

Oct. 27, 1931.

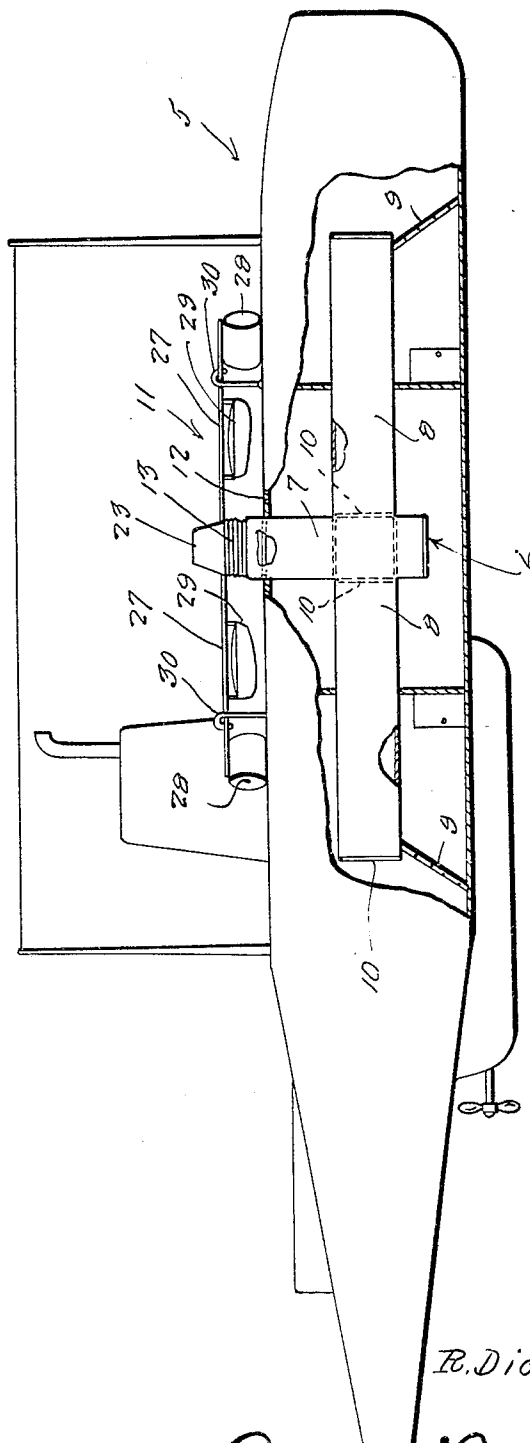
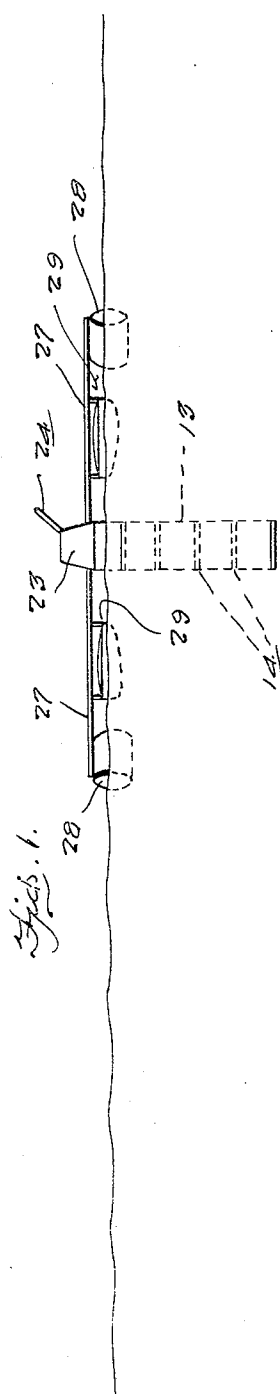
R. DICOLA

