

May 26, 1931.

R. R. CLAUS

1,806,786

DEVICE FOR LIFTING BODIES SUBMERGED IN WATER

Filed Sept. 25, 1930

Fig. 1

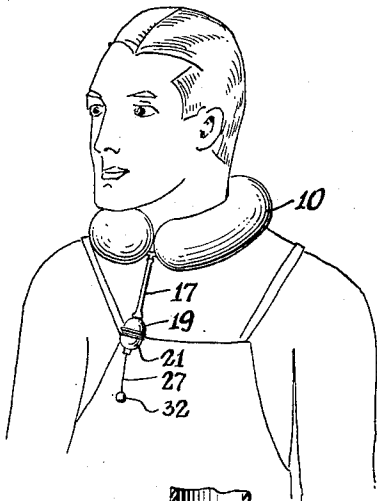


Fig. 4

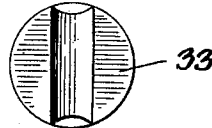


Fig. 5

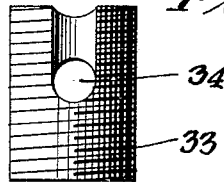


Fig. 3

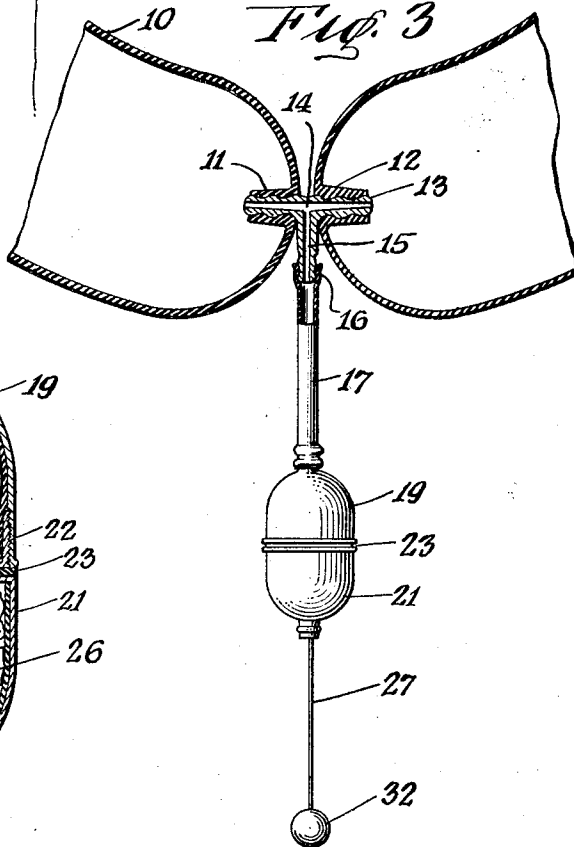
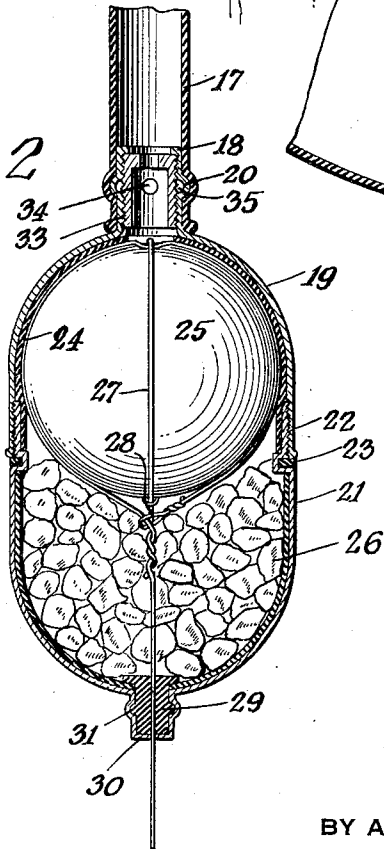


Fig. 2



Rolf R. Claus
INVENTOR

BY ATTORNEY

George C. Heinicke

UNITED STATES PATENT OFFICE

ROLF R. CLAUS, OF WEST NEW YORK, NEW JERSEY

DEVICE FOR LIFTING BODIES SUBMERGED IN WATER

Application filed September 25, 1930. Serial No. 434,287.

This invention relates to improvements in devices for lifting objects particularly objects submerged in water, and more particularly to a life-saving device, and it is the principal object of my invention to provide a device of this character which is easily and readily inflated by a simple pull on a wire releasing a fluid such as water to be brought thereby into contact with a gas developing material such as for instance carbide to inflate a tube which in its deflated state may be conveniently carried on a person.

It is well known that the commonly known inflatable tubes which must be inflated by air blown into the same become almost useless in cases of emergency, as the inflating by air requires considerable time and effort from the part of a drowning person, generally not able to spare this time and effort. This disadvantage is successfully overcome by the device according to my invention, according to which a pull on a wire by a person about to drown and seeking in self preservation will release a gas instantly inflating a tube about the neck of the person tending to keep his head above the water for a considerable time until help is coming to the rescue.

Another object of my invention is the provision of a device of this character which is comparatively simple, and therefore, inexpensive yet, durable and efficient in operation.

