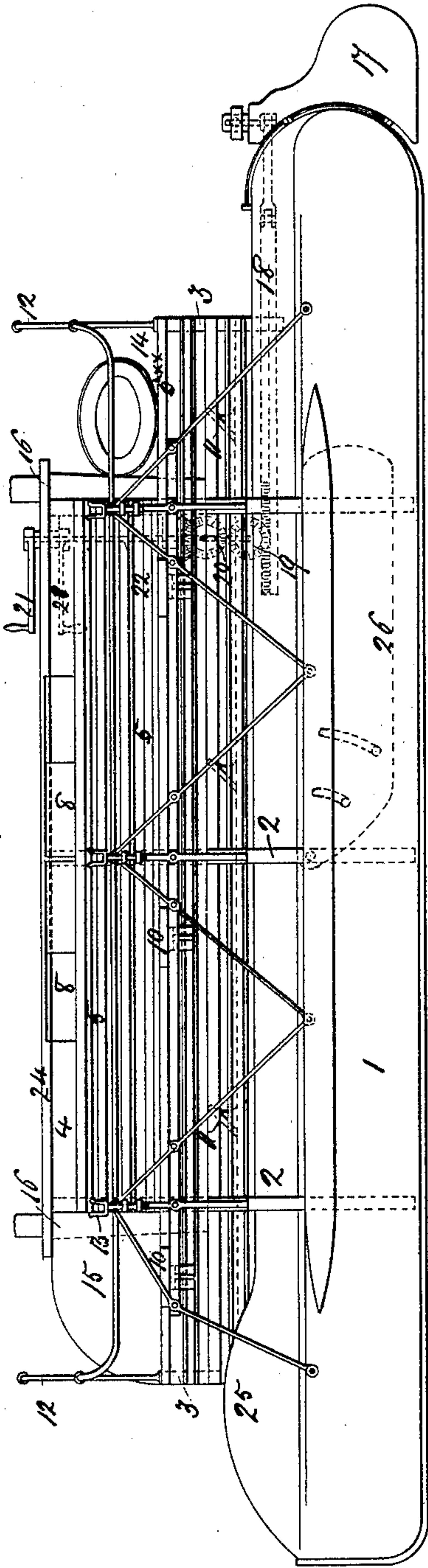
F. W. BREWSTER.

LIFE RAFT.

No. 354,386.

Patented Dec. 14, 1886.

FIG. 1.



ATTEST.
Harry L. Amer.
John H. Scott.

FIG. 4.

