R. H. TUCKER.

Surf-Boat.

No. 215,843. Patented May 27, 1879.

Fig. 1.

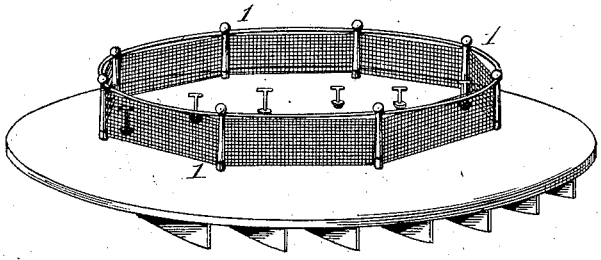


Fig. 2.

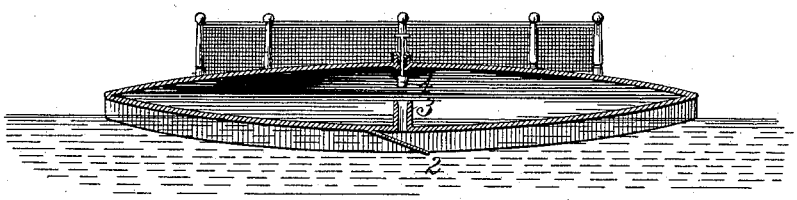
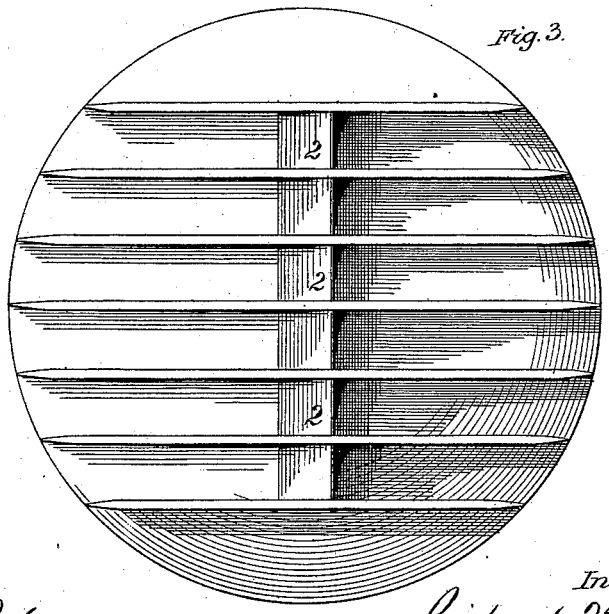


Fig. 3.



Witnesses:

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Atty

UNITED STATES PATENT OFFICE.

RICHARD H. TUCKER, OF WISCASSET, MAINE.

IMPROVEMENT IN SURF-BOATS.

Specification forming part of Letters Patent No. **215,843**, dated May 27, 1879; application filed November 1, 1878.

To all whom it may concern:

Be it known that I, RICHARD H. TUCKER, of Wiscasset, Lincoln county, Maine, have invented an Improvement in Surf-Boats, of which the following is a specification.

The object of my invention is to produce a surf-boat which shall combine the greatest possible buoyancy with a form least liable to capsize, and which is adapted to be propelled by the expulsion of air against the water underneath the boat.

It consists in making the entire interior of a boat (made circular in form, and with spherical upper and lower surfaces) an air-reservoir capable of holding compressed air, and having pipes opening into the hold, and communicating with the outside, as will be hereinafter fully set forth.

In the drawings, Figure 1 is a perspective. Fig. 2 is a section on a line parallel with the keel; and Fig. 3, a view of the bottom.

The deck and bottom of my boat are made exactly the same in shape, and each, approximately, in the form of a smaller section of a sphere, having the proportion of one (1) foot in depth to twenty (20) in the transverse diameter of the boat. The bottom is provided with keels, with valves, and air-pipes, as set forth in the specification of the application referred to.

The general shape of the boat is the same as that shown in another application filed in the Patent Office of the United States of the same date as this application, in which I have claimed broadly the shape of upper and lower surfaces in the form of a smaller section of a sphere. In this, however, I do not build any elevated deck, the upper spherical section forming the deck, and corresponding exactly in shape and surface to the bottom. Upon this deck I erect strong posts 1 1, connected by a stout rail or netting, preferably of wire, for the protection of the passengers.

I have shown seven (7) keels, but they may be increased or diminished in number without material difference in result. As the valves 2 2 are fixed, and are depended on to steer the boat, it is better to have about the number shown. These keels extend from edge to edge, and are preferably made with the bottom curving on a line parallel with the bottom of the vessel. Directly over the center of each valve is a pipe, (marked in the drawing 3,) which opens into the interior of the hull. Each of these pipes is provided with an independent stop, (shown in Fig. 2, at 4,) by which the escape of air to the pipe is regulated or checked altogether. These stops may be connected so as to be moved simultaneously or separately, as required, the rods for operating the stops extending through stuffing-boxes to the deck. The stops and mechanism to operate and hold them may be made in any convenient form, as the skill of the mechanic may suggest. It is necessary only that they be capable of operation from the deck and independently.

The hull is made preferably of boiler-iron, air-tight, with suitable hatches, also capable of being closed air-tight, for ingress into the interior. The shell is required to be of strength sufficient to resist the expansive force of air compressed within it to a degree which shall serve to propel the boat the shortest distance required of surf-boats. It may also be provided upon the deck with an air-pump to supply the air which may be exhausted in the propulsion.

In operating the boat, the interior is first filled with air compressed to the required degree of tension. If it be desired to propel the boat in a direct line, the valves are opened uniformly, and the escape of the air under strong compression against the valves and along the channels propels the boat.

To change the course or to turn the boats around, it is only necessary to close, either partially or wholly, the valves on one side.

The form of the boat renders it impossible to capsize it in any sea, and the entire space beneath the deck being filled with air under all circumstances it is rendered buoyant in the highest degree. In fact the motor itself, instead of, as in ordinary cases, loading the surf-boat, in this case serves to buoy it in the water. It has also the advantage of easy propulsion from the peculiar lines of the bottom and sides. As it needs no other attendance than the working and proper regulation of the valves it may be controlled by one man alone.

The form of the boat described, but not here specially claimed, specially adapts it to be

used as a reservoir for holding the compressed air, which constitutes the motor. Its shape renders it, however, light, difficult to capsize, while the upper surface, being only slightly rounded, serves as a deck.

I am aware that a tank or compartment for holding compressed air within the hold of a vessel is not new. I am also aware that it is not new to use air compressed in such compartments to propel the vessel. I therefore lay no claim to a compressed-air reservoir, either alone or in connection with pipes, to direct the air against the water.

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

A surf-boat of the form described, the hull of which forms an air-tight reservoir, capable of resisting the strain of compressed air, provided with keels forming air-passages, and fixed valves, and with pipe or orifices provided with valves and opening into the hold of the boat, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RICHARD H. TUCKER.

Witnesses:
L. W. SEELY,
J. W. HAMILTON JOHNSON.