1,829,476

SUBMARINE RESCUE DEVICE

Filed April 8, 1930

2 Sheets-Sheet 1



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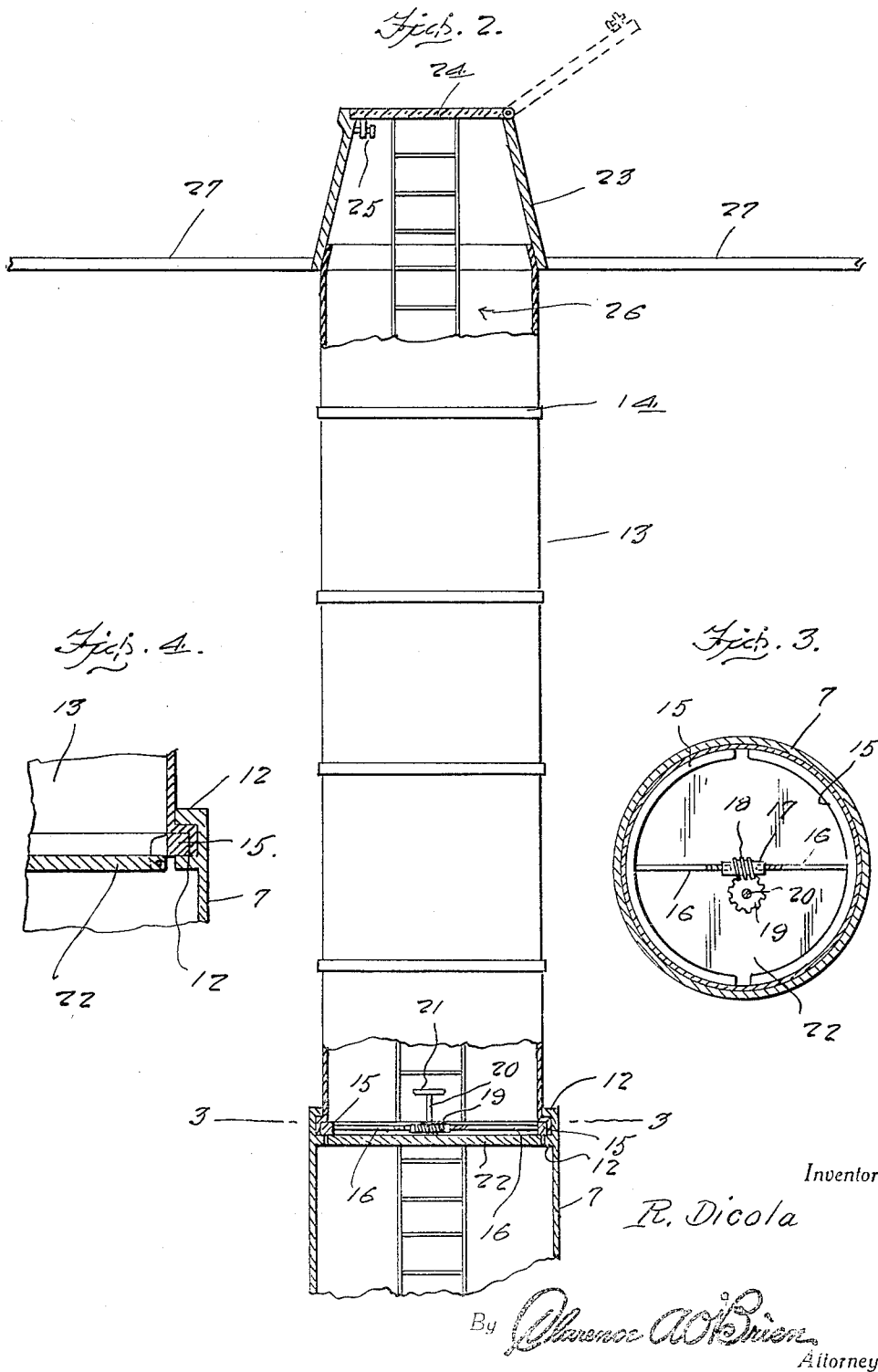
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

ROCCO DICOLA, OF FOREST CITY, PENNSYLVANIA, ASSIGNOR OF TWENTY-FIVE PER CENT TO HIMSELF, TWENTY PER CENT TO URIC J. McHALE, OF FOREST CITY, PENNSYLVANIA, EIGHTEEN AND ONE-THIRD PER CENT TO FRANK RENDA, EIGHTEEN AND ONE-THIRD PER CENT TO VITO VARANO AND EIGHTEEN AND ONE-THIRD PER CENT TO DOMENICK CORONITI, ALL OF SCRANTON, PENNSYLVANIA

SUBMARINE RESCUE DEVICE

Application filed April 8, 1930. Serial No. 442,617.

