No. 803,607. PATENTED NOV. 7, 1905.

C. P. LEAVITT.

BOAT OR SHIP.

APPLICATION FILED FEB. 9, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

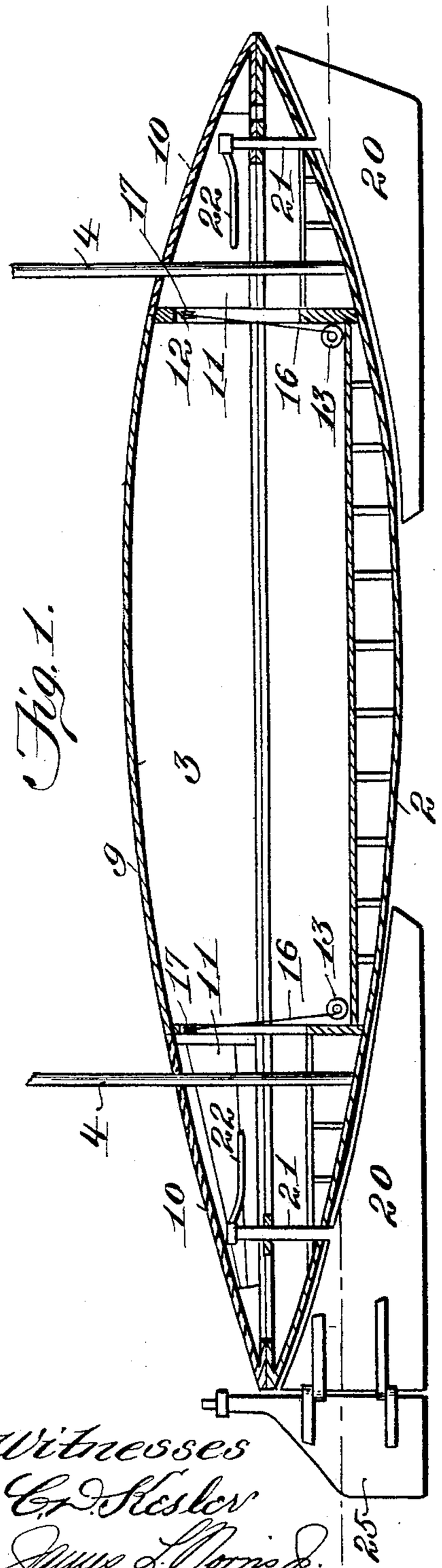


Fig. 3.

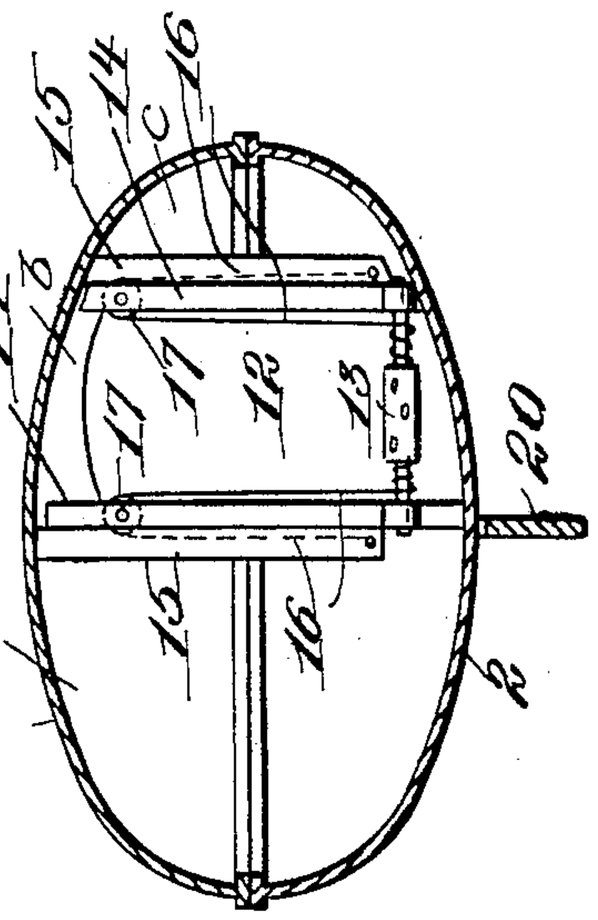
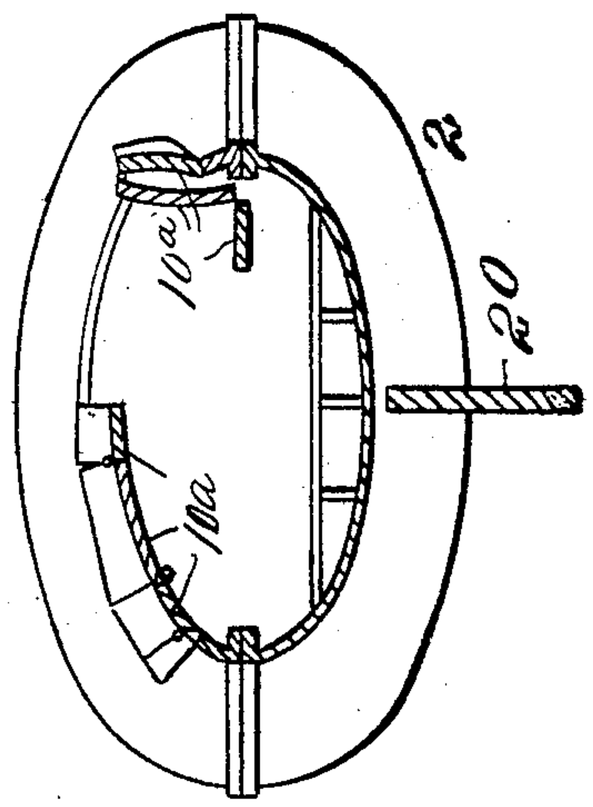


