March 1, 1949. F. MacKENZIE 2,463,191

LIFESAVING DEVICE

Filed April 2, 1947

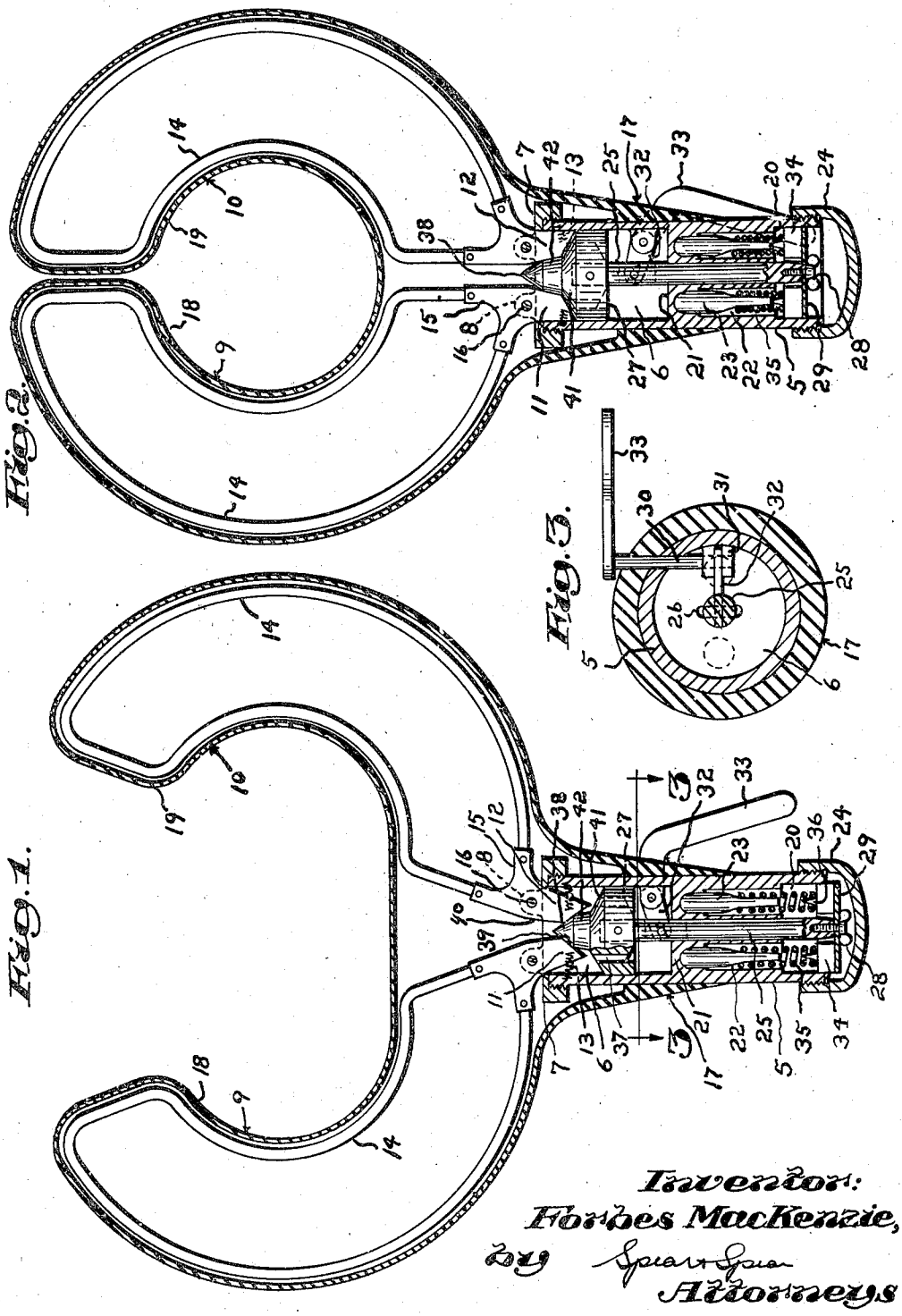


Fig. 1.

Fig. 2.

Fig. 3.

Inventor:
Forbes MacKenzie,
by Spiar & Spiar
Attorneys

Patented Mar. 1, 1949

2,463,191

UNITED STATES PATENT OFFICE

2,463,191

LIFESAVING DEVICE

Forbes MacKenzie, Roslindale, Mass.

