

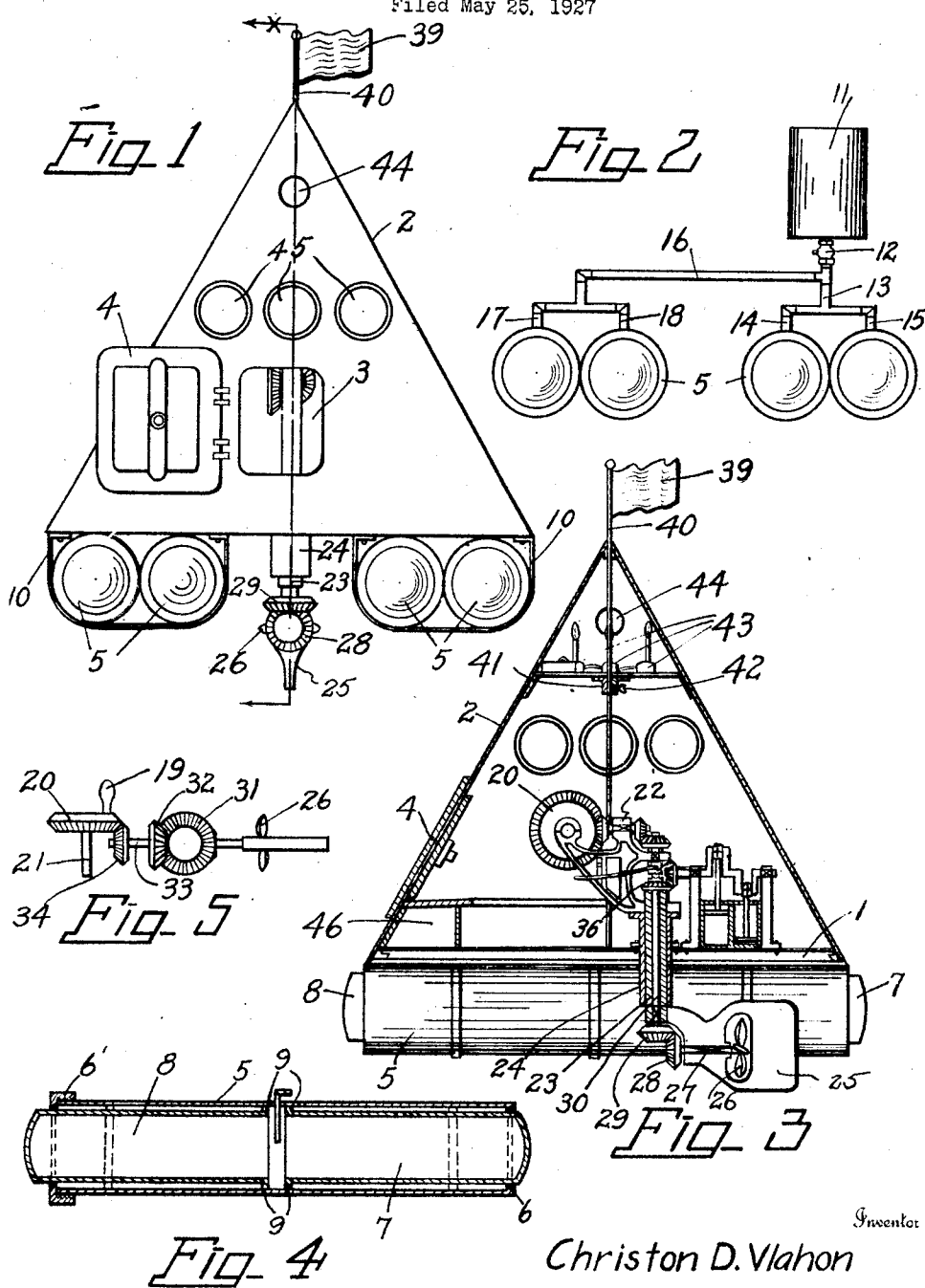
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LIFE RAFT

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UNITED STATES PATENT OFFICE.

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LIFE RAFT.

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My present invention relates to an improved life raft for use at sea in case of ship-wreck, and of the type provided with manually operated propulsion mechanism and steering mechanism. In carrying out my invention means are provided whereby the raft may be compactly stowed away on deck of the ship for access when needed and may with facility be launched in emergency. Extensible, buoyant floats are provided for floating the raft and these floats are designed to be extended or elongated from their normally compact position, when not in use, to a suitable length in order that the floating raft may be stabilized and more readily be propelled and steered.

Manually operated means are provided for inflating and extending the floats and for propelling and steering the raft as will be described.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention wherein the parts utilized are combined and arranged according to one mode I have thus far devised for the application of the principles of my invention.

Figure 1 is a front view of the raft, at the bow end, showing the entrance opening or hatchway with the hatch-door open for convenience of illustration.

Figure 2 is a detail end view of two sets or pairs of the buoyant floats, indicating the air compressor and pipe connections for inflating and extending the floats.

Figure 3 is a vertical sectional view of the raft and its housing or superstructure, with other parts also in section.

