Jan. 26, 1943. H. REKERSDRES 2,309,256

MARINE LIFE BELT

Filed June 26, 1939

Fig. 1

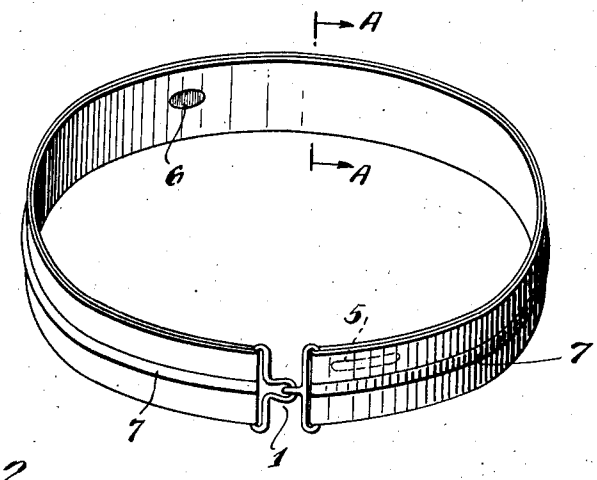


Fig. 2

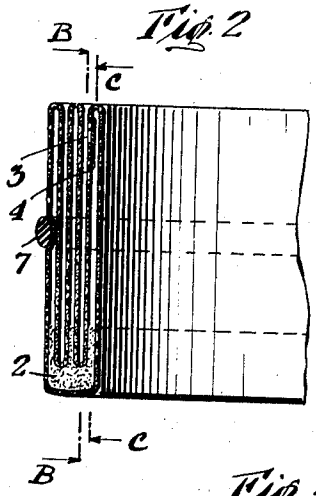


Fig. 3

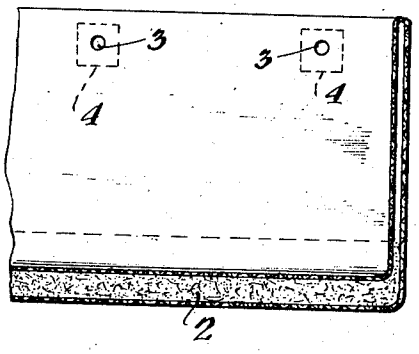


Fig. 4

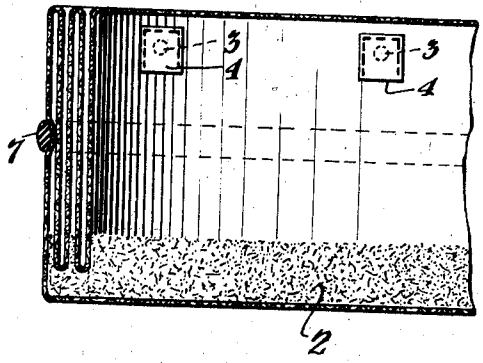
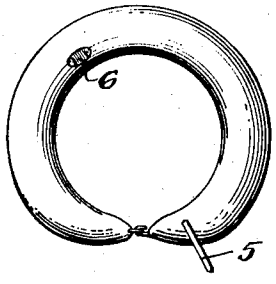


Fig. 5



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MARINE LIFE BELT

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Application June 26, 1939, Serial No. 281,133

1 Claim. (Cl. 9—19)

My invention relates to improvements in life saving devices, particularly to a self-inflating life saving belt. It is the principal object of my invention to provide such a belt which closely resembles a customary wearing apparel belt and which can be worn with comfort whereby it may be conveniently worn by persons travelling on or over water so as to assure them of protection from drowning even though they may be unconscious upon entry into the water.

Another object of my invention is the provision of a life preserver consisting of an inflatable belt or tube containing a gas-forming dry chemical loosely contained therein which is ordinarily protected against deterioration caused by contact with the atmospheric air, being encased in a tube made of material impervious to the passage of a gas and normally protected by an outer cover.

A further object of my invention is the provision of a life saving belt permitting the entrance of water for developing a gas when coming into contact with the chemical contained in the belt through openings in the material protected by flaps preferably of duck fabric on the inside surface of the belt and securely attached to the material of the belt along three sides and closing said openings by the gas developed within the belt tube and inflating the same.

A still further object of my invention is the provision of a life preserver of this type equipped with a nipple or mouth piece for blowing air into the preserver if, through long immersion in the water, some of the gas is lost, to compensate for such loss, said nipple in the deflated condition of the preserver resting between the folds of the belt out of sight.

Still other objects of my invention are the provision of a life saving belt having a substantially elastic band secured at its ends and located half way between the top and the bottom edges of the belt in its deflated condition and applied under regulated tension for the purpose of pressing the belt folds together midway between the top and bottom edges thereof so as to reduce somewhat the passage of air from the water inlet openings to the gas-generating material, in order to preserve the strength of the chemical.

The ends of the belt are connected by means of any of the well known buckles preferably suitably insulated so that no metal parts come into direct contact with the chemical to avoid the formation of pernicious chemical combinations or the like.

For the purpose of allowing the removal of the contents of the belt for cleaning or replenishing purposes an opening is provided in the material of the deflated belt which can be hermetically sealed by any suitable well known means. When not in use the belt should preferably be kept in a rubber bag or like container to protect it against air circulation.

