No. 660,658. Patented Oct. 30, 1900.

J. M. RICHENS.

BUOYING MEANS FOR WATER CRAFT.

(Application filed Feb. 20, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

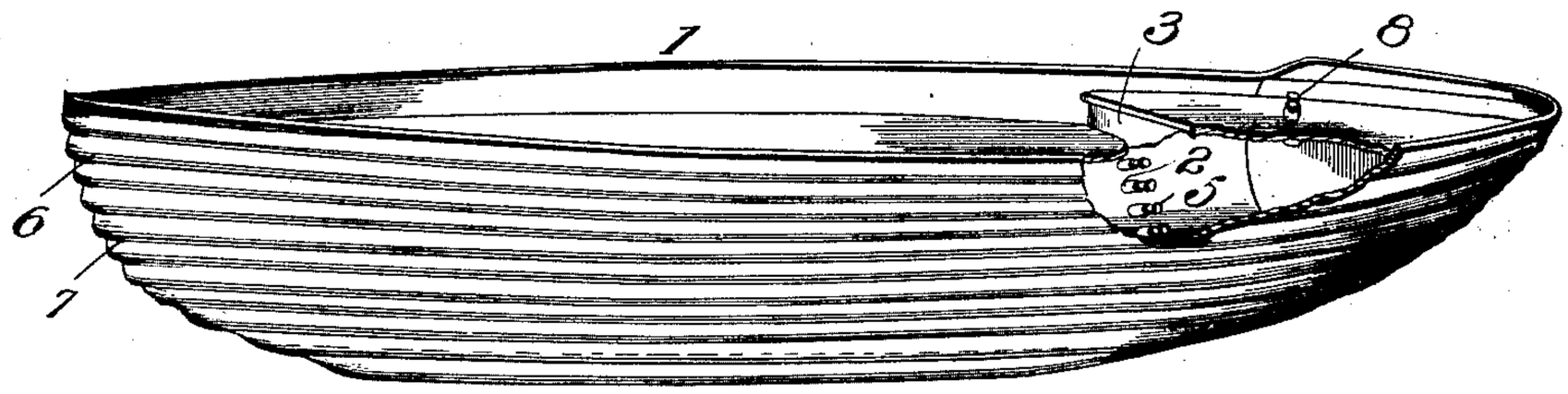

Fig. 2.

