June 2, 1931. L. K. RICHEY 1,807,754

DEVICE FOR SAVING LIFE FROM DROWNING

Filed Nov. 1, 1929

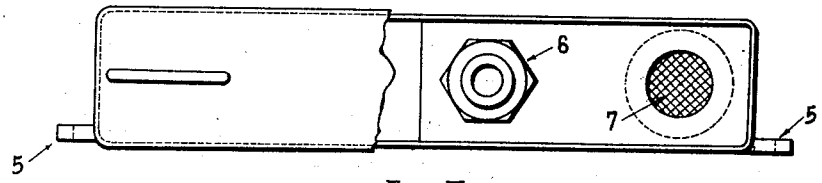


FIG. II

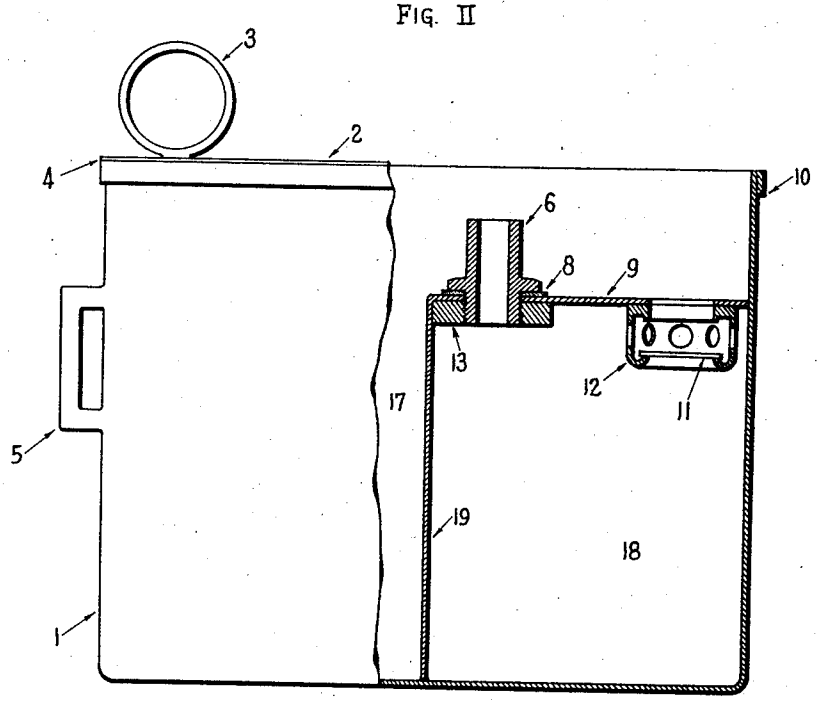


FIG. I

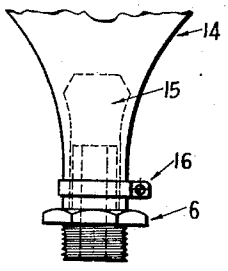


FIG. III

J. K. Richey
INVENTOR

Patented June 2, 1931 1,807,754

UNITED STATES PATENT OFFICE

LAWRENCE KENNEDY RICHEY, OF DETROIT, MICHIGAN

DEVICE FOR SAVING LIFE FROM DROWNING

Application filed November 1, 1929. Serial No. 404,027.

The invention relates to the inflation of a rubber lined fabric bag with a gas generated by a chemical reaction and has for its object to provide a new and useful device of the above stated character, simple and inexpensive in construction and efficient and certain in operation in time of emergency.

One form of the invention is illustrated in the accompanying drawings in which Figure 1 is a vertical section of the entire device, Figure 2 is a horizontal view of the table, and Figure 3 is a view of the connection of the gas valve and bag.

The container (1) is a small flat metal box, rectangular in shape, having the upper edges (10) turned down to provide for the soldering of cover (2) to the container.

The soldered joint (4), between container (1) and cover (2), is made up so as to provide a water tight seal and to permit cover (2) to be easily stripped from the container by pulling on ring (3).

The loops (5) are soldered to the container (1) and provide means of attaching a belt for fastening the device to the body.

The table (9) seals off the generating space (18) and carries the inlet water valve (12) and the bag and flutter valve connection (6). The metal partition (19) separates the generating space (18) from the bag storage space (17).

The inlet water valve (12) soldered to the table (9) has a perforated housing and the thin metal disc (11) closes the valve and prevents the gas from escaping after the reaction has once started.

The wire screen (7) prevents any solid materials getting into the water valve causing it to become inoperative.

The bag (14) and the rubber flutter valve (15) are fastened to connection (6) by means of glue and a clamp (16). The connection (6) is screwed into boss (13) soldered to table (9). The gasket (8) provides a gas tight seal between connection (6) and table (9).

The bag (14) is made of a rubber lined fabric, gas tight, and is stored in the container in compartment (17) in such a manner that the gas generated in compartment (18) will cause it to unfold and clear the container.

The rubber flutter valve (15) prevents any escape of gas after the bag has been inflated.

Sufficient calcium carbide to inflate the bag is placed in compartment (18) in a cotton bag. The cotton bag prevents immediate reaction between the incoming water and the carbide to allow sufficient water to enter the compartment. (Other compounds may be used but I prefer to use calcium carbide on account of its inexpensiveness and certainty of action.)

When the seal is broken by tearing off cover (2) by means of the finger grip (3) water rushes in thru valve (12) to compartment (18), entering the bag of calcium carbide. (The container is under slight vacuum to insure sufficient water entering compartment (18) before the reaction starts.) The water acting upon the calcium carbide generates a gas which closes the valve (12) and opens the flutter valve (15), forcing the bag (14) from compartment (17) and inflating it to capacity. (The bag is approximately ¾ cubic foot in volume, and the amount of carbide is in proportion. Other sizes may be used but this size will be adequate to float the body of any person.) The bag is firmly fastened to the container (1) by connection (6) and the container (1) is strapped to the body, preferably on the chest, by means of a simple canvas belt harness through loops (5).

The device should be opened under water, but would operate as soon as it was under water, regardless of the premature opening.

I claim:

The combination of a water tight metal container of two compartments, a water valve, a gas valve, a rubber lined fabric bag, a cotton bag containing calcium carbide, and container under slight vacuum, and a ring grip for opening same, so arranged as to permit gas formed by a chemical reaction to inflate the bag by a single act of a person whose life is in danger from drowning.

LAWRENCE KENNEDY RICHEY.