

(No Model.)

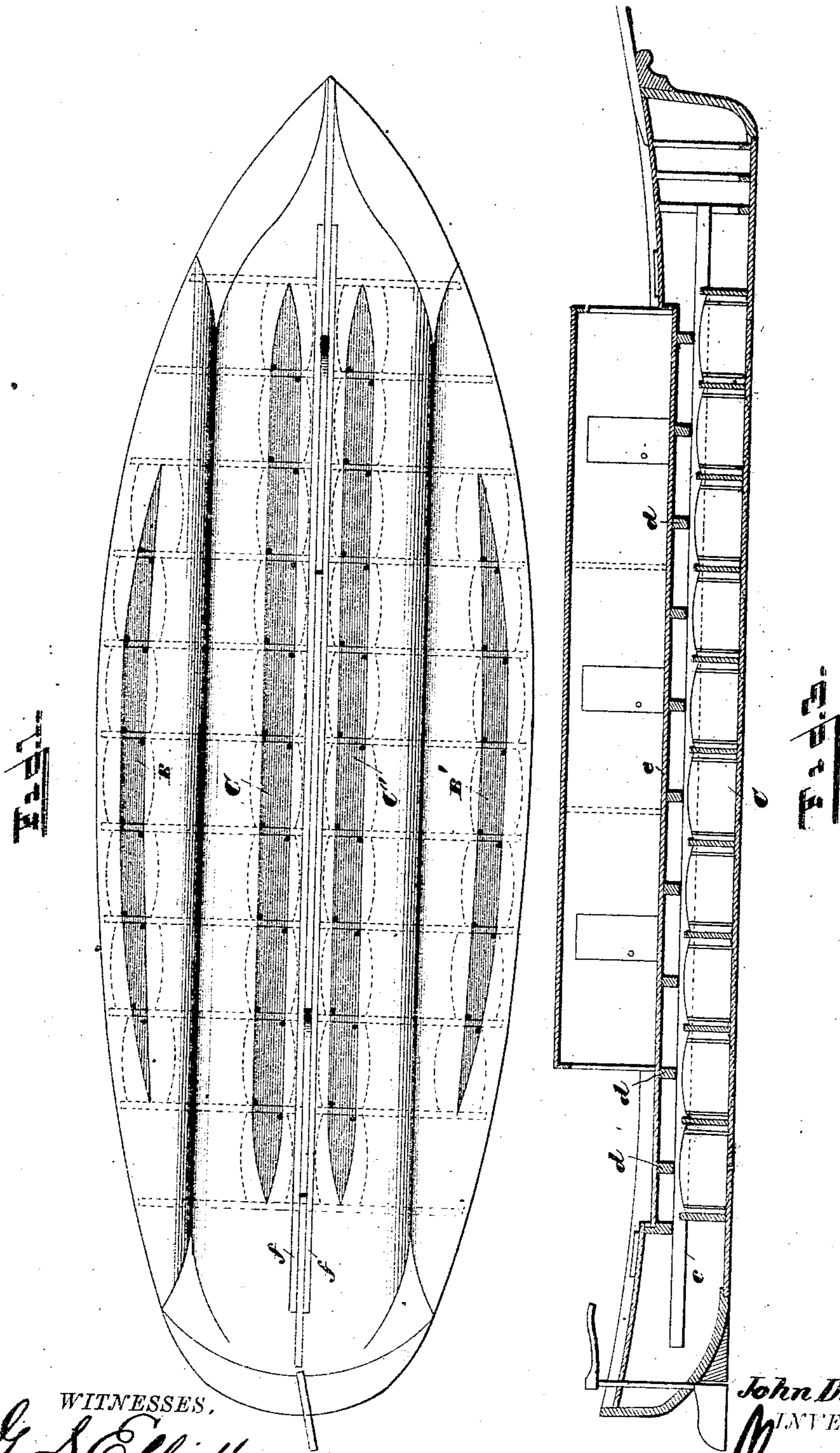
2 Sheets—Sheet 1.

J. D. CORNWALL.

CONSTRUCTION OF VESSELS.

No. 396,648.

Patented Jan. 22, 1889.



