E. L. Berthon.
Folding Life Boat.

No. 12,537. Patented Mar. 20, 1855.

Fig: 3

Fig: 1

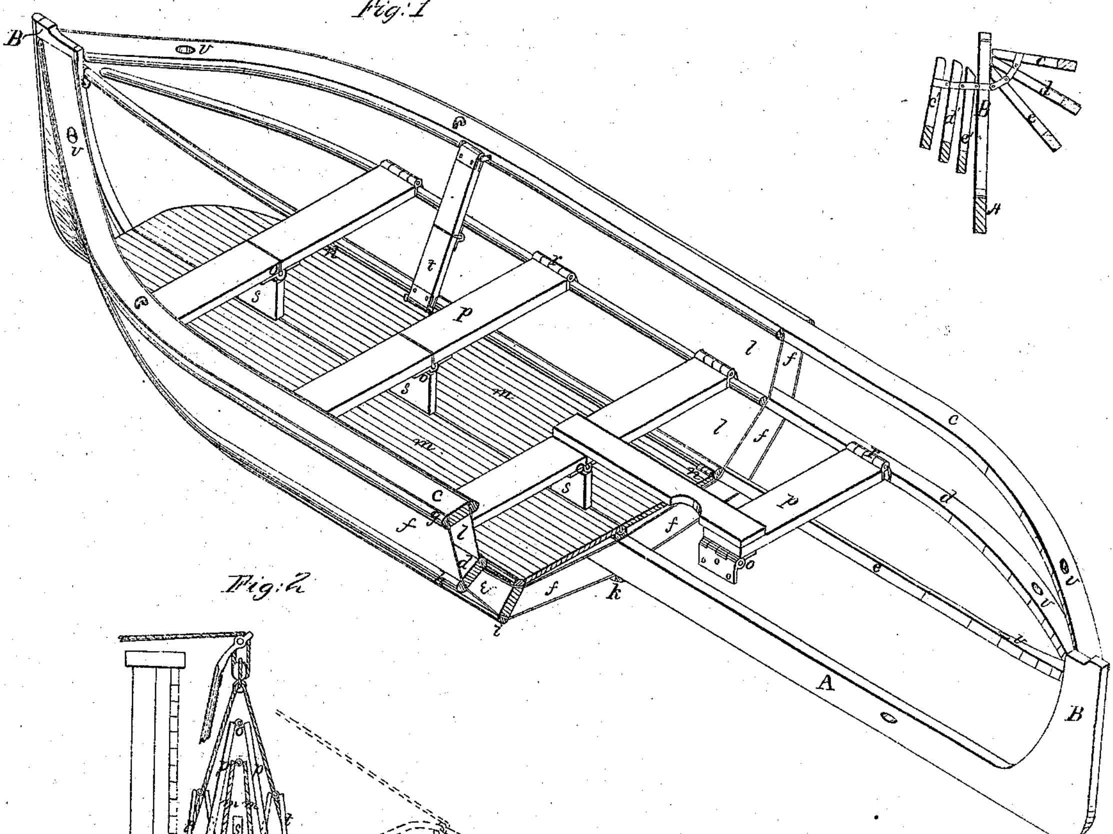
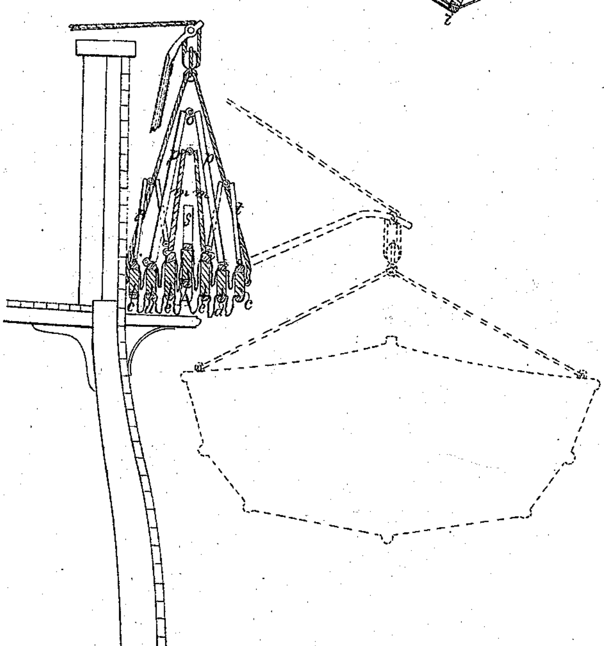


Fig: 2



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD L. BERTHON, OF FAREHAM, ENGLAND.

FOLDING LIFE-BOAT.

Specification of Letters Patent No. 12,537, dated March 20, 1855.

