

F. DE NICK & J. F. M. BALDI.

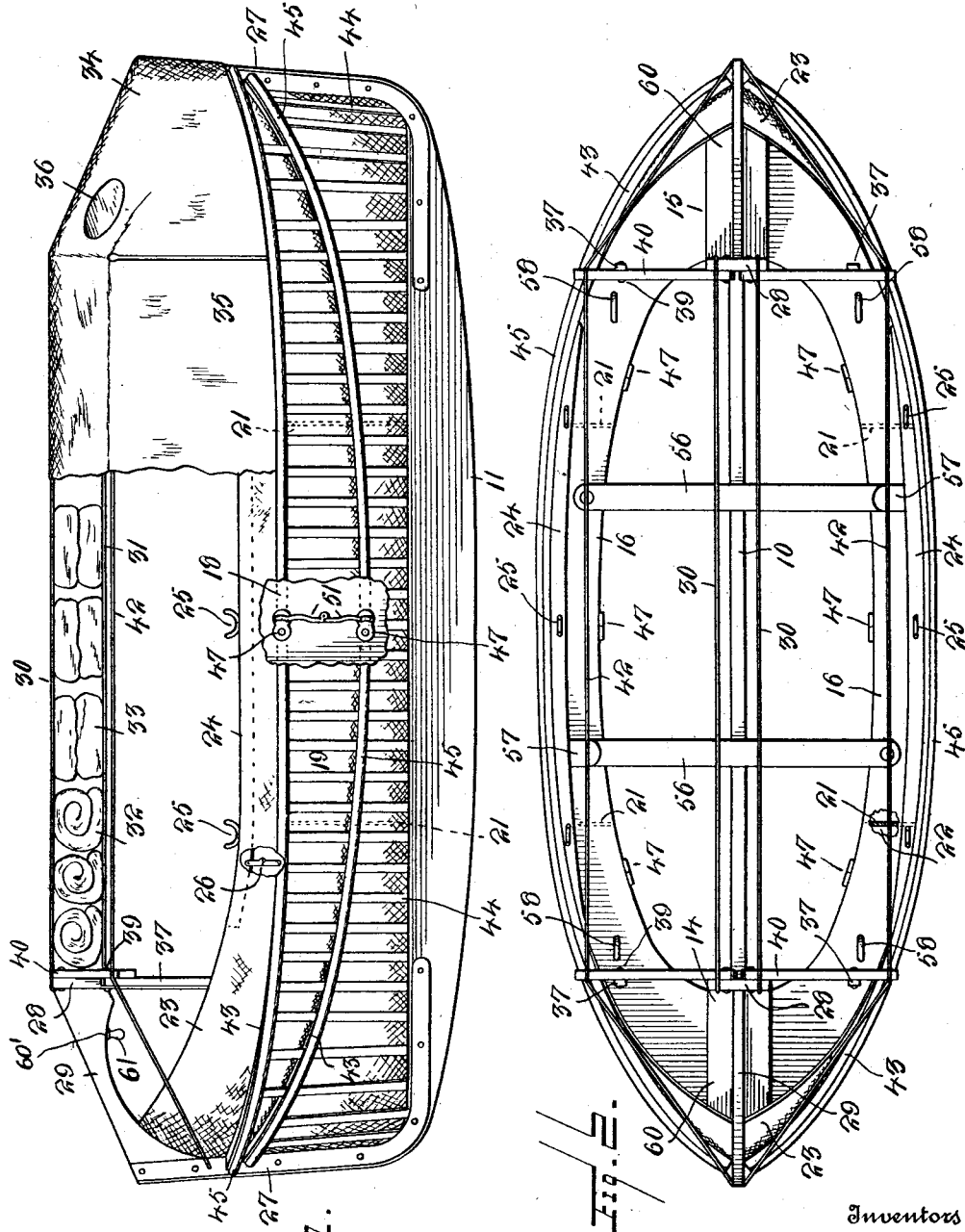
COLLAPSIBLE BOAT.

APPLICATION FILED JUNE 15, 1912.

Patented Mar. 11, 1913.

2 SHEETS-SHEET 1.

1,055,887.



