

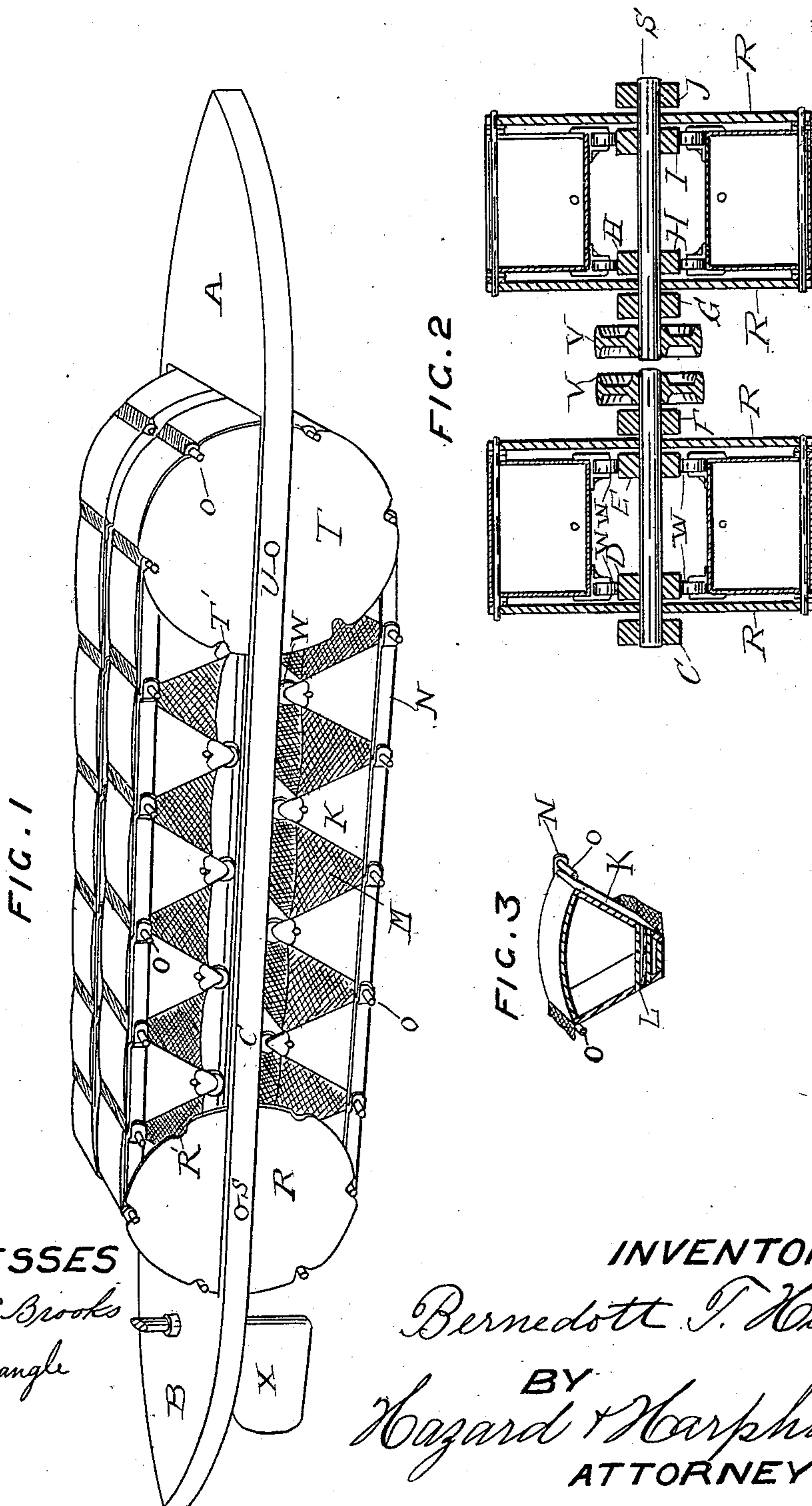
No. 694,274.

Patented Feb. 25, 1902.

B. T. HEROLD.
BUOYANT PROPELLER.

(Application filed July 3, 1900. Renewed Feb. 7, 1901.)

(No Model.)



UNITED STATES PATENT OFFICE.

BERNEDOTT T. HEROLD, OF VALLEJO, CALIFORNIA.

BUOYANT PROPELLER.