A further object of my invention is the provision of a bi-partite casing containing a fluid as for instance water in a balloon of easily torn material and a gas developing chemical such as carbide with which the water from the torn balloon is brought into contact whereby means are provided to produce a water and gas tight closure at the point of union of both parts.

A still further object of my invention is the provision of a device equipped with a valve preventing the entrance of fluid into the tube but allowing a free circulation of the gas.

It will be evident that this device may not only be used for life saving purposes but also for rescuing sunken ships as for instance submarines or boats and for floating the latter and for many other purposes where the lift-

ing of an object above the water level is desirable or essential.

These and other objects and advantages of my device will become more fully known as the description thereof proceeds, and will then be specifically defined in the appended claims.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 shows the application of a device constructed according to my invention to a person, with inflated tube.

Fig. 2 is a longitudinal sectional elevation of the inflating device on an enlarged scale.

Fig. 3 is a fragmentary sectional elevation of a tube illustrating the attachment of the inflating device thereto.

Figs. 4 and 5 are detail views of a valve.

As illustrated, the life-saving device or lifting contrivance comprises an inflatable rubber tube 10 equipped at its ends with nipples 11 and 12 for the reception of the head branches of a T-member 13 forming a gas- and air tight closure therewith.

The head piece of member 13 has a longitudinal bore 14 communicating with a bore 15 in the foot part of the T-member the lower end of which has attached thereto the nipple 16 of a flexible tube 17, the lower end of which is secured to a neck 18 of the upper part 19 of a bi-partite casing and held thereon by the engagement with a collar 20 on the neck over which the material of the tube 17 is tightly drawn.

The lower part 21 of the casing is attached to the upper part of the casing by a screw thread 22, and a washer 23 provides a water, gas and air-tight closure at the place of junction between the two parts of the casing.

The inner walls of the casing parts 19, 21, are lined with a lining 24 of suitable material impervious to water, acid and gas.

In the upper part 19 of casing a balloon 25 made of easily tearing material, such as for instance thin rubber is arranged, and the lower part 21 of the casing is adapted to be filled with a body of a material 26 quickly developing a gas when brought into contact with water, such as for instance carbide.

A thin wire 27 is guided about the bal-

loon in two loops intersecting each other to prevent slipping, as illustrated in Figure 2, and the ends are formed into a loop 28 through which the other end of the wire is drawn and wound about the rip cord or wire 27 extending through the lower part 21 of the casing and out of the same through a rubber gasket 29 held in the lower nipple 30 of the part 21 by a collar 31. The outer end of wire 27 carries a handle or ball grip 32.

Into the neck 18 is screwed a valve body 33 preventing the escape of water into tube 17 while allowing the gas to enter the same through openings or ports 34 communicating with the channels 35 in collar 20.

The operation of my device will be entirely clear from the above description and by simultaneous inspection of the drawings, and it will be evident that a person about to drown acting through the compelling force of self-preservation will mechanically grip the ball 32 and pull the same so as to tear balloon 25 so that the water contained therein will come into contact with the carbide and develop a gas which will float into the tube 10 and inflate the same.

The valve will allow the free passage of the gas while preventing the entrance of the water into the tube.

It will be understood that I have described and shown the preferred form of my device only as one example of the many possible ways to practically construct the same and that I may make such changes in its general arrangement and in the construction of the minor details thereof as come within the scope of the appended claims without departure from the spirit of my invention and the principles involved.

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

1. A life saving apparatus comprising an inflatable tube adapted to be worn about the neck of a person, a flexible tube connected to said tube, a bi-partite casing to which said flexible tube is connected, a thin rubber body or balloon containing water, in one part of said casing, a carbide supply in the other part of said container, a wire wound about said rubber body, extending out of said casing and a handle at the outer end of said wire to be pulled for tearing said balloon to combine its water with the carbide to develop a gas for inflating said tube, and a valve for controlling the gas supply therefor and preventing the entrance of water into said tube.

2. In a device of the class described an inflatable tube, nipples in the ends of said tube, a T-piece adapted to engage with its head branches, said nipples, a means for providing an air, fluid, and gas tight closure at this point, a flexible tube, a nipple thereon adapted to engage the lower end of the foot branch

of said T-piece, a bi-partite casing having a neck to which the other end of said flexible tube is engaged, a collar on the neck of said casing for securely holding said tube thereon, a means for controlling the passage between neck and flexible tube, means in said casing allowing the development of a gas therein to inflate said inflatable tube, and a means for operating said last named means.

3. In a device of the class described a bi-partite casing, one part of same screwed to the other, a means for providing a tight closure at the meeting ends of both casing parts, an inner water, gas and acid proof lining in both parts of said casing, a balloon of thin rubber in the upper part of said casing, a supply of carbide in the lower part of same, and a wire guided crosswise about said balloon, having one end formed into a loop for the passage of its other end to the ends to be contracted against said balloon to tear the same and combining its water contents with said carbide to develop a gas, a rubber tube adapted to be inflated by the gas developed, and a handle at the outer end of said wire to allow a breaking of the balloon by a pull exerted on said handle.

Signed at New York, in the county of New York, and State of New York, this 22nd day of September A. D. 1930.

ROLF R. CLAUS.