Witnesses
C. R. Ruppert
H. O. [Signature]
Fig. 1.

Inventors
Frank De Nick
Joseph F. M. Baldi
By Victor J. Evans
Attorney

F. DE NICK & J. F. M. BALDI.

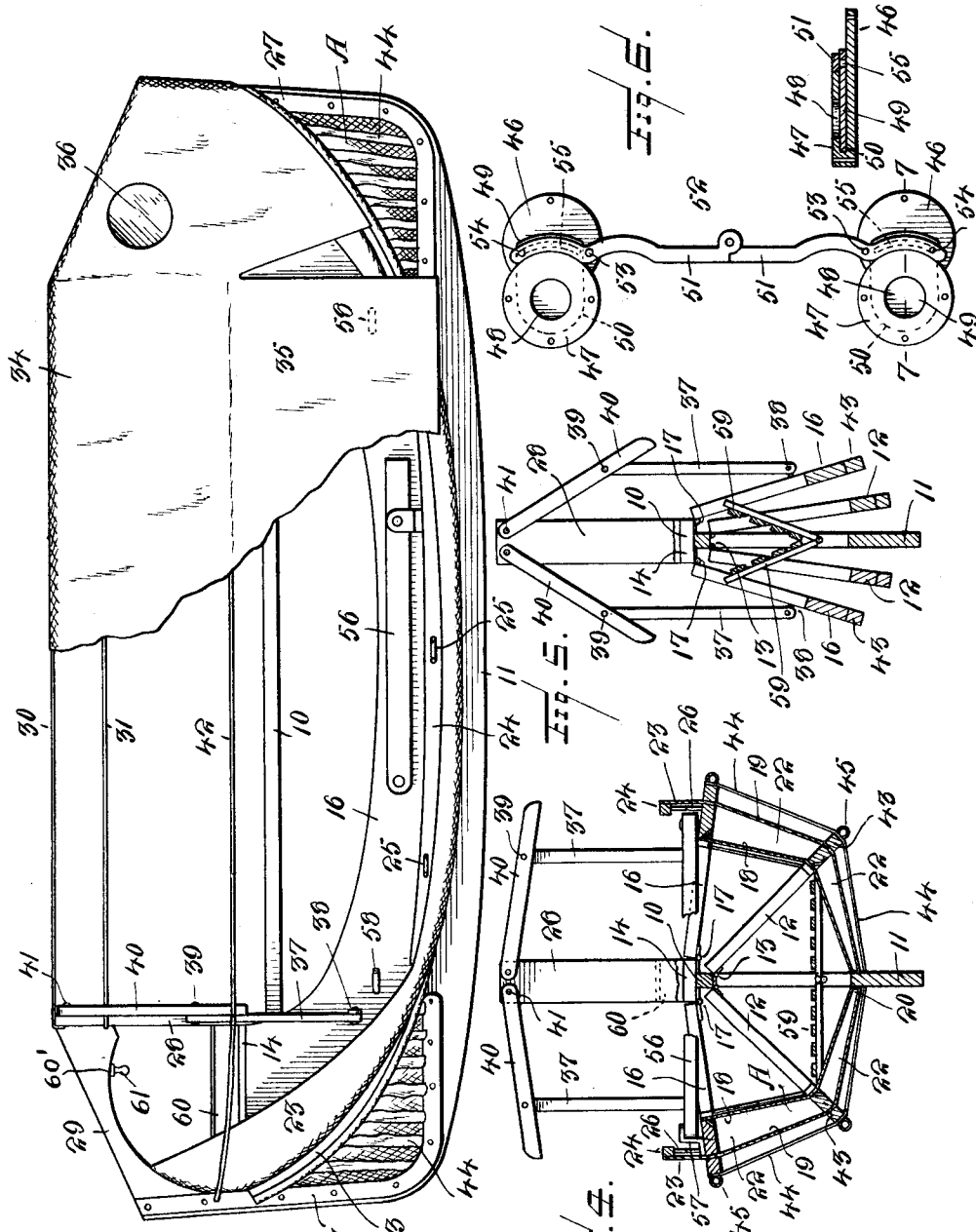
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E. P. Ruppert
F. O. Barker

Inventors
Frank De Nick
Joseph F. M. Baldi
By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

FRANK DE NICK AND JOSEPH F. M. BALDI, OF PHILADELPHIA, PENNSYLVANIA.