Application April 2, 1947, Serial No. 738,818

7 Claims. (Cl. 9—19)

1

My present invention relates to a life-saving device of the life preserver type.

In accordance with my invention, I provide a life-saving device which consists of a handle to one end of which are connected a pair of members. At least one of the members is pivotable so that the device may have an open position and a closed position and the members are of such shape that in the closed position a neck is substantially encircled, while in the open position, the ends of the members are spaced from each other to straddle the neck. A cover of rubber or other suitable air tight stock is secured to the handle and includes a sheath portion for each member. The handle has a seat for at least one inflating cartridge and I house in the handle movable means including an operating member, a member in the handle to open a seated cartridge or cartridges and to swing the members from their open position into their closed positions. As an open cartridge is in communication with the interior of the sheath, my device is inflated when the members are in their closed position.

My devices are of very real advantage since they do not have the buoyance of the conventional life preserver until the members are in their closed position. It is thus relatively easy for one in rescuing a person from drowning to swim with a device held in one hand and to carry it with him under water if it is necessary to dive to reach the victim. Even if the victim is unconscious, my device may be readily slipped around his neck and the oeprating member actuated both to inflate the device and to close it about the victim's neck. In addition, if the device is applied to the victim's neck from the rear, the handles provide a convenient means of safely towing the rescued victim to safety.

In the accompanying drawings, I have shown an illustrative embodiment of my invention from which its several novel features and advantages will be readily apparent.

In the drawings:

Fig. 1 is a section of a life-saving device in accordance with my invention with the members in their open position.

Fig. 2 is a view, similar to Fig. 1, with the members in their closed position, and

Fig. 3 is an enlarged section along the lines 3—3 of Fig. 1.

At 5, I have indicated a cylindrical handle having at one end a chamber 6 and a ring 7 threaded thereon to the ears 8 of which are pivotally connected the arcuate members 9 and 10 so that they may be swung from the open position of Fig. 1 in which they are disposed to straddle a neck into the closed position of Fig. 2 in which they substantially encircle the neck.

The arcuate members 9 and 10 include arms 11 and 12 respectively which extend into the

2

chamber 6 and each is under the influence of one of the springs 13 thereby normally to maintain the members 9 and 10 in their open position. Preferably, the members 9 and 10 each include an arcuate frame 14 of tubular stock anchored in a base 15 through which its pivot 16 extends and of which the chamber entering arm 11 or 12 is an integral part. I have indicated generally at 17 a cover sealed to the handle 5 and the cover includes sheaths 18 and 19 to fit over the frames of the members 9 and 10, respectively. The cover 17 may be of rubber or any other extensible and air-tight material.

At its other end, I provide the handle 5 with a chamber 20 separated from the chamber 6 by the partition 21 and including seats 22 to support inflating cartridges 23, which may be of any conventional type in parallel with the axis of the handle. The chamber 20 is closed by the cap 24 threaded on the handle 5.

The partition 21 has an axial bore slidably supporting a rod 25 which may, as shown in Fig. 3, be grooved as at 26 to ensure that the chambers 6 and 20 are in communication with each other. In the chamber 6, the rod 25 has a head 27 and detachably secured to it as at 28 in the chamber 20 is a plate 29. At 30, I have shown a pivot mounted in the chamber 6 by a bracket 31 and extending through the wall of the handle 5 and being sealed as by the cover 17. The inner end of the pivot 30 has a shifter fork 32 connected to the rod 25 and to its outer end is secured an operating handle 33 by which the rod 25 may be advanced from its inoperative position of Fig. 1 into its operative position shown in Fig. 2.

I provide the plate 29 with a pair of seats 34 in each of which is secured a coiled spring 35 to fit over the neck of a cartridge 23 with which it is in alinement thereby to yieldably maintain the cartridge seated. Each seat 34 also has a cartridge opening projection 36 which is operatively positioned by operating the handle 33.

The head 27 fits snugly within the chamber 6 and has passages 37 extending therethrough to ensure that the chamber 6 is in communication with the interior of the sheaths 18 and 19. The head 27 has an axially disposed projection 38 disposed between the arms 11 and 12 to wedge them apart when the rod 25 is operatively positioned thereby to swing the members 9 and 10 into their closed position. In practice, the arms 11 and 12 have oppositely inclined cam surfaces 39 and 40. The tip of the projection 38 tapers to engage with the arm surfaces 39 when the members 9 and 10 are in their open position while the head 27 is tapered as at 41 to engage with the arm surfaces 39 when the members are in their closed position in which the arms 11 and 12 are in contact with that part of the handle 5 establishing

the chamber 6. In order that the arms 11 and 12 are rigidly held in that position, the projection 38 is tapered as at 42 to engage with the arm surfaces 40.

