June 28, 1938. K. TORJUSSEN 2,121,894

SUBMARINE LIFEBOAT

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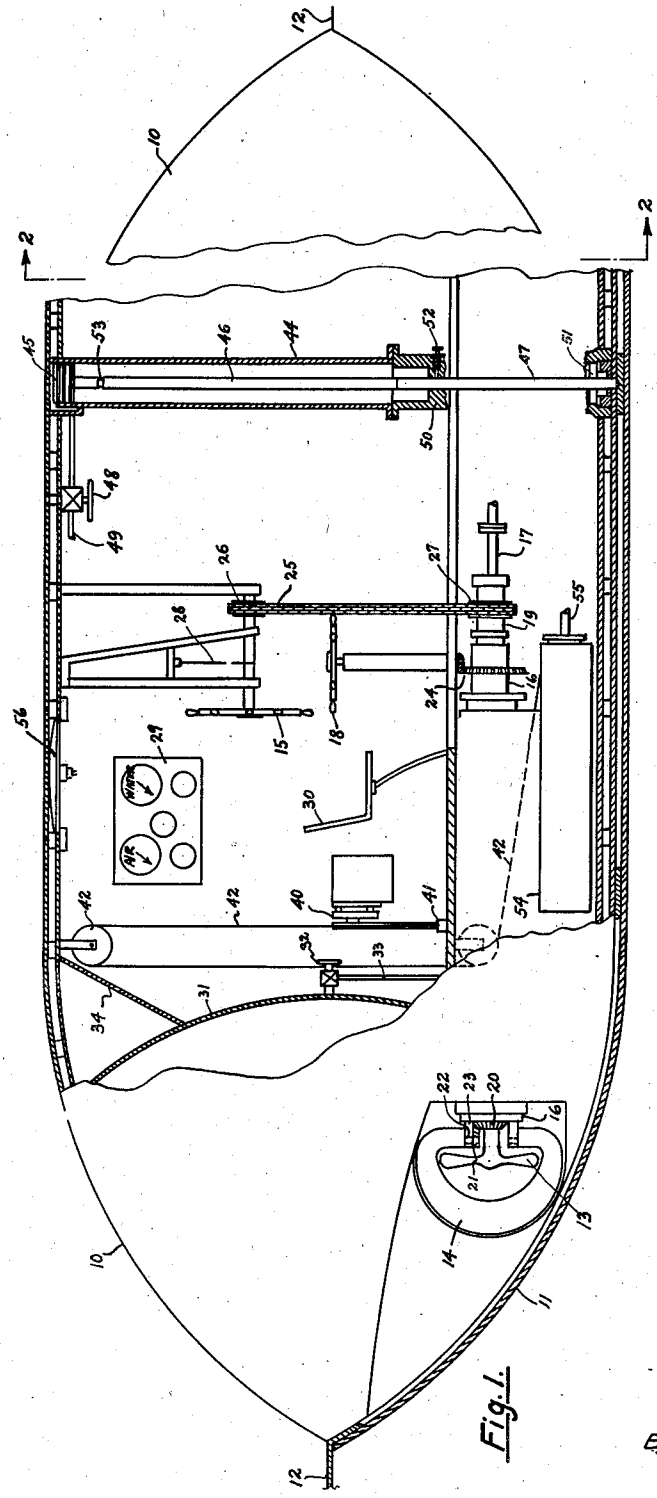


Fig. 1.

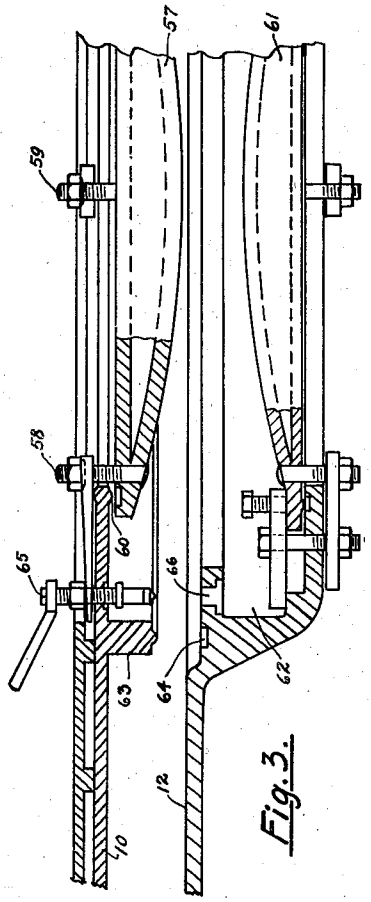


Fig. 3.

