E. L. BERTHON.

Collapsible Boat.

No. 167,214. Patented Aug. 31, 1875.

Fig. 1.

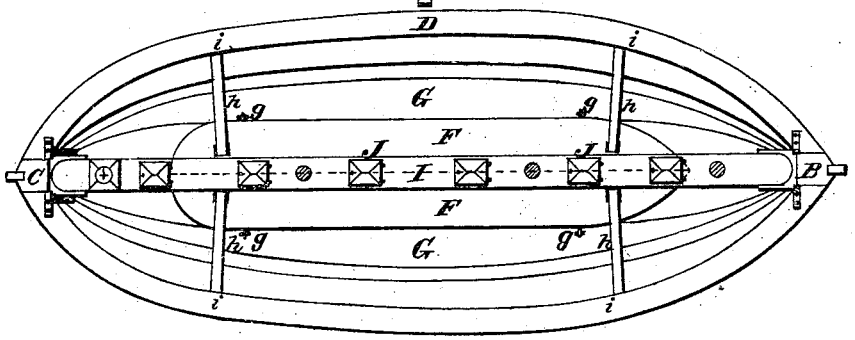


Fig. 2.

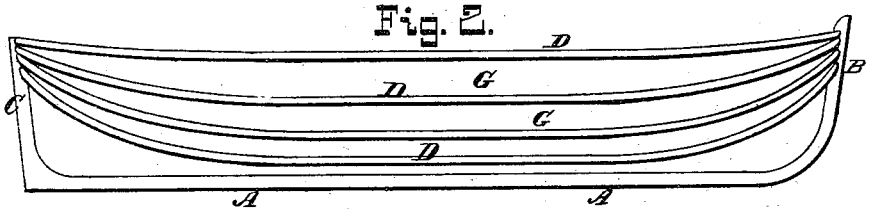


Fig. 3.

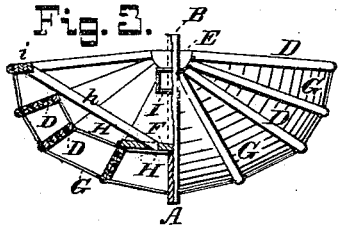


Fig. 5.

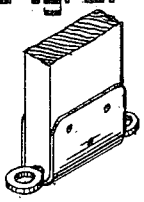


Fig. 6.

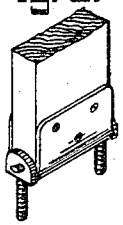


Fig. 4.

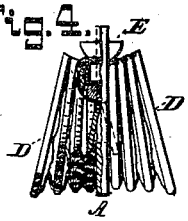


Fig. 7.

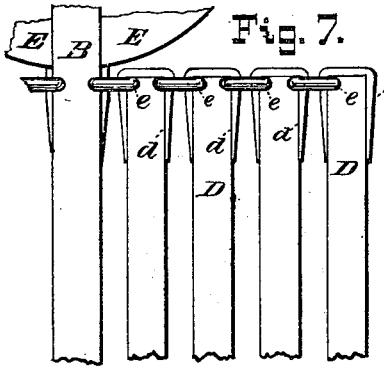


Fig. 8.

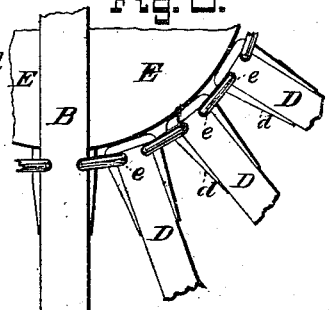


Fig. 9.

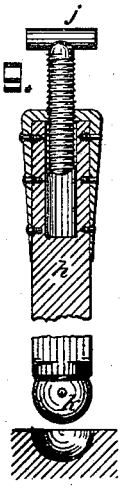
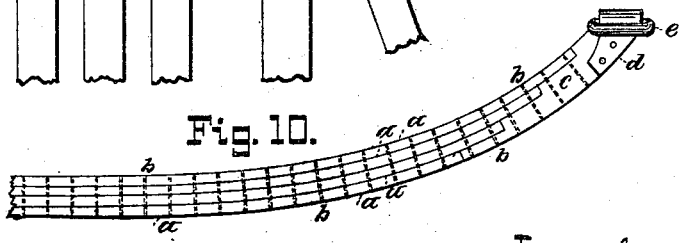


Fig. 10.



Witnesses:

Arthur C. Fraser.

Thomas J. Keighan

Inventor:

Edward Lyon Berthon

Per Burke & Fraser

Attys.

UNITED STATES PATENT OFFICE.

EDWARD L. BERTHON, OF ROMSEY, ENGLAND.

IMPROVEMENT IN COLLAPSIBLE BOATS.

Specification forming part of Letters Patent No. **167,214**, dated August 31, 1875; application filed May 24, 1875.