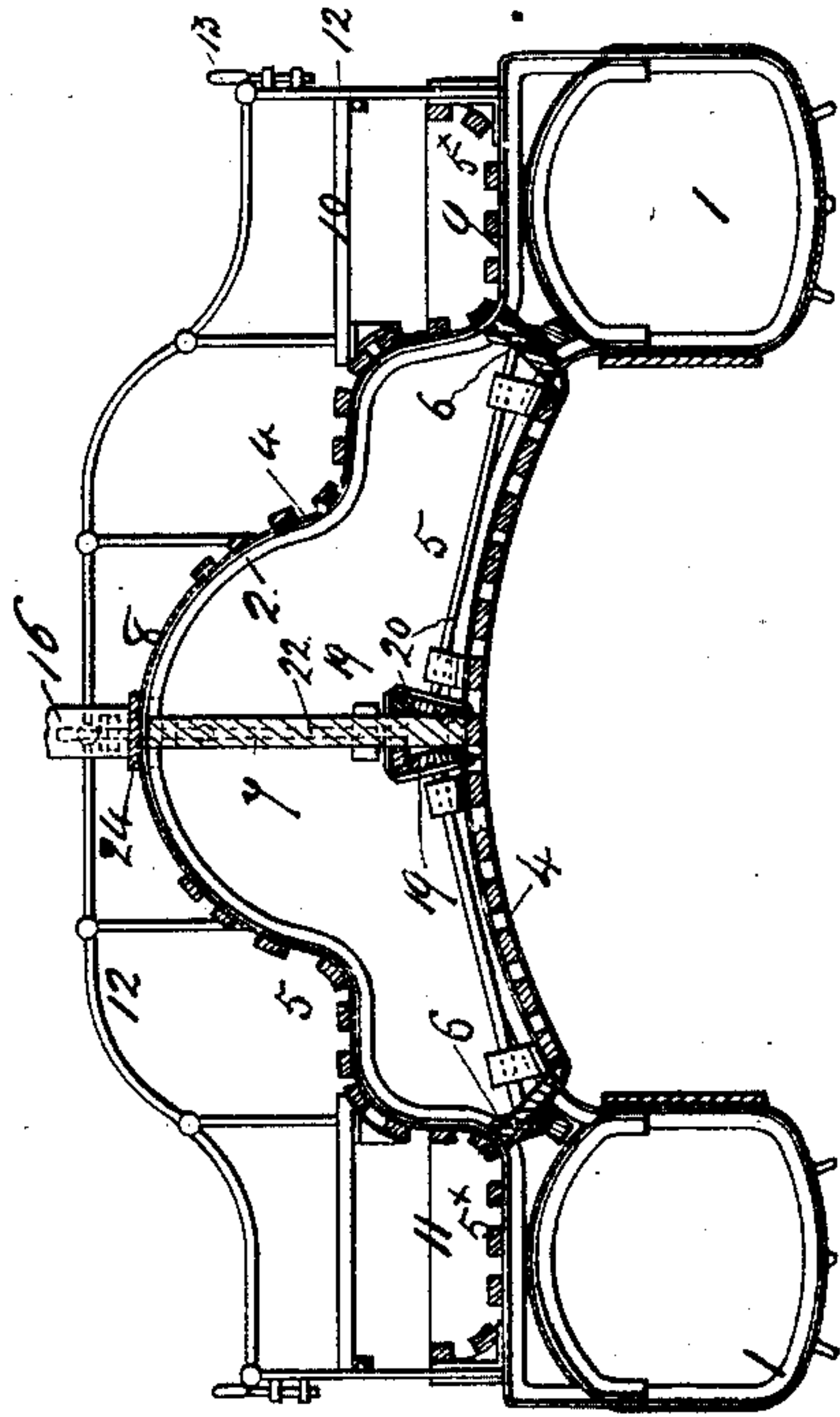