To all whom it may concern:

Be it known that I, EDWARD LYON BERTHON, of Fareham, in the county of Hants, England, master of arts, have invented certain new and useful Improvements in Boats; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view partly in section. Figs. 2 and 3 are sections in detail, and similar letters of reference indicate similar parts in all the figures.

My invention is particularly applicable to the life boats carried by ships for the safety of the passengers and crew in case of abandonment of the vessel at sea, though it is also applicable to boats for any other purposes, to pontoons, &c., and it consists in so constructing them that adequate capacity and strength shall be combined with the property of being collapsible at pleasure whereby when used as ship's boats they may be stowed outboard if desired, and thus a vessel be enabled to carry a large number.

The construction is as follows: A strong timber A is prepared to form the keel or back bone of the boat, and a stem and stern post are firmly affixed to it as seen at B. Near the upper ends of the stem and of the stern post are hinged a series of curved timbers, equal in number on each side, and extending from the stem to the stern. The upper timbers *c* are to form the gunwale of the boat, and may be of such curve that a top view would exhibit the general outline of that of a whale boat. Below this, two, three, or more are placed on each side of such curve and form as will afford an appropriate shape and as seen at *d*, *e*. These timbers are hinged to the post B in such manner that they may either have a radial position, as in Fig. 3, at *c*, *d*, *e*, or be allowed to fold against the post and keel pieces as at *c'*, *d'*, *e'*. Having been extended at proper distances from each other to give the required shape a cover *f* of strong canvass, rendered water and air proof, or other suitable flexible waterproof material, is next secured tightly over the outside and forms, as it were, the equivalent of the usual planking. Wales or strips of wood or bands of metal are then put on over this, directly against each timber as seen at *g*, *h*, *i*, *k*, and being fastened firmly to those, serve the double purpose of protecting the prominent lines from wearing by contact, and also securing the canvass firmly in place. The wale on the bottom at *k*, may be made larger than the others and serve as a keel. The inner edges of the timbers are then to have canvass or other flexible materials of the same character as that upon the outside, extended upon them, as seen at *l* and secured by wales in like manner. The bottom boards may now be put in, being composed of two long planks with battens below *m*, *m*, hinged together along the center, and at their outer edges to the lower wales as shown at *n*, *n*. The thwarts *p*, are also jointed at their centers *o*, and hinged to one of the wales at the ends *r*. The bottom boards rest along the center upon that wale which is put over the keel piece A and rising from the wale under each thwart, is a stud *s*, upon which the center of the thwarts may also rest. The bottom boards and the thwarts are hinged along their center line in order that when the boat is collapsed the two parts of each may be folded up and stand at an acute angle, as seen by reference to the same parts in Fig. 2. The centers of the bottom boards and of the thwarts have also joints, and thus they form toggles by which the boat is mainly kept distended. Two or more toggles of similar construction on each side keep the gunwale timbers *c*, in the expanded position—one of these is seen at *t*, Fig. 1, and they extend from the floor to the wale on the timber *c*. Near the two ends of each of the timbers *c*, *d*, *e*, an aperture *v*, is cut through to allow of the influx and efflux of air in expanding or collapsing the boat and those in the gunwale *e*, may be covered by any suitable cap if desirable.

The boat thus constructed may be closely folded so as to permit it being stowed against the bulwarks of a vessel. In Fig. 2 is a representation, in section, of a boat partially closed and suspended alongside the bulwark of a ship from a derrick by strings attached to the gunwale of the boat. This derrick may be stepped at its lower end on a chainwale, and then to lower away the boat, so soon as the derrick is dropped forward as a davit, the boat will expand by its own weight as seen in the dotted lines. The air flows into the apertures *v*, filling the longitudinal compartments inclosed by the outer and inner canvass and between the timbers. The bottom boards and the thwarts

fall into their proper horizontal positions by gravity, the boat keeper jumps in and sets the toggles, which sustain the gunwales, and the boat is ready for use. When hoisted again to this position it may, for the purpose of collapsing, be suspended by a single pendant at each end. The joints of the gunwale toggles being now pulled a little inward and the centers of the floor and of the thwarts being raised a little, the boat will collapse by its own weight, the air from the compartments passing out at the apertures as it entered. The davits may be now topped up and the whole brought close to the ship's bulwark where it may be secured by appropriate frappings. In addition to these a tarpaulin, painted like the vessel may be securely covered over it, and thus the boat may be carried outboard in safety.

The above description has reference to a boat constructed with only three ribs or timbers on each side, but to obtain more elegant forms four or five may be used and thus very fine water lines are produced.

What I claim as of my invention and desire to secure by Letters Patent of the United States, is—

Hinging the longitudinal ribs of the two sides to the stem and the stern post, in such manner that those ribs shall be capable of being folded down and shall lie parallel with the keel when the boat is collapsed, as described.

E. L. BERTHON.

Witnesses:
R. A. BROOMAN,
ALEXR. SHAIP.