No. 681,363. Patented Aug. 27, 1901.

A. E. CHAMBERS.

BOAT.

(Application filed Mar. 26, 1900.)

(No Model.)

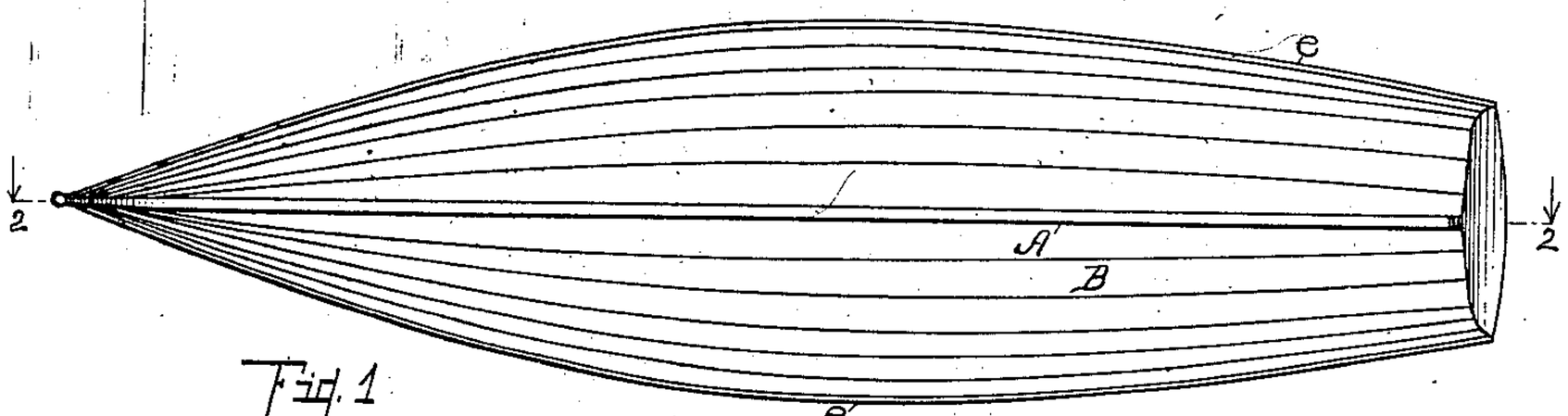

Fig. 1

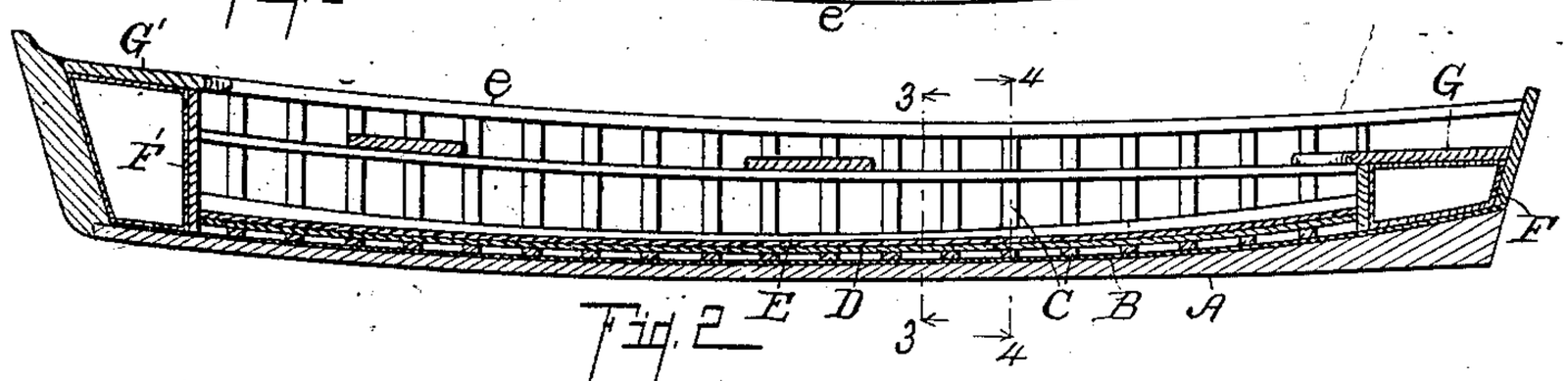

Fig. 2