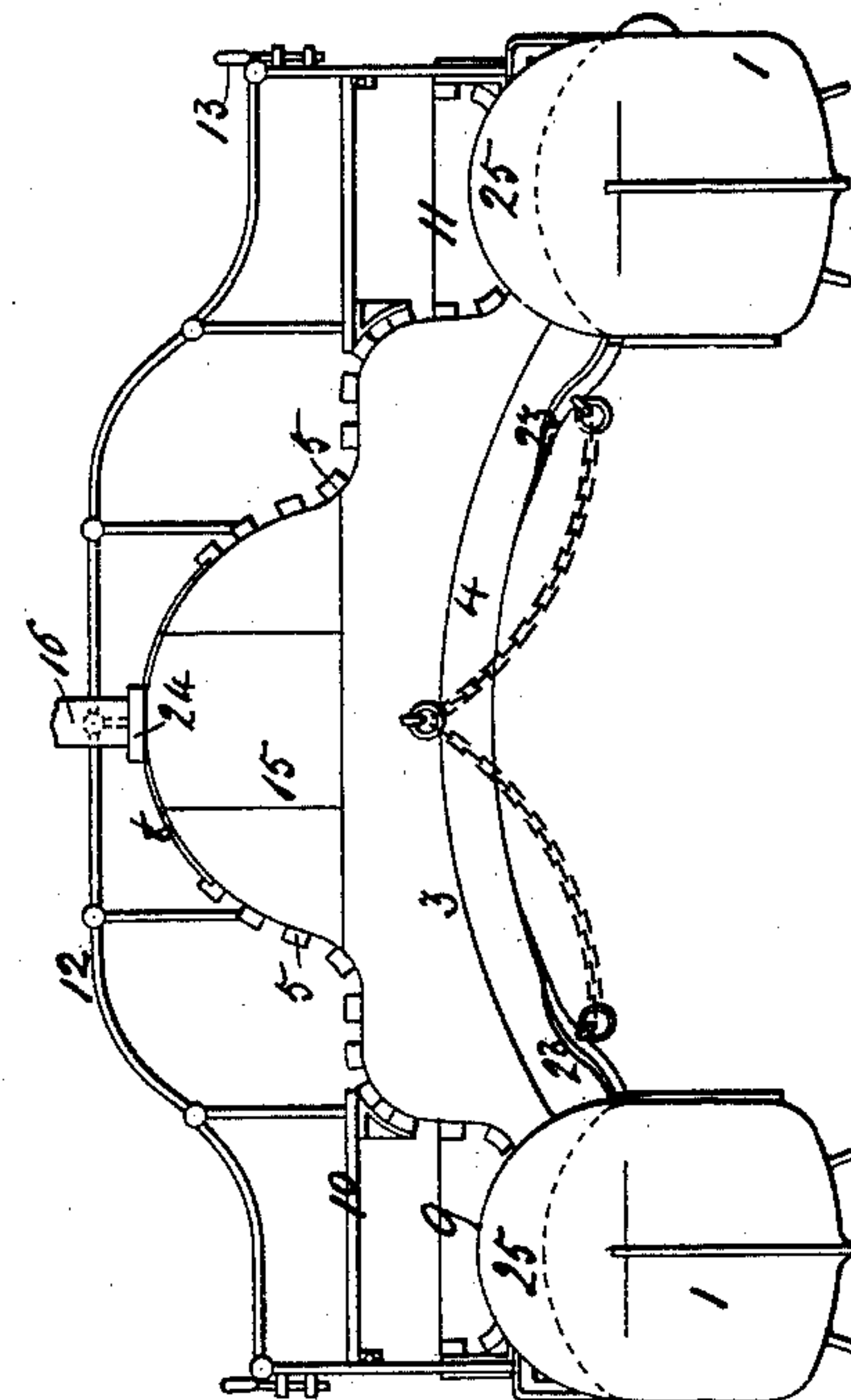