COLLAPSIBLE BOAT.

1,055,887.

Specification of Letters Patent.

Patented Mar. 11, 1913.

Application filed June 15, 1912. Serial No. 703,935.

To all whom it may concern:

Be it known that we, FRANK DE NICK and JOSEPH F. M. BALDI, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Collapsible Boats, of which the following is a specification.

The invention relates to boats, and more particularly to the class of collapsible or folding boats.

The primary object of the invention is the provision of a boat wherein the hull or body thereof is readily and easily folded so that when the same is not in use it can be stored within contracted space and also conveniently handled for the transporting of the same from one point to another.

Another object of the invention is the provision of a boat of this character in which the hull or body thereof is formed with inner and outer spaced flexible walls, thus affording bulk heads throughout the sides and bottom thereof thereby assuring a maximum buoyancy so as to minimize the possibility of the sinking thereof for the safety of its occupants.

A further object of the invention is the provision of a boat of this character wherein the air admission and exhaust to and from the bulk heads is controlled through the medium of valves which are automatic in action on the folding and extending of the hull of the boat, so that when the latter is set up the air admitted to the bulk head will be shut off from the atmosphere and contained within the said bulk heads thereby giving maximum buoyancy to the boat and on the collapsing or folding the air contained within the bulk heads will be exhausted and in this manner not interfere with or impede the folding of the body.

A still further object of the invention is the provision of a boat in which the hull thereof carries a canopy support the same being readily foldable on the folding of the hull or body and when the latter is extended the said support will be positioned for receiving the canvas covering or canopy top so as to protect the occupants from the sun rays or during inclement weather.

A still further object of the invention is the provision of a boat of this character in which the hull when extended is protected at the exterior thereof with a plurality of buffer straps so as to avoid the crushing or

breaking in of the hull when the boat strikes a landing or other obstruction in the water.

A still further object of the invention is the provision of a boat of this character which is normally collapsed when suspended from davits and on the launching of the said boat the weight thereof will effect the extending of the same when lowered into the water, thus avoiding the necessity of the manual handling of the boat hull.

A still further object of the invention is the provision of a boat of this type which is simple in construction, strong, durable, reliable and efficient in its purpose, and inexpensive in manufacture.

With these and other objects in view the invention consists in the construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claims hereunto appended.

In the drawings: Figure 1 is a side elevation of a boat constructed in accordance with the invention, the same being partly broken away. Fig. 2 is a top plan view thereof with the canopy removed. Fig. 3 is a view similar to Fig. 1 showing one side of the hull of the boat folded. Fig. 4 is a vertical transverse sectional view through the boat when extended. Fig. 5 is a similar view folded. Fig. 6 is a detail plan view of the valve mechanism. Fig. 7 is a sectional view on the line 7—7 of Fig. 6.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings by numerals the boat comprises a foldable hull or body A, including a center deck beam 10 from which depends a stationary keel rib 11, the same being fixed to the said beam in any suitable manner. Swingly connected to the beam 10 are foldable side ribs 12 which are connected to the said beam 10 by means of the usual type of hinges 13, while supported at opposite ends upon the beam 10 are forward and aft floor center boards 14 and 15 respectively, to which are swingly connected deck ribs 16, the same being hinged at 17 to the said boards 14 and 15, it being seen that the said ribs 12 and 16 can be readily folded by moving the same in the direction of the keel rib 11 as shown in Fig. 5 of the drawings.

