2 Sheets--Sheet 1.

J. B. STONER.

Improvement in Life-Saving Apparatus.

No. 131,719. Patented Sep. 24, 1872.

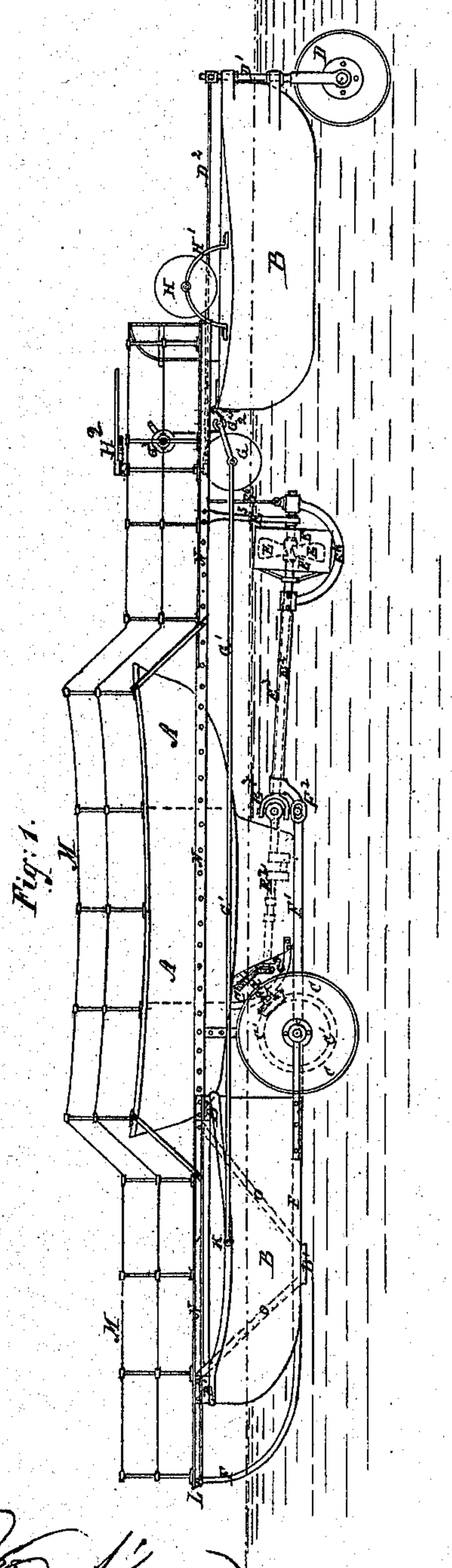

Fig: 1.