Figure 4 is a longitudinal sectional view of one of the buoyant floats with its telescoping ends retracted within the main cylinder or section of the float.

Figure 5 is a plan view of the propelling gearing.

It will be understood that the life raft may be constructed of suitable shape and size, and the deck 1 may be round, square, or of other polygonal shape and its housing 2 of complementary shape. Entrance to the interior of the housing is provided through the hatch or doorway 3 and this opening is closed and sealed, when at sea, by a suitable type of hatch or hinged door 4.

The deck and its superstructure are supported upon the buoyant floats, here indi-

cated as two pair of cylinders 5, arranged at the sides of the longitudinal center of the raft, below the deck, and parallel with one another. These cylinders, which are open at both ends are to be inflated with air, and they are fashioned at their opposite ends with an inner annular packing flange 6 and an exterior, flanged, packing screw ring 6' to form sealed joints with the two telescoping end sections 7 and 8 of the floats. These telescoping sections extend inwardly from the opposite ends of the cylinders and their inner open ends terminate at the approximate center of the cylinder 5. Under air pressure supplied to the interior of the cylinder 5 and exerted against the closed outer ends or heads of the telescoping sections these latter sections are projected longitudinally of the cylinder, until the annular stop flanges 9 on the exterior of the inner ends of the sections 7 and 8 contact with the flanged members 6 and 6' at the ends of the cylinder 5. Thus the length of the parallel floats may be extended for the purpose of stabilizing the raft when it is afloat and for facilitating the propulsion and steering of the raft when under way. Each of the extensible buoyant floats is of duplicate construction and they are arranged, as in pairs at the sides of the longitudinal center of the raft, to insure the proper beam for the raft, while the extended floats afford the proper length over all of the raft. The floats are secured at the underside of the deck in any suitable manner as by straps or bands 10 passing transversely around the under portion of the floats and with their flanged ends secured at the underside of the deck.

For inflating and extending the floats an air compressor of usual type is indicated by the numeral 11, supported on the deck within the housing, and air to the floats is controlled by valve 12 in the air pipe 13. From this main pipe 13 a pair of branch pipes 14 and 15 supply one pair of floats, and the branch pipe 16 with its two outlets 17 and 18 supply the remaining pair of floats with air under pressure.

Manually operated means are provided for propelling the raft when it is afloat, through the use of a handle 19 on the driving, bevel gear 20 which latter is fixed on the shaft 21 journaled in bearings in the frame 22. This frame is fashioned with a rigid, tubular upright spindle 23 that is

swiveled in the fixed bearing sleeve 24 secured in suitable manner to the deck of the raft. A steering rudder 25 located between the two pairs of floats, is secured at the lower end of the spindle 23 where it projects below its supporting sleeve 24, and as the operating shaft 21 of the operating gear 20 is supported in the frame 22, the tubular spindle is rigid with the frame, and the rudder is rigid with the spindle, the operating gear, through handle 19 may be used for steering the raft, and at the same time utilized for propelling the raft.

The propeller 26 is located in an opening of the rudder and its shaft is journaled at 27 in the rudder, with a bevel pinion 28 and a complementary pinion 29 on propeller shaft 30, for turning the propeller wheel 26. The upright shaft 30 is journaled in the tubular spindle 23, and at its extreme upper end this shaft is provided with a horizontal bevel pinion 31 that engages with a complementary pinion 32 on short shaft 33 and a pinion 34 on the opposite end of this shaft is driven from the main or operating gear wheel 20. In this manner and through these connections the propeller is revolved at comparatively high speed for the propulsion of the raft.

A clutch device 35 is illustrated in Figure 3 for use when the air compressor is to be driven from the operating bevel gear 20 through the upright or propeller shaft 30. The propeller shaft is provided with a clutch pinion 36 and a complementary bevel pinion 37 is fixed on the crank shaft 38 of the compressor 11. By manipulating the clutch device 35 the power may be transmitted from the operating bevel gear to the crank shaft of the compressor in order that sufficient air may be compressed to extend the floats and inflate them, after which the

clutch is moved to permit transmission of power direct to the propeller wheel from the operating bevel gear.

A signal flag 39 forms part of the equipment of the raft and is carried on the staff 40 that projects upwardly through the peak or apex of the housing. The staff is supported in a holder 41 fixed in the upper part of the housing and a set screw or bolt 42 is utilized to hold the staff in adjusted position for displaying the signal flag at different heights.

In addition to the signal flag, lights or lamps 43 in the upper part of the housing are used for signals, and the beams from these lamps shine through ports as 44 in the housing.

The raft is provided with various necessary accessories as windows 45 and lockers 46, the latter for storage of provisions, and other features, not shown are of course provided for safety of the occupants of the life raft.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A buoyant support for a life raft comprising a plurality of tubular floats each having tubular telescoping end sections, and means for supplying air under pressure to the floats to extend the sections and inflate the floats.

2. A life raft having a buoyant support and propeller and steering mechanism, manual operating means for the propeller mechanism and steering mechanism, an air compressor, and means whereby power may be transmitted from the operating means for the propeller to the air compressor for inflating the support.

In testimony whereof, I affix my signature.
CHRISTON D. VLAHON.