Fig. 2.



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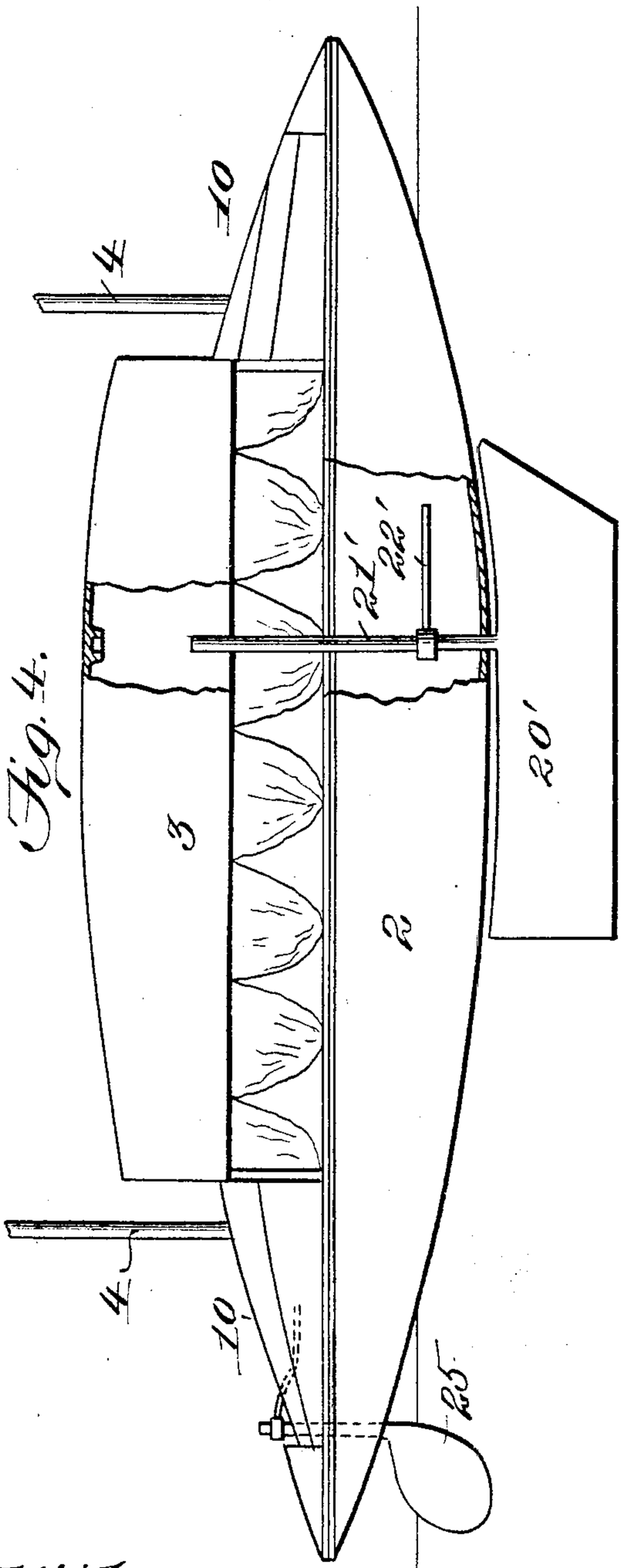

Fig. 4.