Secured to the inner and outer edges of

the ribs 12 and 16 are the inner and outer flexible walls 18 and 19 respectively of water proof fabric sections B, the same being folded on medial lines to provide a bight 20, therein, forming a connecting line for the securing of each section to the keel rib 11, the sections 20 at the bight thereof being suitably fastened to opposite sides of the keel section 11 in a manner to prevent the possibility of the leakage of water therebetween, so as to render the hull at the keel absolutely water proof. The inner and outer walls 18 and 19 are spaced from each other throughout the greater portion of their length so as to provide spaces therebetween and arranged at intervals and connected to the said inner and outer walls 18 and 19 are flexible partitions 21 forming a plurality of independent bulk heads or air compartments 22 within the hull or body A of the boat. It will be noted that the ribs 12 and 16 also serve as partitions so as to divide the bulk heads or compartments 22 into independent inner and outer rows longitudinally of the hull of the boat. The outer walls 19 extend upwardly beyond the deck ribs 16 to provide deck side shields 23, the same having fixed thereto at their inner faces and at the free upper edges thereof reinforcing rails 24 which are located intermediate the ends of the said shields 23, and have mounted therein oar locks 25 of any ordinary well-known type. Pivottally connected to the deck ribs 16 and the rails 24 are hinged break jointed braces 26, which serve to extend the deck shields 24 when the hull or body of the boat is extended for use, and in this manner the said deck shields are prevented from collapsing while the said boat is in use.

The stationary keel rib 11 at the bow and stern end of the hull is formed with upwardly extending cut-water stems 27 which rise above the deck plane of the hull, while secured to the inner ends of the center floor boards 14 are vertical posts or uprights 28, having connected thereto and to the stems 27 reversely inclined crown beams or rails 29, the posts or uprights 28 being connected together by means of spaced horizontally arranged cables 30 and 31 respectively, serving as stringers for supporting therebetween equipment accessories such as blankets 32, life preservers 33, or any other articles, the cables 30 being also designed to support a canopy or hood cover 34, which extends over the beams or rails 29 and is formed with side curtains 35 and transparently covered openings 36 in the ends thereof covering the bow and stern portions of the boat, it being understood of course that the said openings 36 may be arranged either on the starboard or port side or in both sides thereof.

Arranged on opposite sides of the up-

rights or posts 28 and spaced therefrom are props 37, the lower ends of which being pivoted at 38 to the deck rib 16, while their upper ends are pivoted at 39 to swinging rafters 40 which are pivoted at 41 to the uprights or posts 28, it being seen that when the hull is collapsed the said rafters will fold inwardly and on the extending of the hull the rafters will swing outwardly for spreading and supporting the canopy or top covering 34 whereby the occupants of the boat will be protected from sun rays and inclement weather. Passed through the stems and connected to the rafters 40 near the outer ends thereof are cables 42 which prevent the sagging of the canopy or top covering 34 when in spread position.

Secured to the outer side of the outer section 19 of the hull are longitudinally disposed cleats 43, the same being arranged in alinement with the ribs 12 and 16 and have fixed to their outer edges a series of spaced buffing or bumping straps 44 preferably constructed from leather, the inner ends of which are secured to the keel rib 11. These straps 44 are spaced from the outer face of the section 19 so as to protect the same when the hull abuts against an obstruction or a landing, thereby obviating the possibility of damaging the outer wall 19. Also mounted upon the cleats 43 throughout the length thereof are resilient strips 45 which are designed to absorb shocks and jars incident to the striking of the boat against a landing so as to obviate damage thereto.

The admission and exhaust of air to and from each pair of inner and outer bulk heads or compartments 22 is controlled by valve mechanism comprising spaced base or bearing plates 46, the same being disk-like and are fixed to the outer face of the inner wall 18 of the hull, and are formed with valve casings 47 of circular formation which are also fixed to the said inner wall 18, the casing 47 being provided with central ports 48 communicating with the inner and outer bulk heads or compartments 22. The ports 48 are opened and closed by valve slides 49, working within guideways 50 formed within the said casings 47, and have connected thereto actuating arms 51 connected together by means of a hinge joint 52, the rods 51 being designed to rock upon pivots 53 swingingly connecting the same to the base plates 46, and said arms are formed near their outer ends with guide lugs 54 which engage in arcuate-shaped slots 55 formed in the valve slides 49, so that on the folding of the rods 51 the said slides 49 will be moved for opening the port 48 during the folding or collapsing of the hull of the boat and thereby permitting the escape of air from the bulk heads or frames 22. On the extending of the hull the rods 51 will unfold into alinement with each other and at

the same time force the slides 49 into position in the valve casing 47 for closing the ports 48 therein, so that the air admitted through the said ports 48 will be confined within the bulk heads or compartments 22, thus when the bulk heads or compartments are filled with air after the hull has been extended and is in the water, should the outer wall 19 become punctured it will be impossible for the hull to sink as the air confined within the bulk heads will prevent this from occurring. Also the bulk head when filled with air increases the buoyancy of the boat.