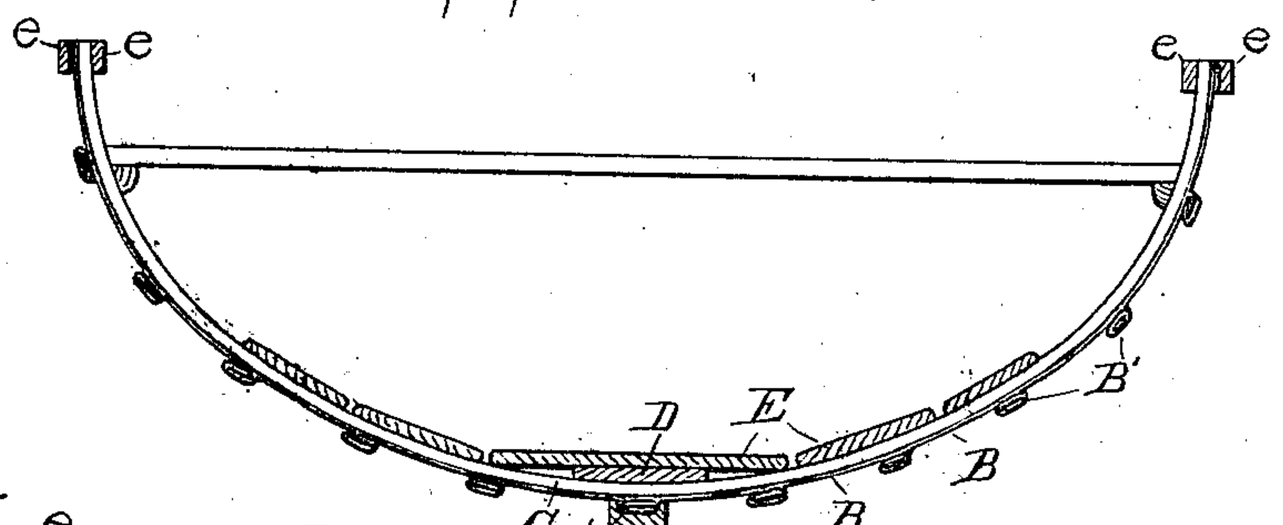

Fig. 3

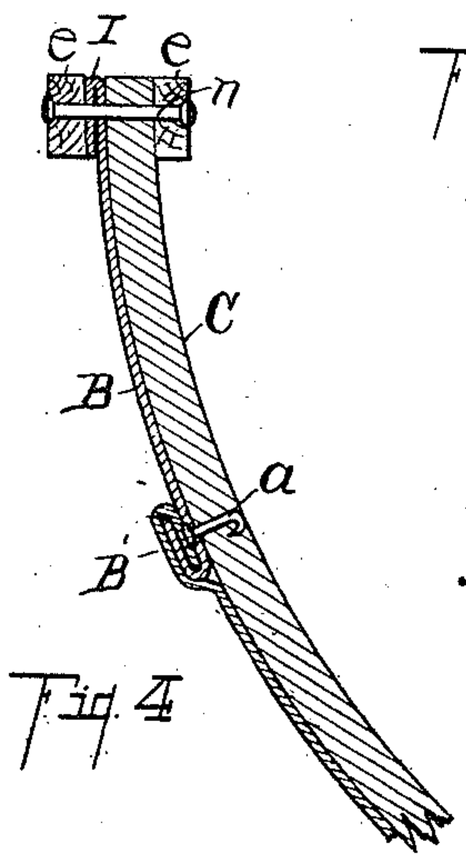

Fig. 4

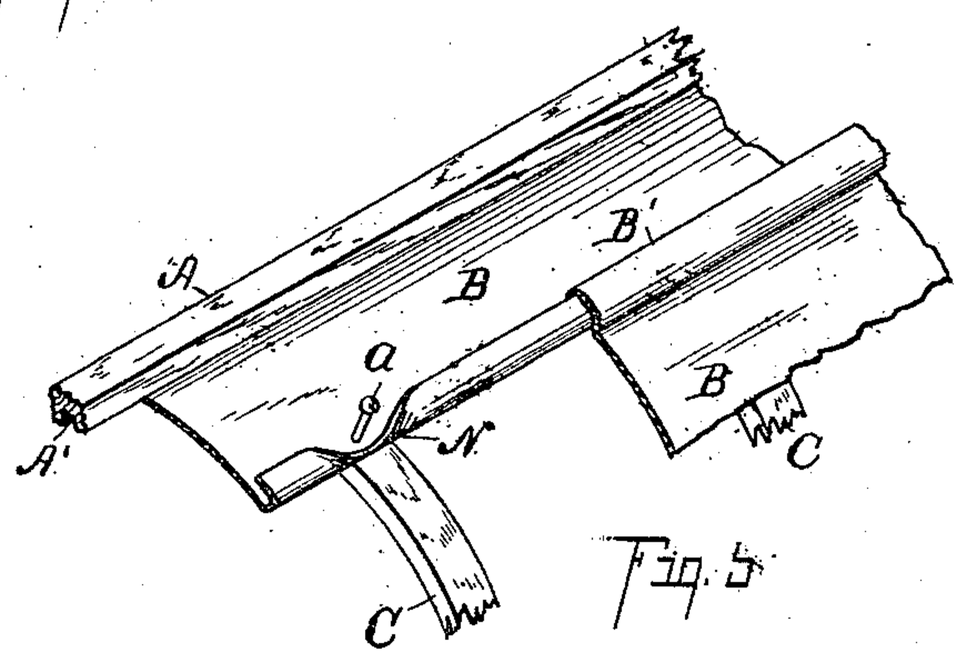

Fig. 5

Witnesses:
S. A. East.
Otis A. Earl

Inventor,
Arthur E. Chambers
By Fred L. Campbell
Att'y.