Karl Torjussen
INVENTOR

By M. Bjömdal
ATTORNEY

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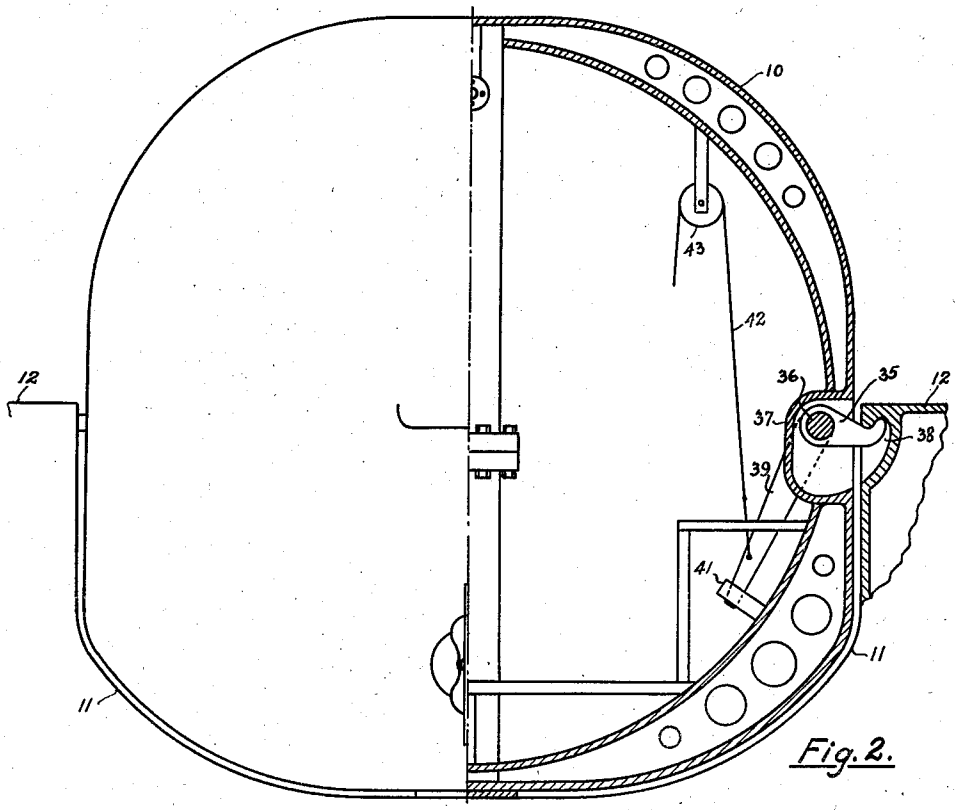


Fig. 2.

Karl Torjussen
INVENTOR

M. Bjørndal
ATTORNEY.

Patented June 28, 1938 2,121,894

UNITED STATES PATENT OFFICE

2,121,894

SUBMARINE LIFEBOAT

Karl Torjussen, Brooklyn, N. Y.

Application March 8, 1937, Serial No. 129,573

1 Claim. (Cl. 114—16)

My invention relates to lifeboats for submarines and means for releasing same from the submarine in submerged condition as well as means for propelling and guiding said lifeboats.

An important object of this invention is to provide a construction of lifeboats which may be built into the deck or hull of a submarine and normally carried as an integral part of this hull.

A further object is to provide means whereby one may enter said lifeboats from the interior of the submarine, and means for closing said entrance.

Another object is to provide various means for holding said lifeboats to the submarine, and pneumatic or hydraulically operated release means, and similarly operated jacks for pushing off from the submarine.

A further object of the invention is to provide means for steering and propelling said lifeboats to the surface. Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming part of this specification, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a partial section and elevation taken longitudinally through the lifeboat.

Figure 2 is a partial transverse section and end elevation along line 2—2 in Fig. 1.

Figure 3 is a broken away section taken longitudinally through the manhole connecting the submarine with the lifeboat.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 10 designates the outside hull of the lifeboat resting in a recess 11 in the deck or hull 12 of a submarine. At one end of the lifeboat hull 10 there is a propeller 13 and a rudder 14. The propeller 13 is connected with conventional compressed air or fuel driven means not shown in the drawings. The rudder 14 is rotatable in two directions by being mounted on a sleeve 16 surrounding the propeller shaft 17 and rotatably mounted on same, by turning wheel 15 the rudder will thus make sidewise motions. A wheel 18 is provided for turning the sleeve 16 whereby the rudder 14 may be brought into a horizontal position. A second sleeve 19 is concentric on the propeller shaft 17 between same and sleeve 16 and carries at one end the bevel gears 20 and 21. Gear 21 is mounted on pin 22 rotatably mounted in bracket 23. The sleeve 16 is driven by wheel 18 through the gears 24 while the sleeve 19 is rotatable by wheel 15 through the chain 25 and sprockets 26 and 27.