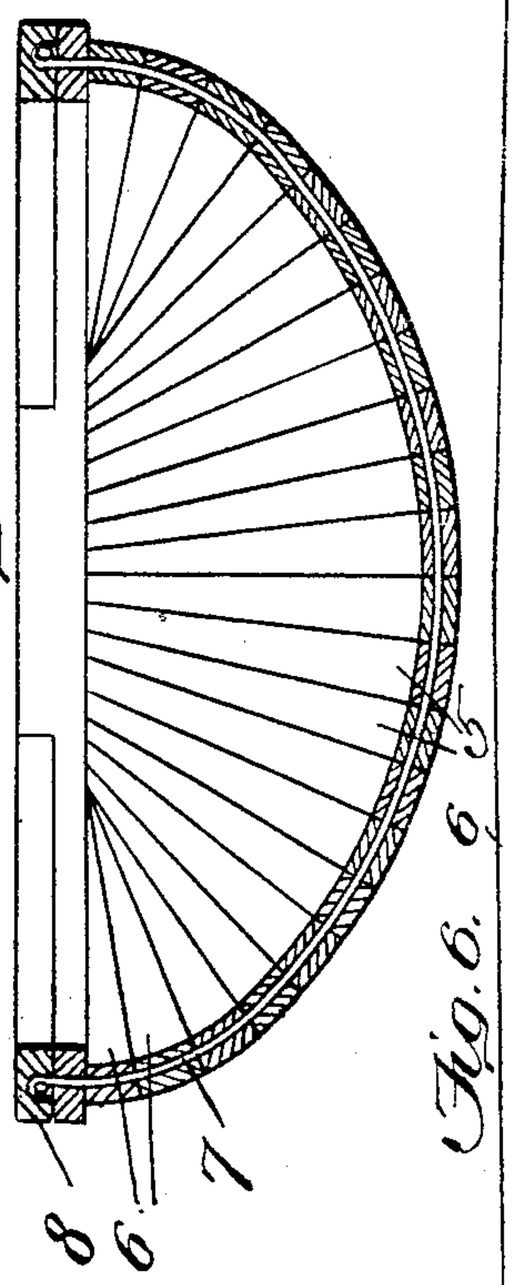

Fig. 5.

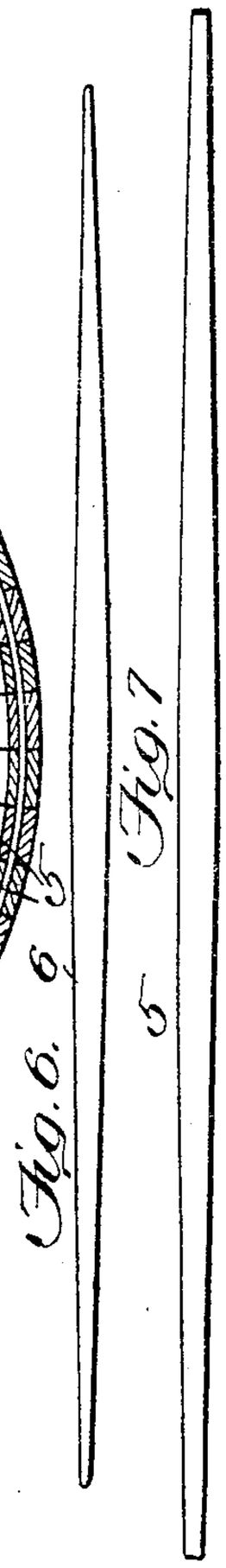

Fig. 6.

Fig. 7

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UNITED STATES PATENT OFFICE.

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BOAT OR SHIP.

No. 803,607. Specification of Letters Patent. Patented Nov. 7, 1905.

Application filed February 9, 1905. Serial No. 244,920.