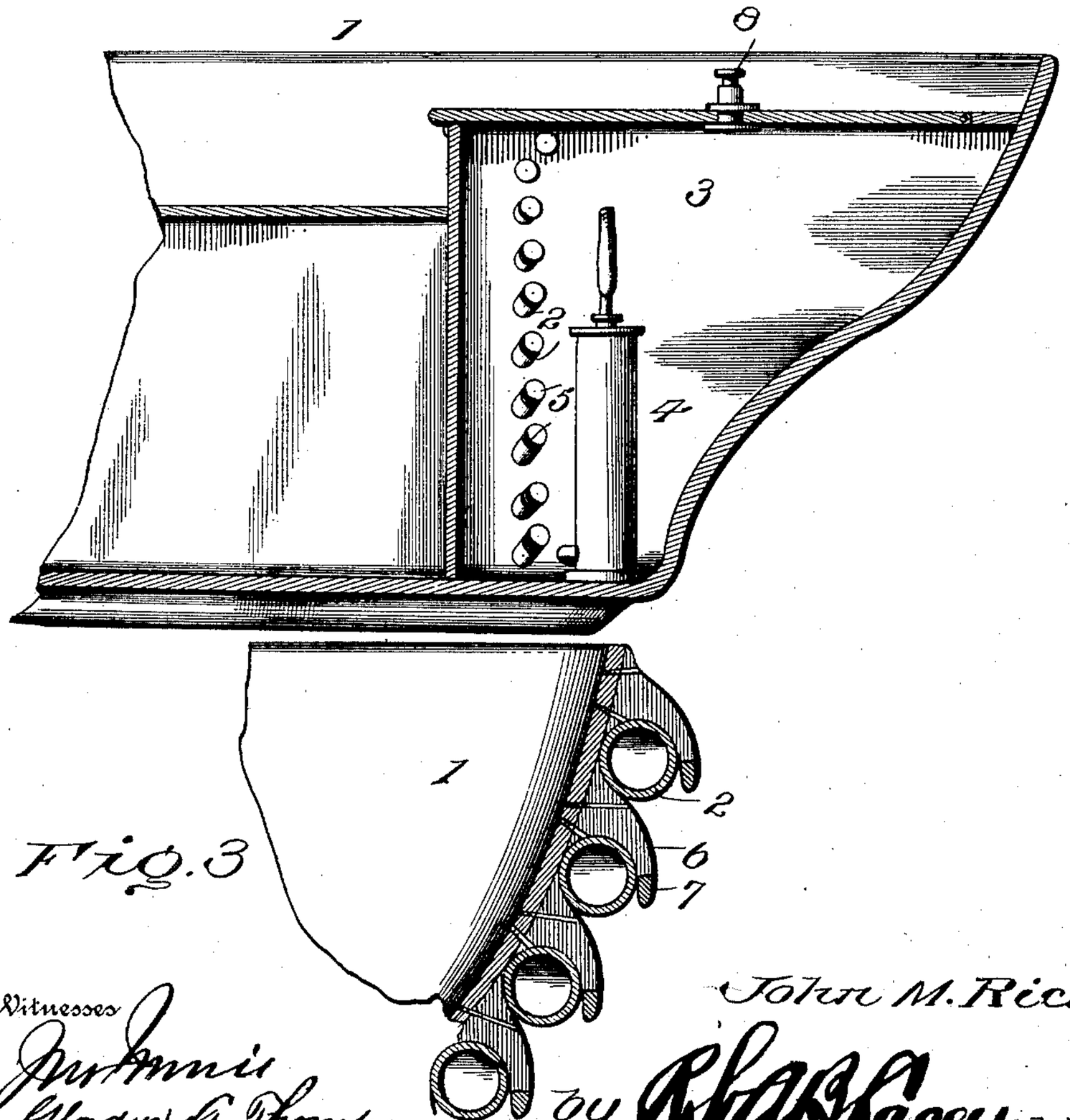

Fig. 3

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FIG. 4.

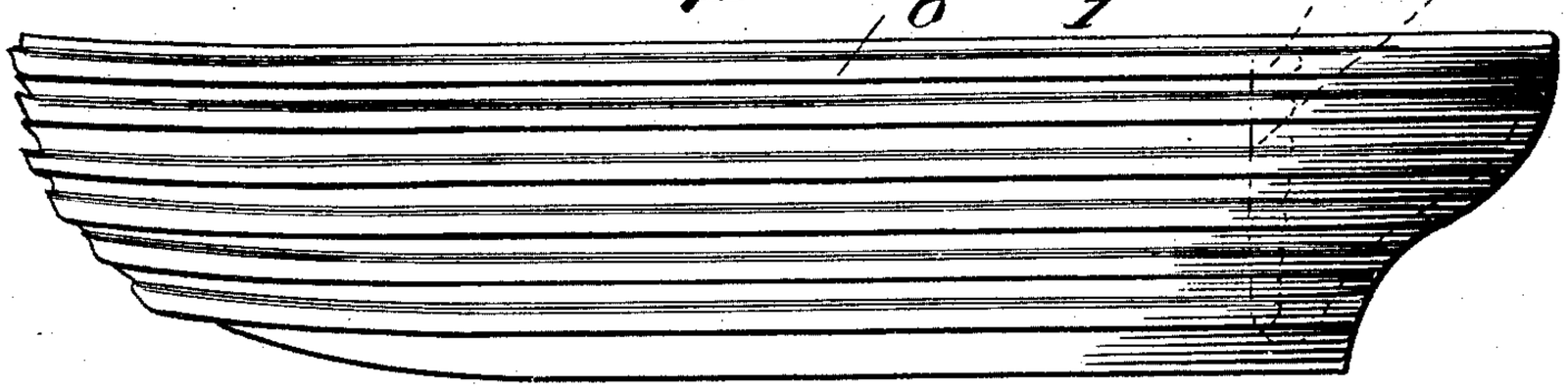


FIG. 5.