WITNESSES,  
*L. S. Elliott.*  
*E. W. Johnson*

*John D. Cornwall.*  
INVENTOR  
by *[Signature]*  
Attorney

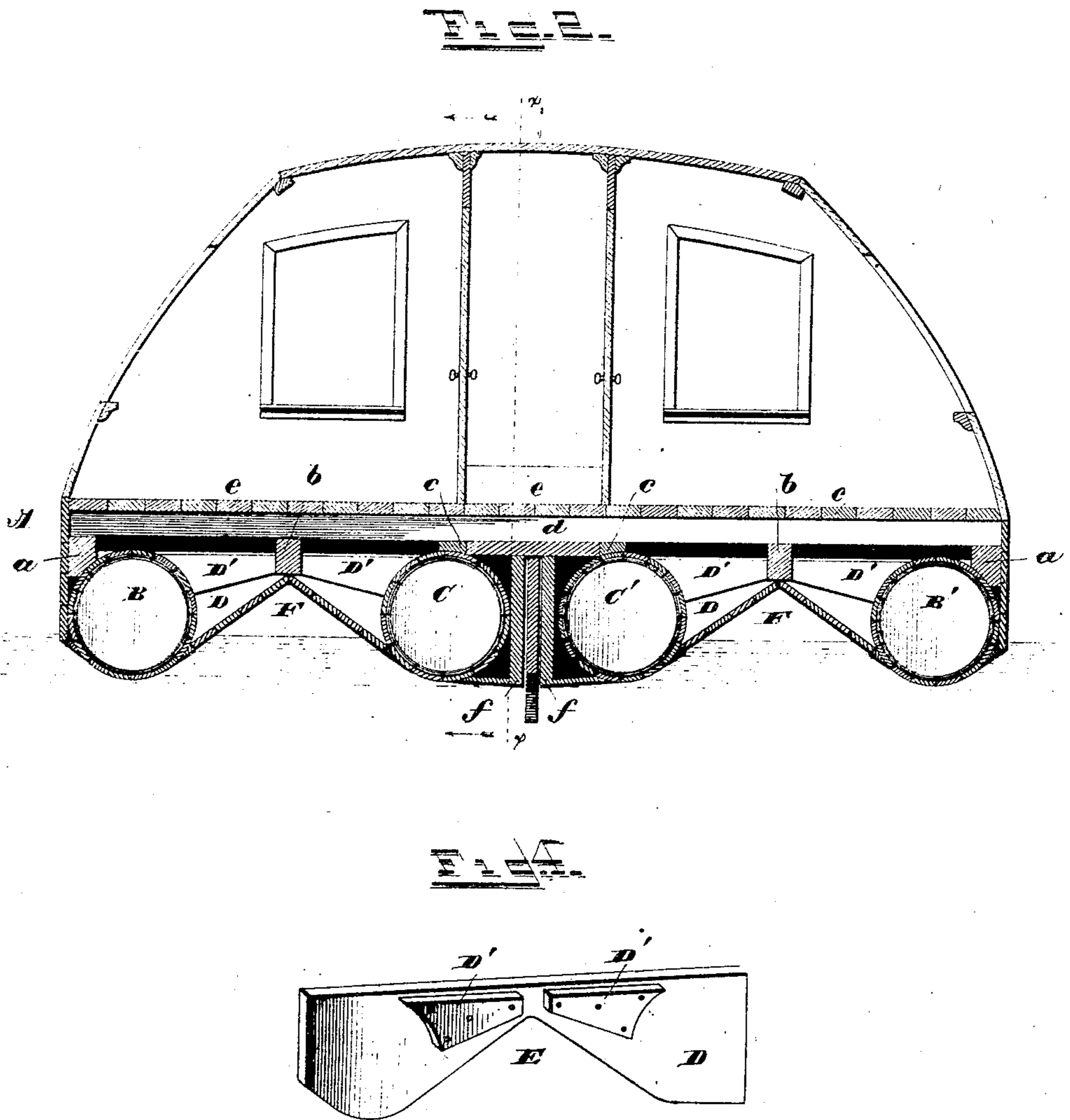
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# UNITED STATES PATENT OFFICE.

JOHN DANIEL CORNWALL, OF SANFORD, FLORIDA.

## CONSTRUCTION OF VESSELS.

SPECIFICATION forming part of Letters Patent No. 396,648, dated January 22, 1889.

Application filed October 18, 1888. Serial No. 288,495. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN DANIEL CORNWALL, a citizen of the United States of America, residing at Sanford, in the county of Orange and State of Florida, have invented certain new and useful Improvements in the Construction of Vessels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in the construction of vessels, the object of my invention being to provide a vessel which will be of extremely light draft, the buoyancy thereof being derived by a series of air tanks or barrels which are held securely in place by a suitable framework; and my invention consists in the special construction, combination, and arrangement of parts, as will be hereinafter fully set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the bottom of the vessel. Fig. 2 is a transverse sectional view. Fig. 3 is a longitudinal section through the line  $x x$  of Fig. 2. Fig. 4 is a detail perspective view.