This invention relates to an improved rescue device for use in association with submarines, and it has more particular reference to the class of device which is adapted to be permanently mounted on the submarine in a convenient position to permit it to be brought into play in case of an emergency, whereby to permit a multiplicity of refugees to float safely to the surface of the body of water in the event the submarine sinks.

Briefly stated, the invention is in the nature of a bouyant elevator characterized by a collapsible container for the refugees, a multiplicity of pontoons or floats for carrying the device to the surface of the water and rescue of life saving boats.

Briefly stated, the novelty is founded upon a structure which is calculated to be of estimable value in that it may be conveniently anchored on decks of the submarine in an out-of-the-way place under normal sailing conditions, the same being characterized by a foldable or collapsible occupant container which, when set adrift, will catapult rapidly to the surface of the water under the action of the elevating floats.

Otherwise stated, the invention comprises a normally collapsed tubular container which is releasably moored or anchored on the decks of the submarine, the same having communicating connection with an internal safety refuge device provided within the interior of the submarine.

The particular structural features and advantages will become more readily apparent from the following description and drawings.

In the drawings:

Figure 1 is a diagrammatic view showing a sunken submarine with the rescue device collapsed and anchored on the deck in a normally inoperative state, and also showing the device released and occupying a floating position on the surface of the body of water.

Figure 2 is a view in section and elevation

showing the stationary inlet tube on the submarine and the distended canvas rescue container together with the attaching means and closing door, etc.

Figure 3 is a cross section taken approximately on the plane of the line 3—3 of Figure 2.

Figure 4 is an enlarged detail sectional view showing the manner in which the lower end of the canvas rescue container is detachably fastened to the metal tube on the submarine.

In Figure 1, the sunken submarine is designated by the numeral 5. In accordance with the present invention, there is an internal refuge structure provided on the interior thereof, and this is of any construction and generally designated by the numeral 6. It is here shown as including a vertical metal tube 7 having communication with horizontal walk-ways 8 which branch in opposite directions from the tube 7.

The numerals 9 designate approach ladders leading to the door-equipped ends of the branches 8. The numerals 10 designate a plurality of closing safety doors. The rescue device is generally designated by the numeral 11 and from experimental results it has been found that this might well be releasably anchored on the deck 12 of the submarine. Incidentally, the submarine may be of any appropriate construction and the device 6 may be of suitable arrangement to facilitate entrance and admittance to the rescue device 11.

In accordance with the conception, however, the upper end of the tube 7 is provided with annular flanges 12 as seen in Figure 4, defining a channel at the top of the tube. This forms an annular keeper. The rescue device comprises a collapsible or foldable canvas tubular container 13 of appropriate dimensions. This is provided with vertically spaced reinforcing hoops or bands 14 to withstand the pressure of the water during

the flight of the rescue device through the water after it has been released.

The lower end of the canvas extends down into the grooves between the flanges 12 as detailed in Figure 4, where it is clamped
5 firmly therein by a suitable water-tight connecting device. This device may be of any appropriate construction but is here shown as comprising a pair of companion semi-
10 circular members 15 provided with oppositely threaded complementary rods 16 (see Figure 3) threaded into a turn-buckle sleeve 17 provided with worm threads 18.