FIG. 3.



INVENTOR.
Francis W. Brewster.
By J. N. McIntire
Att'y.

(No Model.)

2 Sheets—Sheet 2.

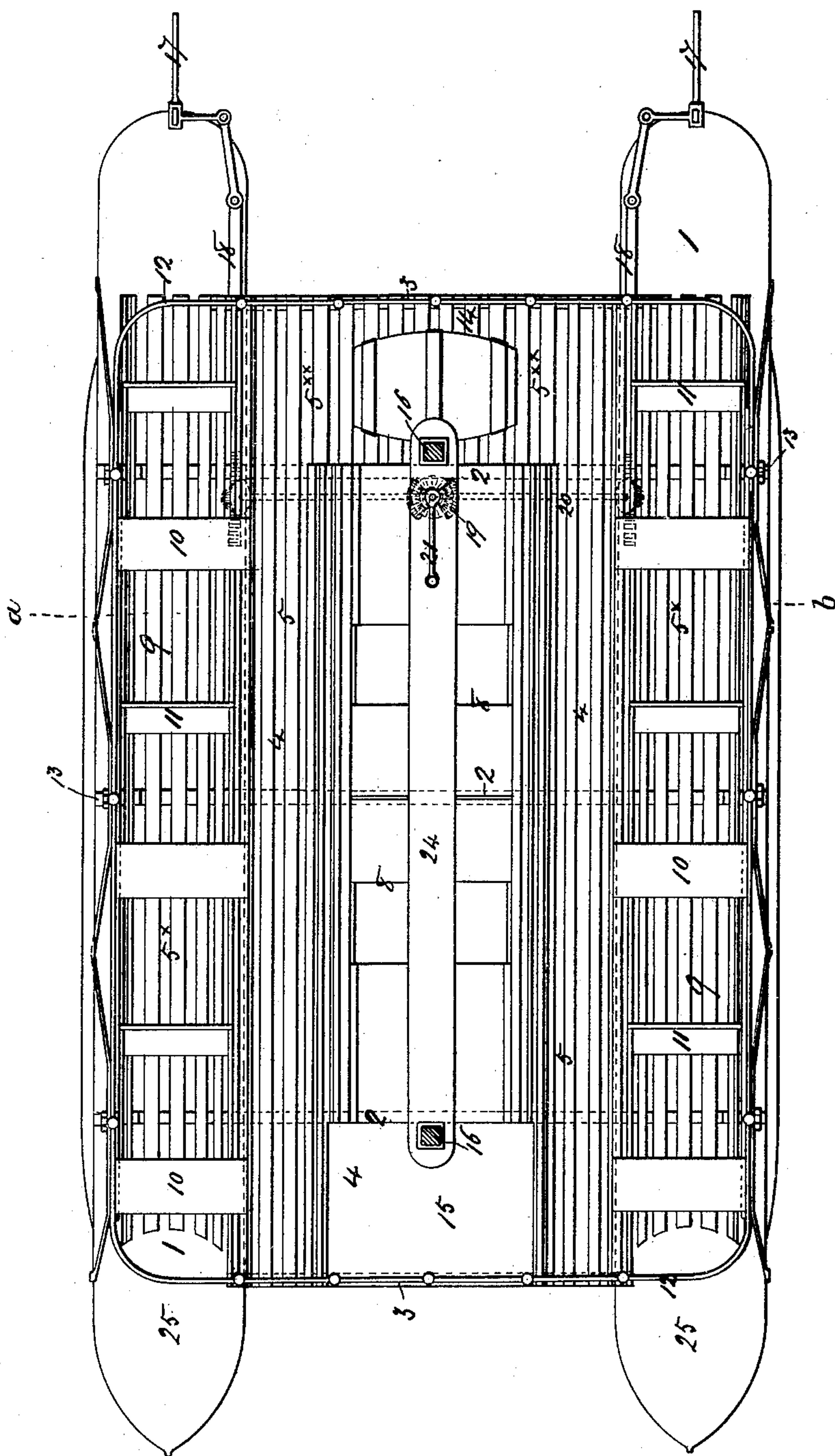
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FIG. 2.



ATTEST-
Harry L. Amer.
Chas. H. Scott.

INVENTOR.
Francis W. Brewster
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UNITED STATES PATENT OFFICE.

FRANCIS WENTWORTH BREWSTER, OF KENSINGTON, COUNTY OF MIDDLESEX, ENGLAND.

LIFE-RAFT.

SPECIFICATION forming part of Letters Patent No. 354,386, dated December 14, 1886.

Application filed July 8, 1886. Serial No. 207,420. (No model.) Patented in England December 31, 1883, No. 5,993, and in France July 31, 1884, No. 163,571.

To all whom it may concern:

Be it known that I, FRANCIS WENTWORTH BREWSTER, a subject of the Queen of Great Britain and Ireland, and a resident of Kensington, in the county of Middlesex, England, manufacturer of life-saving appliances, have invented certain Improvements in Life-Rafts, (for which I have obtained British Letters Patent No. 5,993, dated December 31, 1883, and French Letters Patent No. 163,571, dated July 31, 1884,) of which the following is a specification.

This invention relates to an improved formation of life raft or boat, built upon the "twin-hulled" principle—that is, with separate hulls, pontons, or floating parts, to which the deck, platform, or carrying part of the structure or the part not immersed is connected, and upon the buoyancy of which pontons or immersed parts the superstructure or part not immersed wholly, or nearly so, depends for its support.