A refers to the hull of the vessel, which consists of a suitable frame, longitudinal strips, and braces, as will be hereinafter set forth, which hold rigidly in place a longitudinal series of barrels, B B' and C C', the central barrels being placed so that their heads will be adjacent to each other, while the barrels forming the series B B' are arranged so that there will be a slight offset between their heads to give the proper curve to the sides of the vessel.

$a$ ,  $b$ , and  $c$  refer to longitudinal beams rigidly secured to a series of transverse beams,  $d$ , to which the floor-boards  $e e$  are secured. The corners of the longitudinal beams  $a$  are cut away, so that the barrels B and B' may fit snugly against said beams, and the under sides of the longitudinal beams  $c$  are also rounded to fit the barrels.

Between the barrels B C and C' B' braces D are placed, said braces extending from the

center of the vessel to the sides, and against these braces the heads of the barrels bear. These braces or frames are secured to the longitudinal beams  $a$ ,  $b$ , and  $c$ , and have attached thereto stay-pieces D', the ends of which are curved to fit against the barrels and assist in holding them in place. The braces D are cut away, as shown at E, to provide water ways or courses F between the barrels.

The vessel is provided, centrally, with longitudinal boards  $f f$ , which form the backbone or keel of the vessel, and between these boards one or two center-boards may be hung. At the front and rear end, between these boards  $f f$ , are secured pieces of plank, which extend beyond said boards and form at the rear of the vessel the skeg and at the front the bow-piece.

The frame of the vessel, when constructed as hereinbefore described, is covered by a suitable skin or planking, the said planking extending from the deck-boards  $e$  to near the bottom of the barrels B and B', and also to the edges of the braces D. The water courses or ways F, formed by the inclined recesses in the braces D, are also planked.

It will be observed that the shape or lines of the vessel are given principally by the braces D, which take the place of ribs in attaching the planks thereto, and the planking may be put on loosely, so as to permit water to pass between the seams.

Between the ends of the barrels and braces D the planking may be perforated to permit the water to circulate and prevent the collection of bilge-water.

The flooring or deck of the vessel may be provided with doors or traps, so that access can be had to the barrels for either partially filling the same with water or removing water therefrom, which is done by means of an ordinary hand-pump when it is desired to increase the draft of the vessel and give greater stability to the same.

The lines of the vessel, especially as to the bow and stern, may be built according to the fancy of the constructor, and the barrels may be covered entirely by the outside planking, or the under sides thereof may be left exposed.

The frame of the vessel may be re-enforced

by bolts and diagonal cross-beams, and at the bow and stern of the vessel the deck may be raised.

Upon the deck of the vessel is built a suitable cabin.

The principle of construction hereinbefore described may be applied to either sail-boats, steamboats, or house-boats, and when applied to sail-boats the side barrels can be partially filled with water to increase the stability of the boat and permit the carrying of a large area of sail.

The draft of a vessel constructed as hereinbefore described is very light, and is especially adapted to navigate shallow rivers, and the hull of the vessel is not liable to become injured by striking obstructions.

It is my design to coat the barrels both interiorly and exteriorly with pitch or other water-proofing composition, which will not only render the barrels impervious to moisture, but will assist in holding them in place upon the frame. The spaces between the longitudinal beams *a*, *b*, and *c* are such that should any of the barrels become injured they can be removed by simply removing the stay-braces *D'* and removing the barrels through the deck.

I claim—

1. In a vessel, the combination of a longi-

tudinal series of barrels or casks, *B B'* and *C C'*, braces *D*, having stay-pieces attached thereto abutting against the barrels, said braces being cut away centrally to provide a water-way, *F*, and exterior planking, substantially as shown.

2. The combination, in a vessel, of a series of braces, *D*, vertical planks *f f*, secured to the inner ends of said braces, longitudinal and transverse beams connected to said braces and supporting a superstructure, and a series of barrels held in place between the braces by stay-pieces, the exterior planking being attached to said braces so as to inclose either partially or wholly the barrels, substantially as shown, and for the purpose set forth.

3. The combination, in a vessel constructed substantially as described and provided with a series of longitudinal floats or barrels, of transverse braces forming compartments between said barrels, and an exterior planking having perforations formed therein to admit water flowing in and out between the braces, for the purpose set forth.

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

JOHN DANIEL CORNWALL.

Witnesses:

ROBERT MORROW,

ARTHUR F. S. WILLIAMS.