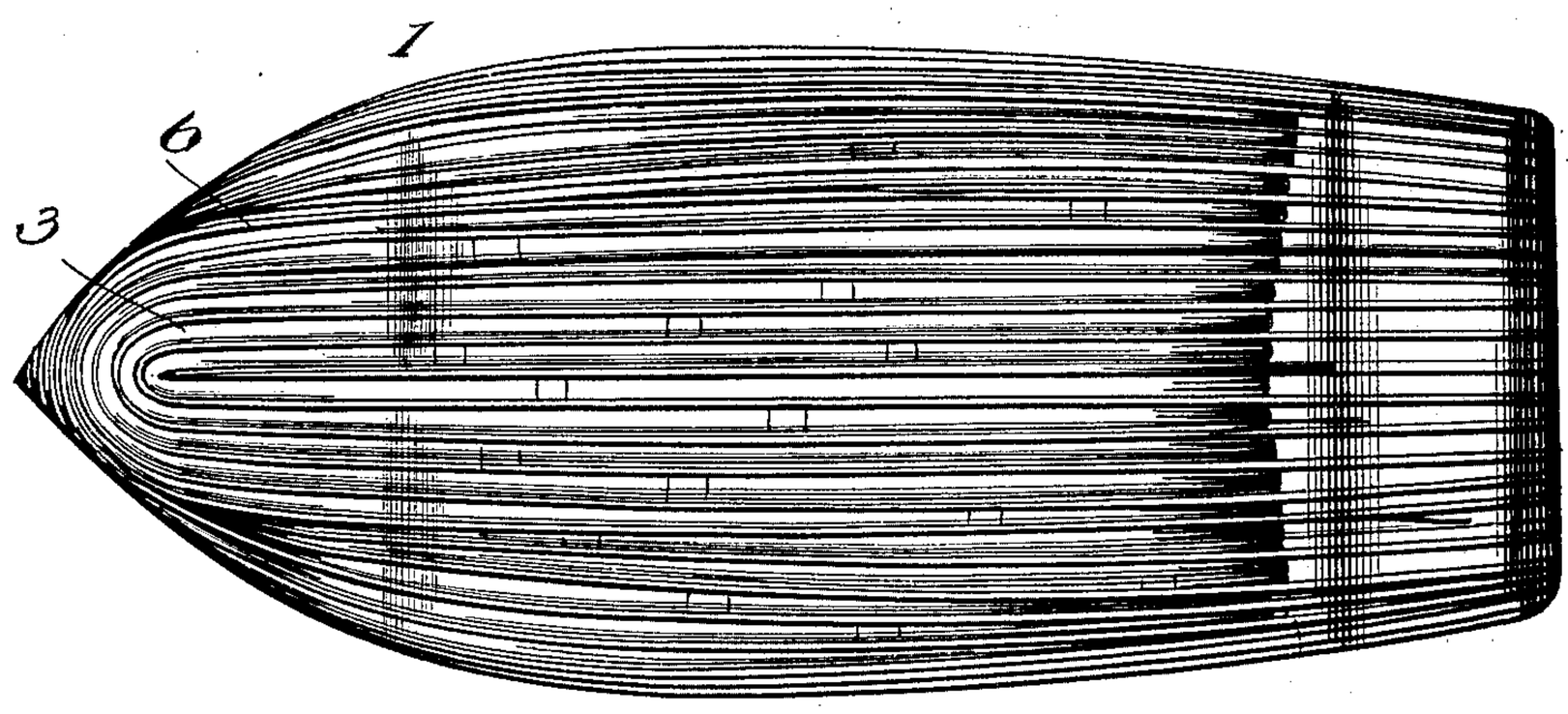
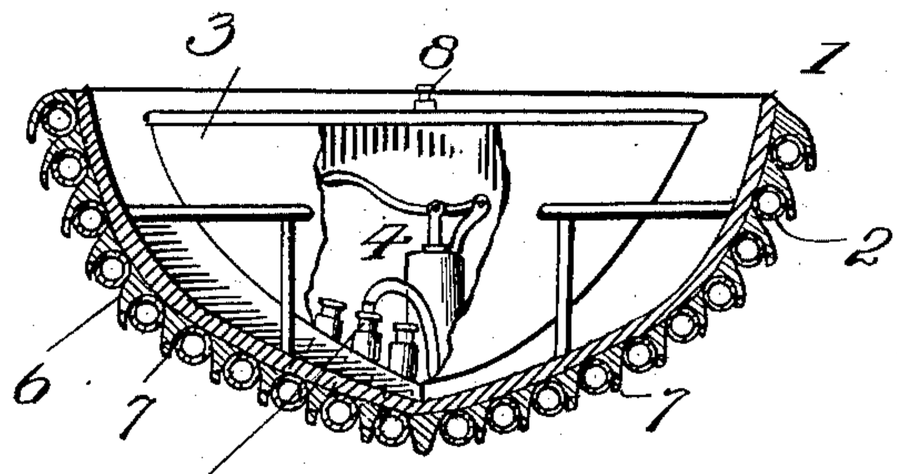


FIG. 6.



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UNITED STATES PATENT OFFICE.

JOHN M. RICHENS, OF FITZGERALD, GEORGIA.

BUOYING MEANS FOR WATER-CRAFT.

SPECIFICATION forming part of Letters Patent No. 660,658, dated October 30, 1900.

