G. R. BAIR.

FOLDING BOAT.

APPLICATION FILED DEC. 12, 1914.

1,151,435. Patented Aug. 24, 1915.

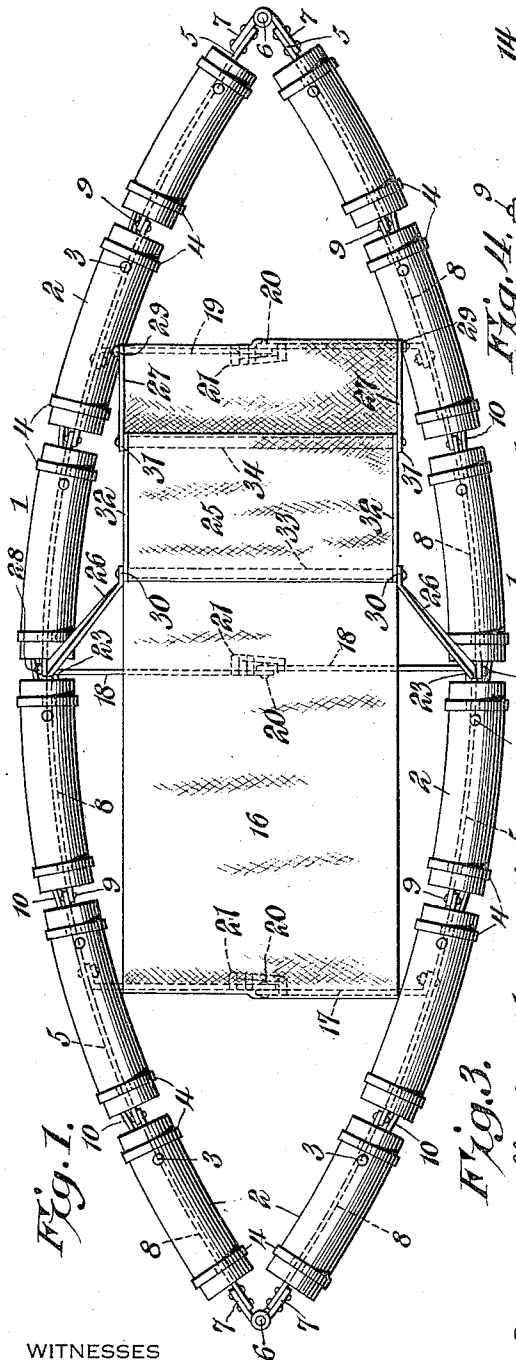

Fig. 1.

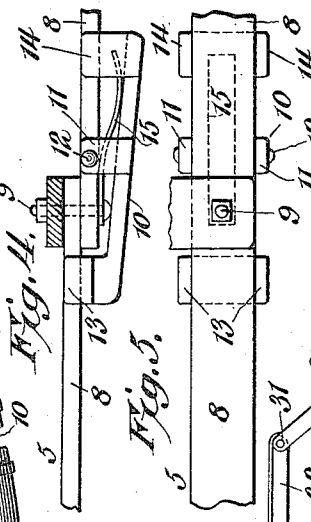

Fig. 4.

Fig. 5.

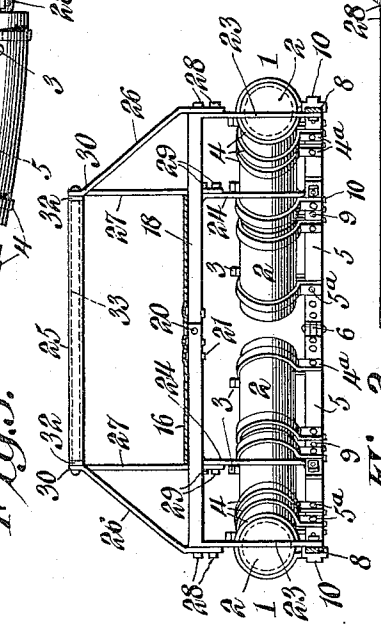

Fig. 3.

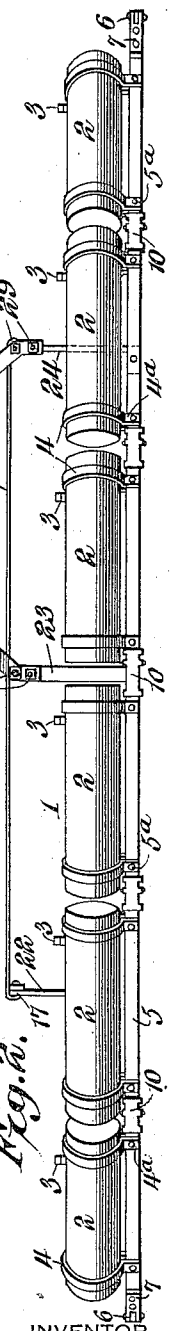

Fig. 2.

WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE R. BAIR, OF LAWRENCE, KANSAS, ASSIGNOR OF ONE-HALF TO FRANK H. BENNETT, OF LAWRENCE, KANSAS.

FOLDING BOAT.

1,151,435. Specification of Letters Patent. Patented Aug. 24, 1915.

Application filed December 12, 1914. Serial No. 876,912.

To all whom it may concern:

Be it known that I, GEORGE R. BAIR, a citizen of the United States, residing at Lawrence, in the county of Douglas and State of Kansas, have invented a new and useful Folding Boat, of which the following is a specification.

The invention relates to improvements in folding boats.

The object of the present invention is to improve the construction of folding boats and to provide a simple, practical, and inexpensive boat, designed for hunting and various other purposes, and adapted to collapse compactly to enable it to be easily carried, and capable also of being easily handled and propelled through the water at a relatively high speed.

A further object of the invention is to provide a bottomless boat equipped with a deck and a seat and adapted to be driven through the water at a much greater speed than a boat having a bottom.

With these and other objects in view the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims appended hereto, it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:—Figure 1 is a plan view of a folding boat constructed in accordance with this invention. Fig. 2 is a side elevation of the same. Fig. 3 is a central transverse sectional view of the boat. Figs. 4 and 5 are detail views illustrating the construction of the locking device for maintaining the parts of the boat in rigid relation when the boat is arranged for use.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

In the accompanying drawing, in which is illustrated the preferred embodiment of the invention, the body of the boat comprises in its construction two oppositely curved sides 1, each consisting of a longitudinal series of buoyant sections 2 which are curved longitudinally to conform to the curvature of the sides of the boat. The buoyant sections 2, which may be constructed of cork or any other suitable material, preferably consist of hollow inflatable rubber cells of approximately cylindrical form, and provided with suitable air valves 3 for enabling the air cells to be inflated when it is desired to arrange the boat for use, and to be deflated for folding the boat. The buoyant sections of the sides of the body of the boat are mounted within bands 4 of curved longitudinal side ribs 5, constructed of steel or other suitable material and located beneath the buoyant sections and connected at their ends by hinges 6 having angularly disposed ribs 7 arranged at the bow and stern of the boat and adapted to permit the side to fold inwardly, as hereinafter fully explained. The boat is pointed at each end and the longitudinal side ribs are composed of a series of sections or members 8 connected by transverse pivots 9 and which permit the sides of the boat to fold compactly when the buoyant sections 2 are deflated. The sections or members of the longitudinal ribs or braces are of a length slightly greater than that of the buoyant sections, which are preferably maintained in spaced relation as shown, but they may be placed as close together as desired. Each section or member 8 of the longitudinal ribs or braces is shown provided with a pair of bands which are arranged to embrace the buoyant sections adjacent to the ends thereof, but the bands may be arranged in any other desired position and any desired number of bands may be employed. The terminals 4^a of the bands are pivoted to the sections or members of the longitudinal ribs or braces by rivets 5^a, or other suitable fastening means to enable the bands to be folded against the sections or members 8 when the buoyant sections are collapsed, but the terminals of the bands may be connected with the longitudinal braces or ribs in any other desired manner.

The terminal hinges 6 permit the sides of the boat to collapse inwardly and the transverse braces or ribs enable the sections or members thereof and the buoyant sections to fold longitudinally on one another, whereby the body of the boat may be compactly collapsed to enable the same to be easily carried. The size of the body of the boat, when folded, will depend upon the length of the buoyant sections and the sec-

tions or members of the longitudinal ribs or braces, which may be constructed of any desired length to suit the requirements.

The sections or members of the ribs or braces are locked in rigid relation by latches 10, consisting of levers located at the joints in the longitudinal ribs or braces and each mounted on one of the sections or members and engaging the adjacent section or member, as clearly illustrated in Fig. 4 of the drawing.

Each lever 10 is provided at an intermediate point with spaced ears 11, which are arranged at the upper and lower edges of one of the sections or members 8 and are pivoted to the same by a vertical rivet 12 or other suitable fastening device, which pierces the ears and the said section or member. The front arm or portion of the lever 10 extends beyond the joint and is provided with spaced laterally projecting lugs 13 which are arranged to embrace the adjacent section or member 8 at the side edges thereof, whereby the pivotally connected sections or members 8 are maintained in rigid relation and are prevented from turning on the transverse pivot 9. The lever is provided at its rear end with spaced laterally projecting flanges 14, which slidably embrace the side edges of the section or member to which the lever 10 is pivoted. This steadies and braces the lever 10, which is maintained in its engaging position by a spring 15, secured at one end to the rib or brace by the pivot 9, and having its free end bearing against the rear operating arm of the lever. The spring normally urges the rear operating arm of the lever 10 away from the adjacent bar or member 8, and maintains the lugs or jaws 13 in engagement with the adjacent section or member 8. The rear arm of the lever 10 is adapted to be pressed inwardly against the action of the spring to move the jaws or flanges 13 out of engagement with the adjacent section or member 8 to permit the parts to fold.