From the foregoing, it will be apparent that life-saving devices in accordance with my invention are well adapted for emergency use. Until the handle 33 is operated, the device has insufficient buoyancy to interfere with the life saver so that he may carry it with him under water if necessary. It may easily be applied to the neck of the drowning person with one hand and when the handle 33 is operated, the life saver may release his hold on the victim since the device is then inflated and the members 9 and 10 closed around the victim's neck and, at the same time, the handle 5 provides means by which the life saver may tow the rescued person to safety.

What I therefore claim and desire to secure by Letters Patent is:

1. A life-saving device comprising a handle, a pair of arcuate members connected at one end to said handle so that at least one of them is pivotable so that it may be swung to establish an open position and a closed position, said members being of such shape as to substantially encircle the neck in said closed position and in said open position to enable a neck to be straddled thereby, an extensible air-tight cover secured to said handle and including a sheath portion for each member, a support in said handle for an inflating cartridge, means movably mounted in said handle and operable to open a cartridge in said support and to engage said members to swing them from their open position to a closed position, said cartridge when opened being in communication with said sheaths, and said means including an operating member mounted on said handle.

2. A life-saving device comprising a handle, a pair of arcuate members connected at one end to said handle to swing from a normally open position in which their other ends are spaced apart to straddle the neck of a person in danger of drowning into a closed position substantially encircling the neck, an extensible air-tight cover secured to said handle and including a sheath portion for each member, a support in said handle for an inflating cartridge, means movably mounted in said handle and operable to open a cartridge in said support and to engage said members to swing them from their open position to a closed position, said cartridge when opened being in communication with said sheaths, and said means including an operating member mounted on said handle.

3. The life-saving device of claim 2 in which each of the members consists of a frame.

4. A life-saving device comprising a handle, a pair of arcuate members connected at one end to said handle to swing from a normally open position in which their other ends are spaced apart to straddle the neck of a person in danger of drowning into a closed position substantially encircling the neck, each of said members including an arm having a cam surface, an extensible air-tight cover secured to said handle and including a sheath portion for each member, a support in said handle for an inflating cartridge, means movably mounted in said handle and operable to open a cartridge in said support and including a wedge-shaped head engageable with said cam surfaces thereby to swing said members from their open position to their closed position, said cartridge when opened being in communication with said sheaths, and said means including an operating member mounted on said handle.

5. A life-saving device comprising a handle having a chamber in one of its ends, a pair of arcuate members connected to said handle adjacent said end to swing from an open, neck-straddling position into a closed, neck-encircling position and including a pair of arms extending into said chamber and having oppositely inclined surfaces, spring means in said handle and connected to each arm normally holding said members in their open position, an extensible air-tight cover secured to said handle and including a sheath portion for each member, a support in said handle for an inflating cartridge, slidable means in said handle including cartridge opening means and also including wedge means engageable with said cam surfaces, and an operating member mounted on said handle to actuate said slidable means to open said cartridge and to wedge said members into said closed positions, said cartridge, when opened, being in communication with the interior of said sheaths.

6. The device of claim 5 in which the arms engage the handle when the members are in their closed position and the arms and the wedge means have coacting surfaces to limit the movement of the slidable means and to lock said members against movement from their closed position until the operating member is moved towards its original position.

7. A life-saving device comprising a handle having a chamber in one of its ends, a pair of arcuate members connected to said handle adjacent said end to swing from an open, neck-straddling position into a closed, neck-encircling position and including a pair of arms extending into said chamber and having oppositely inclined surfaces, an extensible air-tight cover secured to said handle and including a sheath portion for each member, a chamber in the other end of said handle establishing a seat for the base of at least one inflating cartridge, slidable means in said handle comprising a detachable head including yieldable cartridge seating and cartridge opening means for each cartridge and also including wedge means engageable with said cam surfaces, and an operating member mounted on said handle to actuate said slidable means to open said cartridge and to wedge said members into said closed positions, said cartridge, when opened, being in communication with the interior of said sheaths, and a cap secured to said handle closing said second named chamber.

FORBES MacKENZIE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,772,674	Markus	Aug. 12, 1930
1,798,430	Markus	Mar. 31, 1931
1,806,786	Claus	May 26, 1931