A plumb 28 indicates the vertical position of the lifeboat while the instrument board 29 carries the necessary gauges for water, air and fuel pressures, etc., and a seat 30 is provided for the helmsman.

At each end of the lifeboat there is a tank containing compressed air, this tank is designated by numeral 31. A valve 32 and pipe 33 connects to the various pneumatically driven means. A fuel tank 34 is provided for carrying combustible fuel.

In Figures 1 and 2 are shown the release and holding means consisting of hooks 35 mounted rotatably on shafts 36 in a watertight housing 37. The hooks 35 normally fit into a recess 38 in the hull 12 of the submarine, but these hooks may be released by turning shaft 36 with lever 39 thus bringing the hooked part 35 into the watertight housing or recess 37 out of engagement with the recess 38. Packing boxes 40 on shaft 36 prevent water from entering the lifeboat. A locking mechanism 41 is provided for latching the lever 39 in its normally closed position while a flexible steel rope 42 over pulleys 43 connect to pneumatically driven means for releasing the lever 39 and hook 35 if stuck.

A plurality of vertically mounted cylinders 44 contain pistons 45 and piston rods 46 and 47. Valve 48 connects through piping 49 to the compressed air tanks 31 and also to the outside of hull 10. The piston rods 46 and 47 are guided in bearings 50 and packing boxes 51, and a spring-backed locking pin 52 will fall into groove 53 when the piston is in its bottom position. A similar cylinder 54 with piston and piston rod 55 is provided for pulling ropes 42 to release the hooks 35.

A manhole 56 is provided for leaving the lifeboat when in surface position, while another manhole connecting the lifeboat with the submarine is shown in section in Fig. 3. This manhole is shown in a closed position with the lifeboat removed a slight distance from the submarine. The cover 57 held by a plurality of bolts 58, 59 and watertight by means of packing 60 closes the lifeboat, while the cover 61 in a similar manner closes the submarine. The cover 61 is placed in a recess 62 in the hull 12 of the submarine, this recess is sufficiently large so that both covers may be put on from one side. In the normal position the recess 62 is watertightly closed by the ring 63 and packing 64. Means are provided for flooding the recess 62

after the covers have been closed thus removing the static pressure due to the outside water. T-slot bolts 65 fitting in slots 66 serve to keep the recess 62 tightly closed in normal position.

The operation of my invention is as follows: In actual practice I prefer to provide one or more lifeboats at each end of a submarine. This is due to the consideration that if a submarine is damaged at one end and sunk the crew may escape through the other end. These lifeboats are placed in recesses in the hull or deck of the submarine and normally held in position by strong hooks locked in position by latch 41. Upon entering the lifeboat the crew will first close the manhole of the submarine in recess 62 with cover 61. Next the cover 57 is put on, closing up the lifeboat, whereupon the recess 62 is flooded by letting in the seawater through a valve. The static pressure on the manhole is thus removed and the bolts 65 are loosened and removed from slots 66. At this point the latches 41 may be removed and the hooks 35 released by the upward motion of lever 39. If necessary this lever 39 may be pulled by rope 42 strung over pulley 43 and connected to the piston rod 55. This device 54 may be driven either by air pressure from one of the air tanks or by using the static pressure of the surrounding water. In the latter case the device 54 will operate as a hydraulic jack. After having disengaged the several hooks 35 the life boat is free from the submarine, however, it may be stuck to same due to forces of various kind. To overcome these forces there are provided a plurality of vertical cylinders 44 with pistons 45 and piston rods 46 and 47. These may also be operated either by air pressure or by hydraulic pressure as described supra, and by thus forcing the rod 47 down against the submarine the lifeboat is pushed off from same. The rod 47 is loose and will fall off as soon as the rod 46 has penetrated the packing box 51 and will thus create no objectionable projections. The helmsman sitting in seat 30 can now by means of wheels 15 and 16 steer the lifeboat both up and down and sidewise as described supra.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in shape, size and arrangement of parts may be resorted to, without departing from the spirit of my invention, or the scope of the subjoined claim.

Having thus described my invention, I claim:

In a submarine boat including a hull formed to provide a recess adjacent the stern, a propeller and shaft therefor adapted to be positioned in said recess, a sleeve rotatably mounted on and concentric with said propeller shaft, a rudder embracing said propeller, pivotally mounted on said sleeve in the plane of said propeller shaft for rotation about said propeller shaft as an axis, a second sleeve concentric with said first sleeve, gear means interconnecting said rudder and said second sleeve whereby said rudder may be pivoted on said pivotal mounting, hand wheels located in said boat and operably connected to each of said sleeves.

KARL TORJUSSEN.