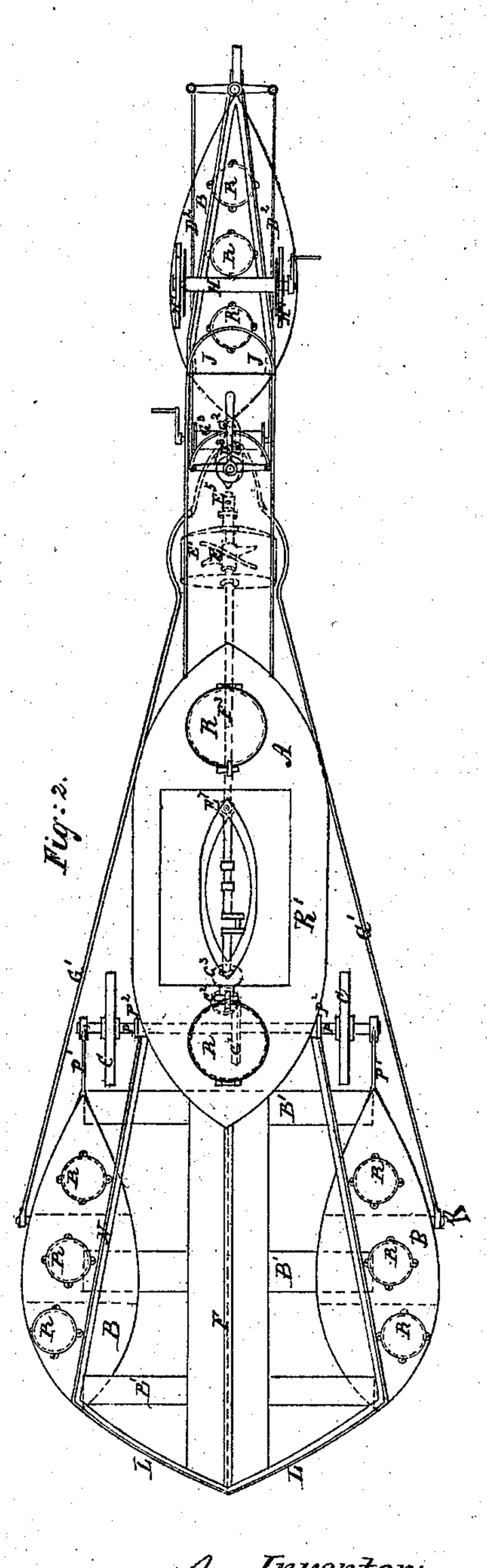

Fig: 2.

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2 Sheets--Sheet 2.

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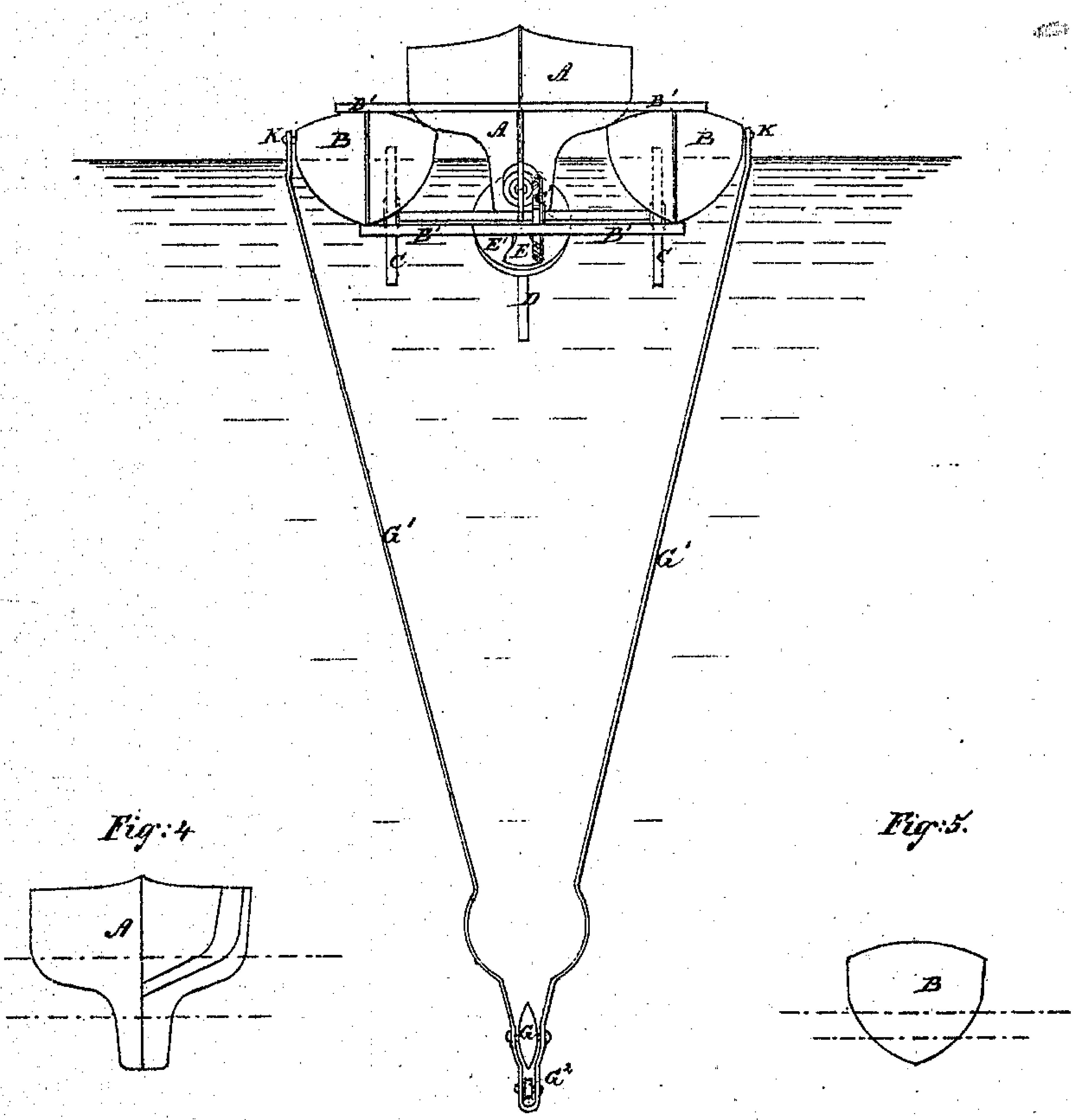
Fig: 3.