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

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

Fig. 1 is a perspective view of a life saving belt constructed according to my invention in its deflated condition adapted to be worn as an attractive or ornamental belt.

Fig. 2 is a fragmentary section through the belt along line A—A of Figure 1 and on a somewhat enlarged scale.

Fig. 3 is a section on line B—B of Figure 2 also fragmentary and on a somewhat enlarged scale.

Fig. 4 is a section on line C—C of Figure 2 showing the belt fragmentarily and on a somewhat enlarged scale.

Fig. 5 shows the belt inflated and equipped with a nipple for blowing supplementary air into the same.

As illustrated, the material of the belt (Fig. 1) is folded flat so as to present the attractive appearance of a commonly used narrow belt, the ends of which are connected by a suitable buckle **1**. Loosely distributed in the belt at the bottom of the folds is a dry, gas-generating chemical **2** as for instance calcium carbid or any other suitable constituent which in the presence of water generates a gas. The material of the belt is gas-tight except for a plurality of openings **3** near the top each of which is covered by a flap **4**, preferably of duck, securely attached to the material of the belt along three sides thereof, as shown in Figure 4. A short length of a small connecting tubing or nipple **5** is securely attached to the belt material at the front, to provide a means for wearer of the belt to blow supplementary air into the belt if, for any reason, the chemically generated gas seeps out of the inflated belt due to a prolonged immersion in the water. In the deflated condition of the belt this small tubing rests between the folds of the belt out of sight. Where this small connecting tubing joins the belt there is securely fastened in the tubing a check valve of suitable construction which will permit the passage of air into the

belt, but will prevent the passage of any fluid out of the belt. Tubing 5 has mounted at its tip a mouth-piece which easily adjusts the tubing to the mouth, and also keeps the tip open at all times. In the exposed surface of the deflated belt is provided an opening 6 having a detachable cover plug or the like arranged to hermetically seal the opening except when it is desired to remove the contents of the life belt for cleaning and replenishing purposes. Secured to the ends of the belt is a substantially elastic band 7, located half way between the top and the bottom edges of the belt in its deflated condition, and applied under regulated tension. This elastic band serves the purpose of pressing the belt folds slightly together midway between the top and the bottom edges of the belt so as to somewhat reduce the passage of air from the holes 3 at the top of the belt to the gas-generating material 2, distributed around the bottom of the belt: The passage of air from the holes 3 to the gas-generating material is prevented when the belt is not in use by encasing the same in a rubber bag or airtight outer container.

In use, when the belt is immersed in water (fresh or salt), water enters the interior of the belt through the plurality of holes 3, wetting the cover flaps 4 attached to the inside of the belt material, and wetting the gas-generating material, dry within the belt. The resultant generated gas first closes the openings 3 by pressing the flaps from the inside against the same thus preventing the escape of the gas through these openings, whereafter the gas pressure will unfold the belt and inflates the belt in the manner of essentially an inflated inner automobile tire tube with its sealed ends connected by the conveniently operated buckle. The elastic band 7 simply slides off the concave surface as the belt inflates. Inasmuch as air naturally contains moisture, the belt when not in use should be kept in a rubber bag or like outer container protected against the circulation of the atmospheric air because the less air comes into contact with the gas-generating material 2, the less it will be deteriorated and any loss of strength of the dry chemical will be effectively prevented to prolongate its usefulness for a considerable time.

While I am aware of the fact that numerous life saving devices have been patented which use a gas-generating material my life saving belt has the following numerous and important advantages over the same: It operates positively automatically and can be worn at all times without inconvenience, it requires no instructions for its proper use, and can be even worn with sleeping garments so as to be at all times ready for use in any emergency. It is very simple and inexpensive to construct and has no metal part coming into contact with the chemical thus avoiding positively the formation of pernicious chemical combinations, and needs no complicated valve constructions which in emergency cases are apt to quickly get out of order when operated by unaccustomed persons. The median elastic band reduces effectively the passage of air to the gas-generating material thus preserving the strength and life of this material. It allows the supply of supplementary air if such should become necessary by the unavoidable loss of gas for any reason whatsoever. It can be cleaned conveniently and readily supplied with the gas-generating material and as it should be normally when not in use within a suitable cover and is not exposed to the circulation of the atmospheric air, the usefulness and life of the chemical will be greatly extended.

It will be understood that I have described and shown the preferred form of my life saving belt only as one example of the many possible ways to construct the same in practice, and that I may make such changes in its general arrangement and in the construction of its minor details 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:

In an automatically operating, substantially narrow life-belt folded flat to resemble a customary garment supporting belt, a lower fold formed with said belt and containing a dry, gas-generating chemical loosely distributed therein, said belt provided with openings near its top, flaps secured at three of their edges to the inner face of the belt material in front of said openings for closing said openings automatically against the entrance of an undesirable surplus of water during submersion when said flaps are pressed against the inside of the belt's material by the gas generated by water acting on the chemical, an elastic band normally surrounding the folded belt in approximately its median circumference and adapted to slide off the same upon its inflation to reduce the passage of air to said chemical, and a nipple normally concealed between the folds of said belt and attached to the same for blowing or admitting supplementary air into the belt to reestablish its buoyancy.

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