To all whom it may concern:

Be it known that I, CHARLES P. LEAVITT, a citizen of the United States, residing at Miami, in the county of Dade and State of Florida, have invented new and useful Improvements in Boats or Ships, of which the following is a specification.

This invention relates to boats or ships, and the object of the invention is to provide a boat or ship which can be inexpensively constructed, which is capable of developing high speed, and which can sail without sails, so that it can beat off a leeshore without danger when the sails cannot be used or are blown away.

A boat or ship involving the invention has large cabin space or capacity.

In the drawings accompanying and forming a part of this specification I illustrate a form of embodiment of boat or ship involving my invention, which I will set forth in detail in the following description; but I do not limit myself to the disclosure thus made, for certain variations may be adopted within the scope of my claims succeeding said description.

By a boat or ship constructed as illustrated in the drawings I am enabled to secure the advantages hereinbefore named and others hereinafter mentioned.

In said drawings, Figure 1 is a longitudinal sectional view of a boat involving my invention. Figs. 2 and 3 are cross-sectional elevations taken along different planes. Fig. 4 is a side elevation. Fig. 5 is a cross-sectional view, on an enlarged scale, of the hull. Figs. 6 and 7 are detail views of the staves from which the hull and superstructure are formed.

Like characters refer to like parts throughout the different views.

The only difference in the structure shown by Fig. 4 and the figures that precede it is that in the first case the boat or ship has a one-piece keel, while in the second case, or as shown in Figs. 1 to 3, inclusive, the keel is divided, one section being fore and the other aft, as will hereinafter more fully appear.

The ship or boat represented in full in Figs. 1 and 4 is of parabolic spindle form, and it includes a hull, as 2, and a superstructure or deck, as 3. Each of these two parts is of similar shape; but the superstructure or deck, as will hereinafter appear, is divided. The boat or ship represented is arranged for sailing, and for this purpose it may be equipped with one or more masts, each designated by 4, the one on the right constituting a foremast and the other one a jigger-mast. A detailed description of the formation of the hull will suffice for the superstructure, as both parts, as previously indicated, are of similar shape. The hull 1 make absolutely water-tight without the necessity of calking, nor is it necessary to employ any ribs, the ship or boat being sufficiently braced by the employment of bulkheads hereinafter described. The hull 2 is represented as made up of two kinds of staves, the intermediate kind each being designated by 5 and the outer ones by 6. An intermediate stave is represented in detail in Fig. 6, while one of the outer staves is represented in detail in Fig. 7. These staves, when the hull is in its finished form, fit side to side—that is to say, there is no positive connection between them, as I find that by constructing the boat in the manner devised by me no interlocking tongue-and-groove or similar joint is necessary between the staves. They simply fit solidly together and are maintained in this relation by rods, as 7, which pass through registering bores formed transversely through the staves. The staves 5 and 6 can be very easily formed, and the holes transversely through them, which are adapted to register to receive the rods 7, may be readily drilled. The staves 5 form what might be considered the bottom of the hull, while the staves 6 constitute the sides of said hull. In the form of the device illustrated it is therefore requisite to construct the hull and necessarily the superstructure of only two different forms of staves. Each stave, as will be understood, will have formed through it holes, and the holes will be separated a distance sufficient to assure strength in the particular ship to be constructed, and the same will apply to the number of rods 7 employed. Each of the staves 5 and 6 is of parabolic form, the only difference being that the staves 6 are drawn to a point, while the staves 5 are not. By employing staves of this character I can secure a boat or ship of parabolic spindle form, the ends of which are pointed. I have just stated that the staves 5 and 6 are of parabolic form, by which I mean to indicate that their side edges are defined by parabolic curves.

As will be gathered from what I have here-

inbefore stated, I do not limit myself to the particular construction of staves, for I might make a boat composed simply of the staves 6, and if I did the ends of the boat would be squared off instead of pointed.

In constructing the boat or ship I take a desired number of previously-formed staves, such as 5 and 6, which have been transversely bored, lay them flat upon the floor or other foundation with the bores in register and then pass through the bores or holes rods. By tightening the rods or drawing upon them the hull will come into proper shape. In practice I provide means of a powerful nature to apply the proper draft to the rods. When the rods are of wire form, their ends, after the hull is properly shaped, will be twisted together, so as to maintain said shape, or instead of doing this I may employ nuts for the purpose. After the hull is shaped I apply along its upper edge or gunwale a cap, as 8, the said cap being secured in place in any desirable way. I have stated that the shape of the staves of the superstructure is the same as those in the hull. The superstructure staves, however, are thinner or lighter than those of the hull.