SPECIFICATION forming part of Letters Patent No. 694,274, dated February 25, 1902

Application filed July 3, 1900. Renewed February 7, 1901. Serial No. 46,437. (No model.)

To all whom it may concern:

Be it known that I, BERNEDOTT T. HEROLD, a citizen of the United States, residing at Vallejo, in the county of Solano, State of California, have invented new and useful Improvements in Sectional Rotary Boats, of which the following is a specification.

My invention relates to boats principally intended for navigating inland and shallow waters; and the object thereof is to provide a boat of simple construction that will roll over the water instead of passing through the water. I accomplish this object by the mechanism described herein and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the lower portion of my boat or what may be termed the "hull," the upper part of the boat being omitted for clearness of illustration. Fig. 2 is a cross-section of Fig. 1. Fig. 3 is a cross-section of one of the rigid air-tight cells which form a portion of what may be termed the "rotary" hull of my boat.

In the drawings, A is the bow of the boat, and B the stern thereof, connected by timbers C, F, G, and J, to which are securely affixed timbers D, E, H, and I, respectively, which provide a support and track for rollers W, attached to the rigid air-tight cells K, which cells are preferably in shape the frustum of a wedge, having a segmental base formed of buoyant material and through which extend tubes L from side to side, so that air may pass freely from one collapsible cell M to another. These rigid air-cells are joined one to another by a flexible bellows-like connection impervious to air and water, thereby making collapsible air-cells between the rigid cells, thus forming a hull of an endless chain of alternate rigid and collapsible air-cells. Across each end of the rigid cells is rigidly affixed, preferably at the base, a metallic bar N, having a hole in each end, through which project rods O, one of which is preferably rigidly affixed to one side of the base of each of the cells K. These bars and rods form a chain at the bases of the rigid air-cells. The projecting ends of the rods are adapted to be caught in slots R' in the periphery of driving-wheels R, rigidly mounted upon shafts S, which are rotatively mounted in or upon timbers C, F, G, and J and to which power

is applied by means of pulleys V to drive wheels R.

T represents wheels similar in form to wheels R, mounted on shafts U, the slots T' of which engage the ends of rods O. Power may be applied to shaft U, as well as shaft S; but I prefer to apply the power solely to shaft S, in which case wheels T are idlers.

X is the rudder.

If desired, by making wheels R and T larger and mounting shafts S and U upon the timbers sufficient space may be obtained between the cells on the water and those above to provide storage room for freight and the working machinery or for the carriage of passengers.

I have illustrated my boat provided with a hull formed of two endless chains of air-cells, as I prefer that number, so that each chain of cells may be operated independently of the other, which gives better control of the boat; but one or any number of endless chains composed of air-cells may be used, the essential feature of my invention being a hull for a boat comprising an endless chain of air-cells, the alternate cells being collapsible and the intermediate ones rigid, and having a tube passing therethrough to connect the air-spaces of the collapsible cells.

When power is applied to drive shaft S, the revolution of wheels R causes the rotation of the air-cells, one at the bow of the boat contacting with and resting upon the water as fast as one at the stern of the boat leaves the surface of the water, and the boat is thereby propelled upon rather than through the water.

In the construction of my boat the air-cells should be so proportioned to the weight to be carried that those resting upon the water should not be submerged more than one-third of the height of the cell, which will provide a boat of very light draft, thereby permitting the navigation of very shallow waters. As the cells do not move through the water, if the hull should strike a snag or run upon a bar the cells in contact therewith would remain stationary thereon until they were at the rear of the boat, when they would be lifted therefrom, and thus the speed of the boat would not be retarded.

Having described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. In a boat, a hull comprising an endless chain composed of alternate rigid and intermediate collapsible air-cells, said collapsible cells having an air-passage connecting them together passing through the rigid cells, in combination with means to rotate said chain.
2. In a boat, a hull comprising an endless chain of alternate rigid and intermediate collapsible air-cells; an air-passage through the rigid cells connecting the air-space of the collapsible cells; bars affixed to the ends of the

rigid cells having holes in the ends thereof, a rod projecting through the holes in said bars, and adapted to enter slots on the driving-wheel; a driving-wheel having slots on the periphery thereof affixed to a shaft; a shaft and means to operate said shaft.

In witness that I claim the foregoing I have hereunto subscribed my name, this 23d day of June, 1900, at Los Angeles, California.

BERNEDOTT T. HEROLD.

Witnesses:

G. E. HARPHAM,
C. H. BENNETT.