The numeral 19 designates a pinion having operating connection with the worm
15 threads for carrying a shaft or operating stem 20 which extends up into the interior of the container 13 and is provided with a handwheel 21 as seen in Figure 2. The numeral 22 designates a closing door. This co-
20 operates with the ring formed by the coaction of the part 15. The purpose of the door is to close the bottom of the container before it is released to travel upwardly
25 through the body of water. The door may be of any appropriate construction and suitable retaining means may be provided. Incidentally, the door must be closed before the releasing device 21 is actuated for permitting
30 the lower end of the canvas to disengage from the retaining flanges 12.

On the upper end of the canvas container is a neck or cap 23 here shown as provided
35 with a suitable closure 24 and retaining means 25 therefor. If desired, the closure may include a glass window or may be constructed of glass to permit clear vision to be had by the occupant's of the rescue con-
40 tainer 13. The container also includes a ladder 26 to facilitate entrance and maintenance of the occupants in the container 13.

The numerals 27 designate radial arms which may be in the nature of rods or plat-
45 forms to expedite escape after the device has reached the surface of the water. On the outer ends of these arms are floats or pontoons 28. The arms also constitute supports for the small life boats 29. The life boats
50 are preferably covered with water-proof canvas to prevent water from entering the boats during the flight of the rescue device from the submarine to the surface of the water. To render the action of the flight complete and uniform I provide four arms 27 and
55 four floats and a corresponding number of boats.

Under normal circumstances, the canvas container 13 is folded into the collapsed state represented in Figure 1. Suitable retaining
60 means may include hooks or the like 30 for holding the rescue device down in this collapsed condition. Suitable internal mechanism (not shown) may be arranged within the submarine to allow the rescue device to be
65 released when necessary or desired.

In accordance with the invention if the submarine sinks, the occupants first enter the safety housing 6. As before stated, this may be of any appropriate construction for accommodation of the refugees. Then, the
70 hooks 30 are released and this allows the canvas container 13 to be carried upwardly by the floats to the distended state represented in Figure 2. When the door 22 is opened, the occupants go into the container 13
75 through the medium of the ladder or other means provided for this purpose.

Before the device 21 is released, the door 22 is closed. Then the device 21 is released, and this allows the complete device 11 to
80 separate, as a unit, from the submarine. The buoyant action of the float carries the device promptly to the surface of the water for rescue purposes.

The life-boats, which are canvas-covered and water-tight may be releasably supported
85 on the arms 27 so that after the device reaches the surface of the water, the closure 24 may be swung open and the occupants may enter the boats and seek safety.

The device is calculated to be of unestimable value for rescue purposes for sunken sub-
90 marines. It is forcibly projected when released so that it moves rapidly through the water to the surface for discharge of its passengers. It is somewhat in the nature of a buoyant elevator and accommodates a number
95 of refugees. The equal distribution of the pontoon carrying arms permits the device to move in a uniform manner through the water without swirling and turning.

It is thought that persons skilled in the art to which the invention relates will be able
100 to obtain a clear understanding of the invention after considering the description in connection with the drawings. Therefore, a more lengthy description is regarded as unnecessary.

Minor changes in shape, size, and rearrangement of details coming within the field
110 of invention claimed may be resorted to in actual practice if desired.

I claim:

1. In a submarine rescue device of the class described, an open-ended canvas tube defining a refugee container, clamping means at
115 the lower end of the tube for fluid tight connection with an exit tube in the submarine, manually manipulated mechanism for actuating said clamping means, a fluid tight closure associated with said clamping means for
120 closing the lower end of the container, a discharge closure mounted on the upper end of the container, and including a rigid cap provided with a plurality of radial arms, pon-
125 toons mounted on said arms, and life boats mounted on said arms.

2. A submarine rescue device of the type described comprising a vertically collapsible
130 refugee container having expanding means

in its lower end for securing it in water tight communication with an escape well of a submarine, said expanding means adapted to engage the upper walls of the escape well, means for operating said expanding means, a closure in the bottom of the container; and a conning tower on the upper end of the container having an escape door, and a float structure in said tower consisting of a plurality of radial arms projected from the tower, pontoons on the ends of the arms adapted to function to support said refugee container and maintain the same in erect position in the water, and boats mounted on said arms.

In testimony whereof I affix my signature.
ROCCO DICOLA.

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