I lay no claim to the principle of constructing life-rafts with two or more pontons as being new, as I am aware that boats or craft constructed upon various modifications of this principle have been introduced from time to time; but the present improvements relate principally to an improved method of uniting the pontons by a novel arrangement and construction of superstructure, the principal objects of the invention being to construct such rafts so that they will be more generally serviceable, more easily navigable, and capable of affording both outside and inside accommodation, and better shelter and protection to the occupants from the sea and weather than any like craft hitherto constructed, and to improve the sailing qualities of such craft, and render them capable of sailing rapidly and making a minimum of leeway.

In the accompanying drawings, Figure 1 represents a broadside elevation of my improved construction of life-raft. Fig. 2 represents a plan view thereof. Fig. 3 represents an end elevation thereof; and Fig. 4 represents a transverse section through the line *a b*, Fig. 2.

According to this invention the pontons 1 are connected at opposite parts at or toward

each end, and at one or more intermediate parts of their length (depending principally upon the length, formation, and weight of the superstructure) by angle and sheet iron girder-stays or equivalent supports 2, of an arched or saddle formation, and which may be bolted or otherwise suitably secured to the top or inner or outer sides of the ponton, or may be continued round the same, either inside or outside, to form part of the framing thereof. Forward and aft of such stays there are supplementary stays 3, for affording the necessary rigidity to the connection and the accommodation hereinafter referred to. The spaces divided off and bounded by the girder-stays 2 are inclosed by sheet metal or other suitable material, 4, and upon the bottom and top surfaces of such stays longitudinal battens 5, preferably of iron or wood, are placed. This formation affords inner compartments, clear of and above the level of the pontons, of such a conformation as will permit of rescued persons getting thereinto and of their sitting in an easy position, from which no sudden motion of the raft will be liable to displace them, on the bottom of such compartments, back to back, with their feet resting against foot-boards 6, running lengthwise of the compartments, and with their backs resting against a central longitudinal division, 7, the formation of the upper part of such compartments affording ample accommodation for the movement of their knees. The conformation of the upper and outer part of such compartments is also specially adapted for the sitting accommodation of the crew, and of other rescued persons, should there not be sufficient room for all the latter within the superstructure, such other persons sitting in the same direction, and above those within the compartments. Access is provided into each of such compartments by openings and sliding doors 8, adapted to the upper part of the superstructure. Where it is not required that such spaces, as aforesaid, should be wholly inclosed, the upper part or parts thereof of the said inclosing metal or material 4 may be dispensed with.

On each side of the superstructure and above the pontons there is constructed a lon-

itudinal footway or platform, 9, of similar longitudinal battens, 5^x, laid above the said girder-stays 2 3, and above each such platform there are adapted at suitable intervals 5 transverse seats 10 and foot-boards 11, for use of the navigators of the craft when rowing, and along the outer side of each such platform there is adapted a light construction of hand rail and framing, 12, which serves also for the 10 purpose of supporting the seats 10 and carrying the rowlocks 13, and such other means as are or may be necessary for the use of such navigators and for effecting the manual propulsion of the craft.

15 At the rear of the rear inner compartment there is arranged a transverse platform or gangway, 14, formed by a grating or by battens, 5^x, resting upon the stays 3 and adapted with a convenient transverse hand-rail, 12, 20 and forward of the said fore inner compartment a compartment, 15, is formed for the storage and carrying of provisions and any necessary articles, and at this end also a hand-rail, 12, is similarly arranged. The pontoons 25 may be divided off into water tight compartments, and in that or those centrally of the length of the pontoons a supply of fresh or potable water may be carried, and which may also serve as ballast, and can be replaced by 30 pumping in sea-water, if desired, for the latter purpose.

At 16 provision is afforded for a mast at either or both ends, so that the craft may be sailed or propelled by oars, as circumstances 35 render expedient; and for the purpose of steering the craft there is adapted to the stern of each ponton a rudder, 17, the tillers of the two rudders being connected to racked rods 18, which are actuated in reverse directions by 40 gearing 19 on shafts 20 upon the desired movement being given to either the inner or outer tiller-handles, 21, on a vertical spindle, 22, passing up into or through the said rear compartment and actuating both shafts 20, so that 45 both rudders may be simultaneously turned, as required.