Application filed February 20, 1900. Serial No. 5,956. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. RICHENS, a citizen of the United States, residing at Fitzgerald, in the county of Irwin and State of Georgia, have invented certain new and useful Improvements in Buoying Means for Water-Craft; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to means for buoying or floating water-craft when otherwise in a sinking condition. It can also be utilized to lighten the craft in smooth waters, whereby greater speed may be attained by the expenditure of a given force or the same speed maintained at a less expense of power.

The invention is designed for all kinds, sizes, and shapes of water-craft; and it consists, essentially, of a multiplicity of inflatable and collapsible tubes arranged exterior to the hull of the craft and lengthwise thereof, each of said tubes being of a single length, or in the case of large craft composed of sections any one of which can be replaced in the event of damage thereto at a small cost compared with removing and replacing the entire tube.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and the drawings hereto attached.

While the essential and characteristic features of the invention are necessarily susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view, the rear portion being broken away to expose the air-compartment. Fig. 2 is a longitudinal section, on a larger scale, of the rear portion of the boat. Fig. 3 is an enlarged transverse section showing more clearly the relation and construction of the inflatable tubes and the ribs. Fig. 4 is a side elevation of a boat, showing the application of the invention. Fig. 5 is a bottom view thereof. Fig. 6 is a cross-section.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The type of boat is immaterial and subordinate to the invention and the hull 1 may have any cross-sectional and longitudinal outline. A series of tubes 2 are located exterior to the hull and extend lengthwise thereof, so as to offer a minimum amount of resistance to the movement of the craft through the water. These tubes are collapsible and inflatable and may be of rubber, textile, or a combination of the two and are attached at their ends to the bow and the stern, respectively, of the boat.

The chamber or box 3 is provided at one end of the boat and the tubes 2 lead therein at one end. This box receives the air-pump 4 or other inflating device for the tubes which are independently inflatable, each having an air-valve 5 of any construction, to which the inflating device is adapted to be coupled. By making the box or compartment 3 air-tight and attaching the pump or inflating device thereto all the tubes may be simultaneously filled with air, thereby saving time, which is of advantage in an emergency requiring quick action.

A series of ribs 6 are attached to the outside of the hull and extend lengthwise thereof about in parallel relation and serve to hold the tubes 2 properly positioned and to protect them from injury. These ribs are of wood, and their inner ends or edges are wide to obtain a firm bearing against the side of the hull and to receive the screws or like fastenings employed for attaching them to the side and bottom of the boat. Metal strips 7 are applied to the outer edges of the ribs to prevent injury thereto when coming in contact with an object. The side ribs project laterally and downwardly from the hull and materially increase its width and serve to steady the boat and prevent in a measure the rolling thereof in rough water.

By having the tubes 2 exterior to the boat they are readily accessible for any purpose, the capacity of the boat is not decreased, and the invention can be applied to any boat in service without changing its interior construction or any part. The sectional form of the

tubes 2 is best adapted for large craft, as repairs are reduced to a minimum cost.

In rough water the tubes 2 are deflated to permit the boat to set as deep in the water as possible for safety and comfort. Should the boat spring a leak or it be desired to lighten it, the tubes are inflated, thereby causing the boat to rise or set higher in the water because of the greater displacement. Hence in smooth water the speed can be increased or the boat run at a saving of force.

When the chamber or box 3 is utilized as a header or recipient for the air under pressure, the pump or other inflating means will be attached to the valve 8, applied to the cover, and the latter will be secured, so as to withstand the internal pressure. It is needless to state that the box must be air-tight to prevent escape of air. The tubes are preferably inflated in this manner when time is a factor. Otherwise they may be separately inflated.

The tubes 2 above the water-line may be of wood for buoyant purposes or may be constructed of light metal and constitute storage-chambers for compressed air, the latter being utilized for quickly charging the collapsible and inflatable tubes in an emergency.

Having thus described the invention, what is claimed as new is—

1. In water-craft, an end chamber, a series of tubes arranged exterior to the hull and having individual valved connection with the said end chamber, and a cover for said chamber having a valve, and means for inflating the said tubes separately, by application of the pump to each, or simultaneously by having the pump fitted to the valve of the cover, substantially as set forth.

2. Water-craft having inflatable tubes exterior to the hull and attached thereto, and ribs separating the tubes, substantially as described.

3. A boat provided exterior to its hull with a series of tubes, the tubes below the water-line being collapsible and inflatable and the tubes above the water-line constituting storage-chambers for compressed air, by means of which the collapsible tubes are adapted to be inflated, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN M. RICHENS. [L. S.]

Witnesses:

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