Fig: 4 *Fig: 5.*



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IMPROVEMENT IN LIFE-SAVING APPARATUS.

Specification forming part of Letters Patent No. **131,719**, dated September 24, 1872.

To all whom it may concern:

Be it known that I, JOHN B. STONER, of New York, in the county of New York, in the State of New York, have invented a new or Improved Apparatus for Carrying Lines in Rough Seas; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in three water-tight boats or oblong buoys, made of iron or other suitable material, each divided into three or more separate water-tight compartments, and connected with a skeleton frame-work, made of iron or other suitable material, to and on which frame-work is attached the fourth or main boat, the four constituting a complete apparatus for traveling through rough seas. Two of said boats or buoys form the bow or forward part of said apparatus, and the other boat or buoy forms the after or stern part of the same, or, vice versa, one forward and two aft. In either case the two boats or buoys form the beam of the apparatus, and the distance between them will always be determined by the size of the several boats and the length of the apparatus. On the skeleton frame-work and between said three boats or buoys is attached the main boat in such a position as to be carried above the water-line by the three boats or buoys, excepting a narrow portion in the center and bottom of said boat, which dips below the water-line a sufficient depth, and is of sufficient width to allow the working of the screw-shaft. The sizes of the three buoys or boats must always be determined by the size of the main boat and the weight of boiler, engine, and screw to be used, as the three should always have sufficient carrying capacity or buoyancy to carry the main boat with the machinery and necessary fuel and provision; and the whole complete should have sufficient buoyancy to carry at least thirty persons in addition to fuel, &c., and can be made to carry any number of persons; and as the main boat is carried above the water-line and is entirely composed of water-tight bulkheads and air-chambers, except about six by eight feet in its center, in which space the boiler and engine are placed. Said boiler and engine may be protected from the sea by incasing them in iron or other metal. Each side of said main boat is provided with large sea-valves, through which the water may pass in case the sea should pass over it, which, however, will seldom, if ever, occur, as the carrying capacity of said three boats or buoys must in all cases be double that actually required to carry the apparatus. In running into the wall of the sea the forward boats or buoys will rise with the sea and raise the middle or main boat and allow the sea to pass underneath it. The result would be the same if the sea came after, as the single boat or buoy forming the stern or after part of said apparatus carries one-third of the main boat, while two-thirds of said main boat is carried by the two forward boats or buoys. Thus, by placing the bow of the main boat between the stern or after ends of the two forward boats, while the after boat or buoy is from five to fifty feet (more or less) aft the stern of the main boat. If a sea should overtake the apparatus the after boat or buoy will instantly rise to the top of the water and raise the main boat, allowing the sea to pass underneath it. To effectually guard against capsizing I attach, by joints, to the outer sides of each forward boat or buoy the ends of a V-shaped iron or arched metal, in the center of or at the opposite end of which I place a wheel-shaped weight, with axle or journal in the center, and working in bearings in said V-shaped frame, the length of said V-shaped frame varying according to the length of the apparatus, and so arranged that the weight can be lowered at will, when required, in a rough sea. The object of having the weight round, as described, is to guard against the possibility of damage or inconvenience arising from its striking the ground while passing through the surf, either to or from the shore, as it will turn on its axle or journal the instant it strikes the bottom. The weight of said wheel will vary from fifty to five hundred pounds, (more or less,) according to the size of said apparatus. In order that said apparatus can be quickly and safely launched and landed in or through the surf, I provide it with three wheels, made of wood or iron. In either case I make them with from four to twelve inch tread, to prevent them from sinking in the gravel or sand; and, when made of iron, I