The superstructure 3 consists of an intermediate part 9 and end parts, each denoted by 10, the intermediate part constituting, as will hereinafter appear, a roof for the cabin, the floor of which cabin may be suitably built within the hull. The bulkheads, each designated by 11, form the ends of the cabin, and they are horizontally divided, as clearly shown in Fig. 3, the lower section being rigid with the hull, while the major part of the upper section is rigid with the intermediate portion of the superstructure. In each bulkhead is formed an opening, as 12, to obtain access to a windlass, as 13, adjacent thereto, it being evident that there are two windlasses, one being shown located as near each end of the cabin. I have just set forth that the bulkheads are horizontally divided and that the lower section is rigid with the hull, while the major part of the upper section of each is rigid with the superstructure. All of the upper section of each bulkhead except that part thereof which forms the crown of the door-opening is rigid with the superstructure.

Rising from the hull near each end of the cabin are the vertically-disposed and parallel standards 14, slidable against which are the rods 15, depending from and rigid with the superstructure. From the shaft of each windlass chains, cords, or their equivalents, as 16, extend upward and over sheaves, as 17, on the standards 14. The chains then extend downward from the sheaves and are connected to the rods 15 near the lower ends thereof. The drum portion of each windlass has in its periphery holes to receive handspikes, whereby the said windlass can be turned. When turned in one direction, it will wind the chains, cords, or equivalent connections thereon in order to elevate the intermediate part 9 of the superstructure, this being for the purpose of giving head-room in the cabin. Said intermediate part of the superstructure can be provided with curtains or something of a similar character, as indicated in Fig. 4, or netting may be provided to protect the inmates of the cabin, these being matters of particular preference. It will be understood that when it is desired to elevate the intermediate part of the superstructure, which constitutes the roof of the cabin, the two windlasses 13 are simultaneously operated. Access can be readily had to the windlasses by way of the openings 12. These openings may be protected by curtains or in any other suitable way that may be desired.

I have set forth that the major part of the upper section of each bulkhead 11 is connected with the superstructure. The remainder thereof, as will be clearly evident upon an inspection of Fig. 3, extends between the respective standards or uprights 14, its lower edge constituting the upper wall of the respective openings 12.

I deem it desirable to describe more in detail the upper section of one of the bulkheads, which is the same as the other, and in this connection particular reference may be had to said Fig. 3. Said upper section is shown as divided into three parts, denoted, respectively, by *a*, *b*, and *c*, the parts *a* and *c* being connected to the superstructure, while the intermediate part *b* is connected with said standards or uprights 14, between which it extends.

The outer ends 10 of the superstructure include in their make-up hingedly-united sections 10^a, which can be swung open to enter the cockpits fore and aft of the cabin and to also present seats in said cockpits. The boat or ship, as will be evident, can be wholly shut in by closing these parts of the superstructure over the cockpits and by lowering the intermediate part of the superstructure. There are six of these sections 10^a, as shown most clearly in Fig. 2, three upon each side of the longitudinal central line of the boat, the three on one side of said line being adapted to close against the three on the other side of said line when it is desired to house in the cockpits. To obtain access to the cockpits, it is only necessary to raise the sections 10^a.

A ship or boat constructed as described is well adapted for cruising, during which the intermediate part of the superstructure may be down. When at anchor, said intermediate part may be lifted, giving ample head-room, or even with the intermediate part of the superstructure down the end parts 10 thereof can be swung back to obtain access to the cockpits, in which, as previously indicated, seats can be placed. In Fig. 1 I rep-

resent a divided keel, each of the sections thereof being denoted by 20. The keel-sections are adapted for swinging motion about vertical axes, they being represented as carried upon posts, each denoted by 21, suitably mounted in the hull and carrying at their upper ends tillers, as 22, by which the said keel-sections can be operated.