Pivotaly connected to the deck ribs 16 are reversely swinging cross brace bars 56, the free ends of which are adapted to engage in stationary keepers 57 also fixed to the deck ribs, and when the bars 56 are engaged with the latter the hull of the boat is held extended and prevented from accidentally folding or collapsing.

Mounted in the deck ribs 16 are pairs of alining eye members 58 through which are trained davit cables not shown whereby the said boat may be suspended from davits when in collapsed or folded condition and on the letting out of the said cables for the lowering of the boat the weight of the keel rib 11 will effect the automatic extending thereof.

Mounted within the hull of the boat and connected to the keel rib 11 is a two-part folding platform or slatted foot-board 59 on which are adapted to stand the occupants of the boat when the same is extended for use.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the construction and operation of the invention will be clearly understood, and therefore, a more extended explanation has been omitted.

Provided on the center floor boards 14 are suitable boxes 60, to receive articles when not in use, the boxes being closed by covers which may be hinged or otherwise mounted thereon.

Mounted in the beams or rails 29 are suitable electric light sockets 60', the same being connected with a suitable circuit including a battery, not shown, and in these sockets are engaged electric bulbs 61, the latter distributing light through the openings 36, in the canopy or hood cover 34, at the starboard and port sides of the boat, it being understood of course, that any other form of illuminating apparatus may be employed if desired.

What is claimed is:—

1. In a boat, a foldable hull, comprising a stationary keel rib, swinging side and deck ribs hingedly connected with the keel rib, spaced inner and outer flexible walls con-

nected with said ribs to provide bulk heads therebetween, bars swingingly connected to one of the deck ribs, keepers fixed to the other deck rib and adapted to receive the free ends of said bars collapsible deck side walls integrally formed with the outer wall, means for extending the said side walls and sustaining the same taut and bumping straps fixed to the ribs and spaced from the outer wall.

2. In a boat, a foldable hull, comprising a stationary keel rib, swinging side and deck ribs hingedly connected with the keel rib, spaced inner and outer flexible walls connected with said ribs to provide bulk heads therebetween, bars swingingly connected to one of the deck ribs, keepers fixed to the other deck rib and adapted to receive the free ends of said bars, collapsible deck side walls integrally formed with the outer wall, means for extending the said side walls and sustaining the same taut, bumping straps fixed to the ribs and spaced from the outer wall, and automatically actuated means for permitting the admission and the exhaust of air in and from the bulk heads.

3. In a boat, a foldable hull, comprising a stationary keel rib, swinging side and deck ribs hingedly connected with the keel rib, spaced inner and outer flexible walls connected with said ribs to provide bulk heads therebetween, bars swingingly connected to one of the deck ribs, keepers fixed to the other deck rib and adapted to receive the free ends of said bars, collapsible deck side walls integrally formed with the outer wall, means for extending the said side walls and sustaining the same taut, bumping straps fixed to the ribs and spaced from the outer wall, automatically actuated means for permitting the admission and the exhaust of air in and from the bulk heads, and a folded platform connected with the keel rib and arranged within the inner wall.

4. In a foldable boat, a hull comprising a stationary keel rib, swinging side and deck ribs hingedly connected with the keel rib, spaced inner and outer flexible walls connected with the said ribs to provide bulk heads therebetween, valve means operative upon the folding and unfolding of the hull for controlling the air supply and exhaust to and from the bulk heads, and a canopy support and cover carried by and foldable and unfoldable with the hull.

In testimony whereof we affix our signatures in presence of two witnesses.

FRANK DE NICK.
JOSEPH F. M. BALDI.

Witnesses:

E. R. EASTBURN,
VITO M. BALDI.