make them hollow and water-tight, so as to give them sufficient buoyancy to carry their own weight. Two of them are on one axle, and said axle works on bearings attached to the keel, and abaft said two forward boats or buoys. Outside of said wheels there is also a bearing on each side of the main boat, said wheels being fixed on said axle between said bearings. The length of said axle varies according to the length or breadth of beam of said apparatus. In the center of said axle is a spur-wheel, which connects with cog-wheels attached to and on the forward end of the screw-shaft. Said wheel can be thrown into gear with a lever at will; hence, in launching or landing, said wheels are thrown into gear, and as the third wheel forms the rudder, the apparatus keeps moving and can be moved on land as well as in the water. Thus, every time the sea recedes and the wheels strike the bottom, it keeps moving forward by their action, and as the screw never touches the bottom, and is revolving at full speed all the time, every time the waves overtake the apparatus it is carried forward by the screw, and by this means all the danger and difficulty heretofore experienced in launching or landing or traveling through the surf for the saving of life and property can be avoided. As the several boats or buoys are all water-tight, there is no danger of the apparatus sinking; and the screw and the several boats or buoys are thoroughly protected against damage by striking on the bottom or bed of the river or channel. As the screw is placed about one-fourth the length of the apparatus forward of the after boat or buoy, and the shaft on which it works is connected with the main shaft in the boat by a universal joint, and is so arranged that it can be raised or lowered at any time, the screw can never come out of the water until the wheels take the ground; hence there can be no danger of ever losing control of the apparatus in a rough sea. The length of the small boats or buoys will vary from five to thirty feet, (more or less,) their width or diameter being regulated by their length, and the length of the main boat depends on the size and length of the small ones, varying from ten to fifty feet (more or less.)

In order that my invention may be more fully understood, I now proceed to explain the accompanying drawing, which is intended to illustrate the same.

Description of the Drawing.

Figure 1, Sheet 1, is an elevation; Fig. 2, Sheet 1, is a top-plan view; Fig. 3, Sheet 2, is an end view with ballast lowered; Fig. 4, Sheet 2, is a sectional view of the main boat A; and Fig. 5, Sheet 2, is a sectional view of the boats or buoys B.