A boat constructed as described and provided with a swinging keel can sail without sails against the wind. To accomplish this, the keel must be set at an angle to the longitudinal axis of the ship and the latter itself employed in lieu of a sail. The swinging keels are used in sailing without sails against the wind, and for this purpose they are set two points to leeward, which result can be readily accomplished by the manipulation of the tillers 22, and the ship or boat utilized as a sail is steered two points off the wind. If there were no leeway, the ship or boat would head up within four points. It will be obvious that the ship or boat in such case moves slightly sidewise. Her spoon-shaped bow and absence of fixed keel insures this result. The swinging keel can be used in ordinary sailing. For example, in coming to anchor in a heavy gale the sails may be taken in outside, and the ship or boat, by the proper manipulation of the keel, can be readily brought to her anchoring position. In case the sails are close-reefed in a gale the swinging keel by proper manipulation insures the boat or ship being brought about promptly and without danger.

The foregoing description of the keel construction relates particularly to Fig. 1. In such figure the boat or ship is represented as having a rudder 25, supported directly upon the outer end of the keel-section 20 at the left. This rudder 25 serves its customary function, and in case it should be carried away the swinging keel-section which carries it can be employed as a rudder. Where draft is of no consideration, I can employ a one-piece keel, as 20′, (see Fig. 2,) carried upon the post or rod 21′, the latter being furnished with a tiller or lever 22′, whereby the said keel 20′ may be swung sidewise, as occasion may require. Each of the tillers 22 and 22′ may be located in any desirable place and may be operated in any desirable manner.

In indicating the shape of the boat I have set forth that it is in the form of a parabolic spindle. It need not be precisely this shape, for there are other spindle shapes which might be employed. It will therefore be apparent that I do not wish to restrict myself to the precise shape represented, although I have found the same in practice particularly advantageous. It might be considered that the boat or ship represented is of composite form, its longitudinal section being approximately that of a parabolic spindle, its cross-section that of an oval, and its plan a vertical section of a parabolic spindle, the whole being composed of segments of different substantially parabolic spindle form.

One of the important features of the ship is its construction, as will be evident, of strips or staves of substantially parabolic form, and another is the construction of a ship or boat of parabolic form below the water-line and in connection with such ship or boat made in such latter manner a swinging keel, so that the boat or ship can beat to windward under bare poles.

Having thus described the invention, what I claim is—

1. A ship or boat of substantially parabolic spindle form, comprising a hull and a superstructure, each composed of a plurality of staves arranged side by side, and rods extending transversely of the hull and superstructure and constituting the sole means for holding the staves together in assembled relation.

2. A ship or boat of substantially parabolic spindle form, comprising a hull and a superstructure, said boat having a cabin, and the intermediate part of the superstructure constituting a roof for the cabin and being mounted for rising and falling motion.

3. A ship or boat of substantially parabolic spindle form comprising a hull and a superstructure, the boat having a cabin and the intermediate part of the superstructure constituting a roof for the cabin, and means supported by the hull and connected with the intermediate part of the superstructure for raising the same.

4. A ship or boat of substantially parabolic spindle form, comprising a hull and a superstructure, the boat or ship having a cabin, and the intermediate part of the superstructure constituting a roof for said cabin, windlasses supported by the hull, and means adapted to be wound on the windlasses and connected with the intermediate part of the superstructure for raising the same.

5. A ship or boat of substantially parabolic spindle form comprising a hull and a superstructure, and also having a cabin, the intermediate part of the superstructure constituting a roof for the cabin, divided bulkheads in the ship or boat, one section of each being connected with the intermediate part of the superstructure and the other part with the hull, and means for raising said intermediate part of the superstructure.

6. A ship or boat hull composed of a plurality of staves arranged side by side, each of parabolic spindle form, the intermediate staves having their ends squared, and the outer staves being pointed, and rods extending transversely of the hull for holding the staves in assembled condition to present a water-tight hull.

7. A ship or boat constructed of a plurality

of staves of parabolic spindle form, arranged side by side, and rods extending transversely of the staves and constituting the sole means for holding them assembled to present the desired structure.

8. A ship or boat hull composed of a plurality of staves of parabolic spindle form, arranged side by side, and means for holding the staves together to present a hull of water-tight construction.

9. A ship or boat hull composed of a plurality of staves of parabolic spindle form, arranged side by side, and rods extending transversely of the hull and constituting the sole means for holding the staves assembled to present a hull of water-tight construction.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES P. LEAVITT.

Witnesses:
F. W. AMASON,
C. C. CARROLL.