The battens 5 5^x being connected to each of the girder-stays 2, serve as longitudinal stays thereto, and thus afford a very rigid connection thereof; but, if required, there may be 50 diagonal tie-rods 23, running under the superstructure, or additional longitudinal strengthening parts 24 above it, and other tie-rods may be adapted under and in a line with the 55 seats, or elsewhere, as convenient, transversely of the craft and running straight through the superstructure.

The top surface of the pontoons is made of a raised or arched formation, so that all water 60 which may fall thereon will at once run away on each side, and the fore end, 25, is more highly raised, and to the inner sides of the pontoons drop-keels 26 are attached in suitable positions.

65 The front and rear of the bottom of the superstructure are flared so as to ride well above the water and prevent any swamping when

plunging down upon or when overtaken by a sea, the vessel rising in response when struck 70 under the roof of the tunneled water-way between the hulls. The superstructure is thus of such a character as that the wind is deflected above or below it, and a minimum resistance is offered by the formation of the two 75 ends to both wind and water; and there are free passages between the pontoons and the superstructure for the wash of the water between such parts over the pontoons and under the side platforms.

One of the special features of the said improved formation of superstructure is that 80 facilities are provided by the peculiar formation of the covered arched connection between the pontoons for a considerable number of men sitting, reclining, or bearing upon 85 it, and clinging to its outside surface by means of gratings, life-lines, or other hold-fasts with which it is or would be provided, while at the same time affording good protection to all who may have been placed within 90 the internal portion or compartments from the violence of the wind and water, as the superstructure is or may be completely covered in, and is well raised above the water.

In a modification of the above construction 95 the center of the underside of the superstructure may be hinged along its whole length, thus enabling the raft to collapse or be taken completely asunder by drawing out the rod acting as the center-pin of the hinges. The external sitting accommodation may also be 100 adapted to the superstructure as to be detachable therefrom, and so that it can be secured against the bulwarks of a ship or vessel to afford ordinary sitting accommodation, 105 and when constructed of appropriate dimensions the entire raft in a usable condition may be placed over the saloon-skylight, forming a seat on each side.

I claim as my invention— 110

1. The combination, with outlying pontoons 1, of a raised superstructure rigidly connecting such pontoons, and adapted for supporting rescued persons and others within it in a sheltered position and on its outer sides, and 115 of a construction comprising as essential parts arched or saddle-shaped transverse girder-stays 2 3, connecting the pontoons and dividing the superstructure into compartments, longitudinal battens 5 5^x connecting the stays 2 3 and affording inner and outer sitting accommodations, sheet metal 4, partly or wholly inclosing the space bounded by the stays 2 and battens 5, but affording access to the enclosed compartments, and side platforms, 9, 125 as herein set forth.

2. The arched or saddle-shaped transverse girder-stays 2, adapted for connecting the outlying pontoons and for dividing the superstructure into compartments and for supporting 130 inner and outer sitting accommodation, in combination with the inclosing sheet metal 4, flared at the fore and aft ends, longitudinal battens 5, connecting the stays and affording

the said inner and outer sitting accommodations, the back-rest 7, inner foot-boards, 6, outer side platforms, 9, side rails, 12, seats 10, and foot-boards 11, as herein set forth.

5 3. In combination with the arched or saddle-shaped transverse girder-stays 2, adapted for connecting the outlying pontons and for dividing the superstructure into compartments and for supporting the inner and outer
10 seating accommodations, the inclosing sheet metal 4, flared at the fore and aft ends, longitudinal battens 5, connecting the stays and affording the inner and outer seating accommodations, the back-rest 7, inner foot-boards,

6, outer side platforms, 9, side rails, 12, seats 15 10, and foot-boards 11, the end platform, 14, the inclosed part 15, and means, substantially such as described, for propelling and steering the craft.

In testimony whereof I have signed my name 20 to this specification in the presence of two subscribing witnesses.

F. W. BREWSTER.

Witnesses:

CHAS. AUBREY DAY,

HENRY MARSHALL,

Both of 321 High Holborn, London.