UNITED STATES PATENT OFFICE.

ARTHUR E. CHAMBERS, OF KALAMAZOO, MICHIGAN, ASSIGNOR TO THE WESTERN NOVELTY COMPANY, OF SAME PLACE.

BOAT.

SPECIFICATION forming part of Letters Patent No. 681,363, dated August 27, 1901.

Application filed March 26, 1900. Serial No. 10.218. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR E. CHAMBERS, a citizen of the United States, residing at the city of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Boats, of which the following is a specification.

This invention relates to improvements in boats.

The objects of the invention are, first, to provide an improved construction of metallic boat; second, to provide an improved construction of metal boat in which the metal employed is not injured, weakened, or hardened by stamping and pressing it into shape, and, third, to provide an improved construction and arrangement of parts in metallic boats which shall insure their buoyancy even when they are capsized. Further objects will definitely appear in the detailed description to follow. I accomplish these objects of my invention by the devices and means described in this specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying my invention is fully illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an inverted plan view of a boat embodying the features of my invention. Fig. 2 is a longitudinal sectional elevation taken on line 2 2 of Fig. 1. Fig. 3 is an enlarged detail transverse sectional elevation taken on line 3 3 of Fig. 2. Fig. 4 is an enlarged detail transverse sectional elevation taken on a line corresponding to line 4 4 of Fig. 2. Fig. 5 is an enlarged detail perspective view of a portion of the side of a boat, showing the manner of constructing the same and securing the parts together.

In the drawings the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, A is the keel of a boat, which is preferably made of a strip of board or planking of the form appearing in Fig. 2 and contains a longitudinal groove A'.

B are the strips of metal forming the skin or shell of the boat, and C are the ribs. The ribs are secured to a center strip D within the boat, above the keel, and extend outward and are curved to the desired form at the different parts of the boat.

E are the usual bottom boards. The strips of metal B are cut to the proper form, so that in forming the boat they are simply curved into position, their width varying at different points to give the proper contour to the boat, and their edges are joined by a double seam B', extending from end to end of the boat, a double seam being formed along the center which is embraced by the keel A on the bottom. The strips of metal are put in position on the ribs C, with proper folds for forming the seams, and as each strip is put in position it is secured to the ribs by suitable nails, screws, or other means, as *a*, the preferred fastening being a clenched nail. The folded portion is turned outwardly, as at *a*, so that the nail can be driven entirely under the seam. The second piece, which is properly folded to embrace this seam, is then put in position, and the seam B' is rolled down tight. This seaming forms a perfectly-tight joint in the metal and also gives the boat added strength and rigidity, making it possible to make a very light boat by using thin steel, the structure being found to be very effective, owing to the fact that the metal plates are in nowise injured.

It is found that it is not necessary to do more than fold the seams in position, but of course these seam-joints might be soldered as an extra precaution where desired. The seam folds down securely over the fastener *a*, so that no leak ever occurs at this point. I finish the upper edge of the boat by folding the top strip at each side upon itself, as at I, (see Fig. 4,) and then place rails *e e* on either side of the fold and secure them in position by suitable rivets or bolts *n*.

In each end of the boat, entirely independ-

ent of the shell, I place water-tight chambers F F′, the same being secured under seats G G′; but otherwise they are disconnected from the shell of the boat to serve as air-chambers to insure the buoyancy of the boat even though it is capsized or otherwise filled with water.

Having thus described my improved boat, I desire to state that it can be greatly varied in its details without departing from my invention. The strips of metal B might be seamed together and secured to the framework by other means than I have shown. While the gunwale of the boat as I have produced it is a satisfactory and sufficient construction, I am aware that it could be finished in different ways and still be effective and satisfactory. Other styles of keel might be formed than that which I have here shown. In certain forms of the boat no keel, of course, would be required.

I have particularly illustrated double seaming for joining the longitudinal strips of metal together in this boat, but beg to remark that a simple seam will be found to be very efficient and satisfactory, although the double seam is safer and of course adds more to the rigidity of the shell.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a boat, the combination of the center strip D; ribs C; a skin made up of strips of sheet metal extending longitudinally of the boat, varied in width to give the proper contour to the boat and having their edges joined together by a double seam, and secured to the ribs by suitable clench-nails embraced underneath the seam; and a suitable keel grooved to embrace the center seam of the boat, as specified.

2. In a boat, the combination of a framework; the skin or shell made up of longitudinal strips of sheet metal suitably conformed to the boat, the edges of which are joined by a double seam, suitable fasteners connecting the skin and framework which are embraced by the seams.

3. In a boat, the combination of a sheet-metal shell or skin, the upper edge of which is folded on itself and retained between suitable rails *e*, *e*, as specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

ARTHUR E. CHAMBERS. [L. S.]

Witnesses:

S. A. EARL,

OTIS A. EARL.