The space between the sides 1 is open, the boat being bottomless and adapted to be propelled through the water by a paddle, oars, or other motive power at a much higher rate of speed than boats having a hull or bottom.

The boat is equipped with a deck 16 constructed of canvas or other suitable material and supported above the horizontal plane of the body by transverse braces 17, 18, and 19, which also maintain the sides in rigid relation and prevent the same from collapsing inwardly. The superimposed deck is located a sufficient distance above the water line to prevent it from coming in contact with the water in the normal condition of the boat.

Each brace is composed of two sections or members connected at their inner ends by a pivot 20 and each brace is equipped with a latch 21 constructed similar to the latch heretofore described. The terminal braces are provided at opposite sides of the boat with arms 22, 23, and 24, which are detachably secured at their lower ends to the longitudinal ribs or braces to enable the transverse brace to be readily disconnected from the sides of the boat when it is desired to fold the latter. The arms of the transverse brace extend above the body of the boat and support the transverse portions of the brace in a superimposed condition, and arrange the deck the desired distance above the water line. The canvas deck is adapted for holding luggage and other articles, and the boat is also provided with a folding seat 25, located above the rear portion of the deck and connected with the transverse braces 18 and 19 by inclined braces 26 and 27. The inclined braces are detachably secured at their lower ends to the transverse braces by bolts 28 and 29, or other suitable fastening means, and are pivotally connected at their upper ends 30 and 31 to side bars 32 of the seat. The side bars 32 are connected by transverse bars 33 and 34, and the bars 32, 33, and 34 form an oblong seat frame over which the canvas or other material of the seat is stretched. The deck, the seat, and the supporting means are adapted to be compactly folded when detached from the body of the boat.

What is claimed is:—

1. A folding boat including sides composed of buoyant sections pivotally connected so as to fold on one another, said sides being spaced apart to provide a bottomless boat, and a superimposed deck supported by the sides above the buoyant sections.

2. A folding boat including sides composed of buoyant sections pivotally connected so as to fold on one another, the sides being hinged together at their terminals to enable them to collapse inwardly, transverse braces maintaining the sides in rigid relation, and a superimposed deck supported by the braces above the sides.

3. A boat comprising curved sides connected together to form a pointed bow, and composed of buoyant sections, said sides being spaced apart to provide a bottomless boat.

4. A folding boat comprising outwardly curved sides hinged together at their opposite ends to form a pointed bow and a pointed stern and to permit the sides to collapse inwardly, said sides being composed of buoyant sections, each section being pivotally connected and adapted to fold one upon another.

5. A folding boat comprising outwardly curved sides hinged together at their ends, each side composed of pivotally connected members, and buoyant sections arranged

above and connected with the members of the sides and foldable with the same, said buoyant sections being shorter than the said members.

6. A folding boat including outwardly curved longitudinal ribs or braces hinged together at their ends and composed of pivotally connected sections or members, buoyant sections connected with the sections or members of the ribs or braces and foldable with the same, and means for locking the sections or members of the ribs or braces in rigid relation.

7. A folding boat including longitudinal ribs or braces composed of sections or members having transverse connecting pivots, latches consisting of levers each mounted on one section or member and provided with means for engaging the adjacent section or member to lock the sections or members in rigid relation, and buoyant sections connected to and foldable with the sections or members of the ribs or braces.

8. A folding boat including outwardly curved sides hinged together at their ends and composed of foldable buoyant sections, and transverse braces connecting the sides and maintaining the same in rigid relation, said braces having superimposed intermediate portions, and a deck supported by the transverse braces.

9. A folding boat including outwardly curved sides hinged together at their ends and composed of foldable buoyant sections, transverse braces connecting the sides, said braces being composed of sections detachably secured at their ends to the sides of the boat and pivotally connected at their inner ends, and latches for maintaining the sections of the braces in rigid relation.

10. A folding boat including outwardly curved sides hinged together at their ends and composed of foldable buoyant sections, foldable transverse braces connecting the sides of the boat and maintaining the same in rigid relation, said braces having superimposed intermediate portions, a seat, and inclined braces connected with the transverse braces and supporting the seat.

11. A boat composed of outwardly curved sides, means for pivotally connecting the sides at each end, said sides being made up of a series of pivotally connected members, buoyant sections arranged above the said sides in the same vertical plane, said buoyant sections being shorter than the said members, and means for connecting said sections to said members, said sides being spaced apart to provide a bottomless boat.

12. A foldable boat comprising outwardly curved sides hinged together at their ends and formed of foldable buoyant sections, foldable transverse braces connecting the sides of the boat and maintaining the same in rigid relation, and a superimposed deck supported by the said braces above the said sides.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GEORGE R. BAIR.

Witnesses:
FRANK H. BENNETT,
ALBERT T. HATFIELD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."