A is the main boat. B are the water-tight boats or buoys. B′ are cross-planks connecting the two forward boats or buoys. C are the wheels. C^1 is the spur-wheel on the center of the axle P. C^2 C^2 are cog-wheels, attached to a shaft on the outside of the main boat, and connecting the spur-wheel C^3 on the screw-propeller shaft with the wheel C^1 on the axle P. D is the rudder. D^1 is the shaft or upper portion of the rudder. D^2 are the rudder chains or ropes. E is the screw. E^1 is the tube inside of which the screw-propeller revolves. E^2 is the propeller-shaft. E^3 is a tube around the outer or rear section of the propeller-shaft. The object of the tube E^1 around the screw-propeller, and the tube E^3, around the screw-propeller shaft, is to prevent persons from being injured by coming in contact with the screw-propeller, or their clothing winding around the shaft while in the water in case of wreck or other accident. E^4 is a guard in the form of a semicircle, connected at one end to the after end of tube E^3, and at the other end to the extreme or outer end of the screw-propeller shaft, outside of the slotted iron frame E^5, while the middle of said guard is directly under and attached to tube E^1. The object of this guard is to protect the screw in shallow water. E^5 is a slotted iron frame, the upper end of which is securely fixed to the frame or bridge N, and in the lower end of said slotted iron frame is a box or bearing, on which the journal of the screw-shaft rests or turns, and the bearing is so constructed that it will slide up and down in said slotted frame. By this sliding motion of the journal the screw can be raised and lowered at will through the intervention of the chain or rope E^6, and thus carried sufficiently high when out of water to allow the apparatus to be moved over uneven ground without injury to the screw. E^7 is the universal joint connecting the inner or crank portion with the outside portion of the screw-shaft. Tube E^3 has bearings at each end, and rests on journals turned on the screw-shaft, and one end of guard E^4 is firmly fixed to the end of said tube next to the screw, while its opposite end embraces a journal on the end of the screw-shaft, thereby allowing the screw and its shaft to revolve freely within the tubes E^1 and E^3, respectively, said tubes being held in their position or prevented from revolving by the short arm F^2, said arm being firmly fixed to the forward end of tube E^3, and connected with the iron guard or brace F^1 by a sliding joint. F is an iron guard passing from the center of axle P, over and attached to the bottom cross-piece B^1, thence up to the iron guard L. G is the round weight. G^1 is the V-shaped iron, frame, to which the wheel or weight is attached, as shown. G^2 is a sheave, fixed in the end of said V-shaped frame, and outside of or abaft said round weight, for the purpose of assisting in raising and lowering said weight, by means of a rope or chain, one end of which is attached to and passes around windlass G^3, and the other end is fastened to the top and bow of the after boat or buoy. H is a reel for carrying lines. H^1 are the bearing or head. blocks on which the journals of the reel H rest- H^2 is the steering apparatus. K are the joints

at the ends of the V-shaped iron, where they are connected to the outer sides of boats or buoys B. L are guards passing from the bows of boats or buoys B and connecting with the guard F at the center, between and level with the tops of boats or buoys B. M is the railing along the bridge or frame N. O are iron braces passing from the upper cross-plank B′ to the lower cross-plank B′. P is the axle, to which are attached the wheels C. P^1 are the extensions of the keels of the boats or buoys B, which extensions form the main outer bearings for axle P, while P^2 form inner bearings. R are hatchways, one for each water-tight compartment in the small boats or buoys, while on the large or main boat they afford means of ingress and egress to and from the compartments, which are used for carrying fuel and provisions; and R′ shows the air-chambers at the sides of the boat A.

Having thus fully described the nature of my invention, and the manner of operating the same, without binding myself to the exact forms or the dimensions specified herein, and shown in the drawing, I claim as new and desire to secure by Letters Patent—

1. The main boat A, the propeller E, and the jointed propeller-shaft E^2, as described, in combination with the forward boats B B and the rear boat B; said boats A and B being connected by a frame which presents a broad bow and a narrow stern, and admits of the propeller being located between the main boat and the rear boat, and supports the main boat A on a higher plane than the boats B, all substantially in the manner described.

2. The combination of the jointed propeller-shaft E^2, propeller E, guards E^3 E^4, arm F^2, guide E^5, and suspending flexible device E^6, substantially as and for the purpose herein set forth.

3. The ballasting-frame G^1, furnished with the rolling-wheel-shaped weight G, in combination with the boats A and B, substantially in the manner and for the purpose herein described.

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