To all whom it may concern:

Be it known that I, EDWARD LYON BERTHON, of Romsey, Hampshire, England, have invented certain Improvements in Collapsing-Boats, of which the following is a specification:

My invention relates to that class of boats having flexible skins, and capable of being folded or collapsed, so that they may be stowed in a small space for transportation. The invention, consists, partly, in the construction of the timbers, as applied to this class of boats; also, in the hinging of the timbers together at the ends, and the hinging of the bottom boards; also, in the removable stanchions or struts for setting up the gunwales of the boat, as herein described.

In the drawings, Figure 1 is a plan of my improved boat. Fig. 2 is a side elevation of the same. Fig. 3 is an end view, one-half being in transverse section. Fig. 4 is a similar view, showing the boat collapsed. The remaining figures are enlarged detail views of the different parts, which will be hereafter referred to.

In the drawings, A is the keel of the boat, constructed in the usual manner. B is the bow post or stem; and C is the stern-post. These latter are attached rigidly to the keel, forming, with the latter, the standing frame of the boat to receive the remaining parts. D D are longitudinal ribs or side timbers, constructed in a particular way, as follows: Each timber is made up of several thin laminæ or plates, *a a*, placed one upon the other, as shown in Fig. 10, and bent to the proper curve, being held together by means of long bolts *b b*. The ends of the plates *a a* "jog" with notches or steps cut in the solid end pieces *c c*, which are also bent to the proper curve. The timbers D D are linked or hinged together at their ends, one above the other, as shown in Figs. 7 and 8, by means of straps *d d* over their ends, and links *e e*. The lowermost longitudinal timbers on each side are hinged to the bow and stern posts. Fig. 7 shows the timbers as they appear when the boat is collapsed, and Fig. 8 as they appear when the boat is expanded for use. E E are blocks of quadrant shape, secured to each side of the stem and stern posts, and serve to fill up the spaces left between said posts and the ends of the ribs, the latter abutting against and fitting snugly thereto. The bottom boards F F are hinged, at their outer edges, to the lowermost longitudinal timbers at *g g*, the central joint or place of meeting being in the center-line of the boat, the boards being supported by the keel or keelson. The skin G of the boat should be of some impervious and flexible material, as water-proof canvas, said skin or covering being secured to the timbers in some convenient manner. The side timbers D D are made quite wide, and an inner skin, H, of the same material as the outer one, is secured to their inner edges, thus forming water-tight compartments between the two skins, which impart great buoyancy to the vessel or boat.

When the boat is expanded, as shown in Figs. 1, 2, and 3, if not supported in some way, it will collapse of itself. To prevent this I employ stanchions or struts *h h*, which engage with notches in the bottom boards F F, and catch under the uppermost longitudinal timbers at *i i*, being notched at their upper ends for that purpose; or they may be constructed as shown in Fig. 9. In this form the strut is provided with a T-head adjusting-screw, *j*, at the top, to catch under the upper timber, while the lower end *k* is made spherical, and rests in a corresponding indentation in the bottom board. The adjusting-screw enables the strut to be lengthened, thus straining the boat, and rendering it stiff and rigid. This last-described form of strut is the one I claim and prefer to use.

Figs. 5 and 6 are detached views, showing how the thwarts may be hinged at the side timbers, and need no particular explanation. For large boats, to be used on passenger vessels and transports, I provide a longitudinal locker, I, running centrally fore and aft, and supported by being attached directly to the bow and stern posts, or resting on stanchions stepped in the keelson. This locker lies just beneath the thwarts, and is provided with hatches J J, for stowing provisions, water, &c., and also for fixing the compass. It also assists in securing the loggerhead or bollard, to take the cable or towing-line, and supplies a housing for the masts. When stowed the masts are secured beneath the locker, lashed thereto, and the ores and sails on each side.

When the boat is to be collapsed for stowing, the struts *h h* are first removed, and then the bottom boards F F are lifted up in the center by mea; s of rope handles, or any equivalent means. This allows the two lowermost side timbers to close in on the keel, and the other side timbers readily follow, all lying close beside each other, as indicated in Fig. 4.

I have obtained Letters Patent in England for the within-described invention, which Letters Patent were dated in 1873.

Having thus described my invention, I claim—

1. In a collapsing-boat, the locker I, extending longitudinally and centrally, and secured at its ends to the stem and stern posts in such manner as to serve as a brace or support therefor, when provide l with hatches J J for storing provisions, &c., substantially as herein shown and described.

2. In a collapsing-boat, the combination of the side timbers D D, stem-post B, stern-post C, quadrant-blocks E E, links *e e*, and straps *d d*, all arranged to operate in the construction as shown, and for the purpose set forth.

3. The strut *h*, provided with a T-head adjusting-screw, *j*, at the top, to catch under the upper side timber, and a spherical lower extremity, *k*, substantially as shown.

E. L. BERTHON.

Witnesses:

E. EDMONDS,
166 *Fleet street, London.*

S. CROWE,
2 *Waterloo Place, Pall Mall, London.*