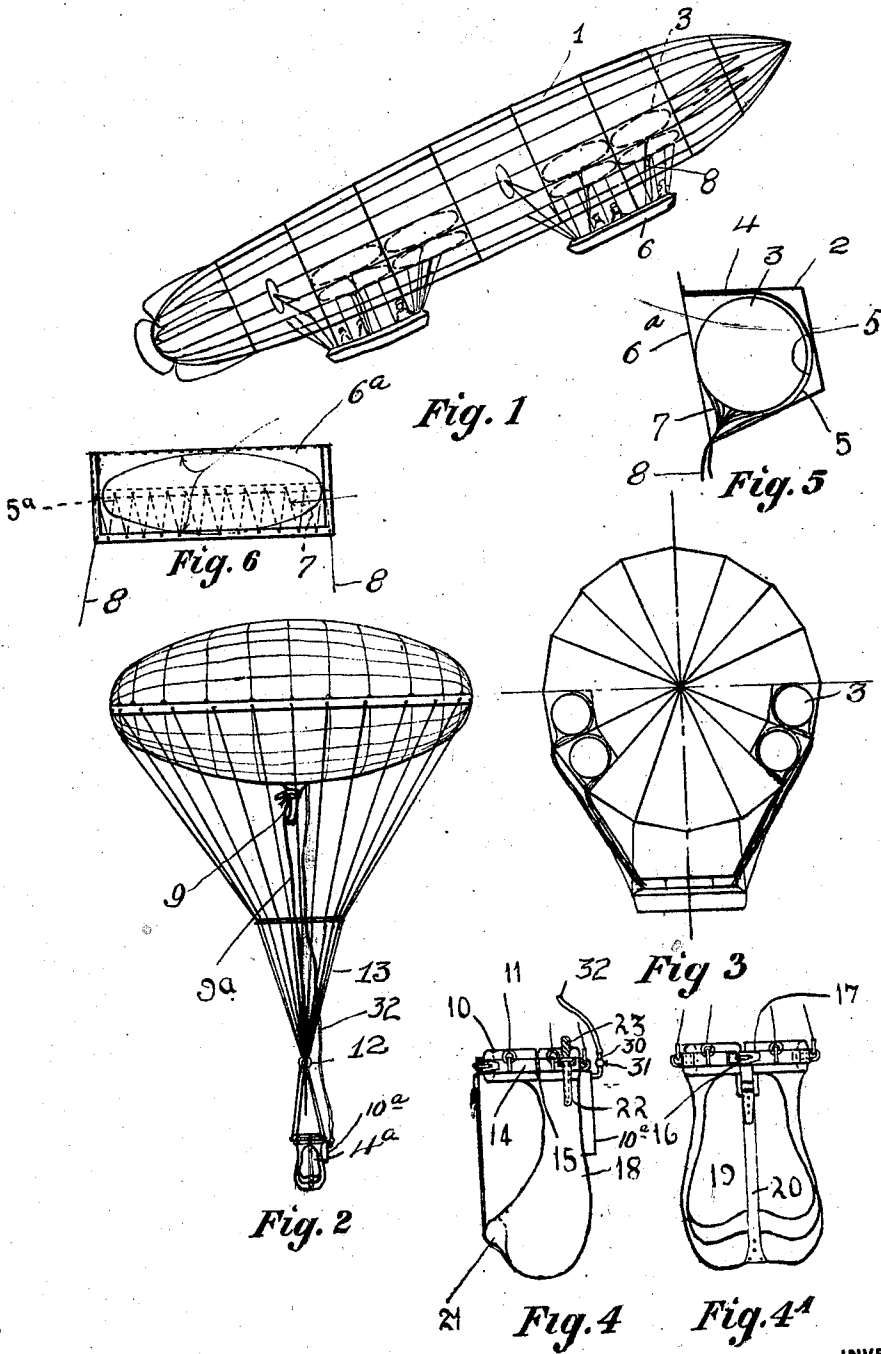


996,361.



WITNESSES

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# UNITED STATES PATENT OFFICE.

JOHN J. RECTENWALD, OF PITTSBURG, PENNSYLVANIA.

LIFE-SAVING DEVICE.

996,361.

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To all whom it may concern:

Be it known that I, JOHN J. RECTENWALD, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Life-Saving Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to life saving devices for aerial crafts, and more particularly to that type of craft known as dirigible of which the Zeppelin balloon is a fair example.

The primary object of my invention is to utilize ballonnets as life saving devices and as the lifting power of a dirigible balloon, and to so arrange the ballonnets that they can be easily and quickly released in the time of danger to safely convey and land the passengers or occupants of the balloon.

Another object of the invention is to provide a balloon with ballonnets that can be easily operated to land a passenger without necessarily stopping the operation of the balloon, and it is in this connection, that suitable provision is made for closing the ballonnet compartment after the ballonnet has been withdrawn therefrom.

A further object of the invention is to provide a ballonnet with a novel carrier adapted to be attached to the body, the carrier being constructed whereby it will float on the water, can be easily removed from the body, and when attached to the body will permit of free movement of the limbs, either for swimming or walking purposes.

A still further object of this invention is to provide a life saving device that will insure perfect safety of the occupants of a dirigible balloon.

With the above and such other objects in view as may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawing forming a part of this specification, where-

Figure 1 is a side elevation of a dirigible balloon provided with the life saving device,

Fig. 2 is an enlarged elevation of a detached ballonnet constituting a life saving device, Fig. 3 is an end view of the dirigible balloon showing diagrammatically the life saving device in position, Fig. 4 is a side elevation of a detached carrier adapted to form part of the life saving device, Fig. 4<sup>a</sup> is a front elevation of the same, Fig. 5 is an enlarged diagrammatic view of a ballonnet compartment, and Fig. 6 is a front elevation of the same.

In the accompanying drawing 1 denotes a large dirigible balloon having the side walls thereof below or above the plane of the longitudinal axis of the balloon provided with groups or series of compartments 2, said compartments being constructed within the framework of the balloon and of a sufficient size to accommodate ballonnets 3. Each compartment is provided with a closing curtain 4 retained in an open position within each compartment by the ballonnets 3 thereof, and attached to the free edge of the closing curtain 4 is a cable 5, said cable being laced, as at 5<sup>a</sup> with the ends extending from the compartment 2 to the passenger or operator's basket or car 6 suspended beneath the body of the balloon adjacent to each end thereof. The ballonnet 3 is normally retained in the compartment 2 by a panel 6<sup>a</sup> secured in position by cables 8 extending downwardly to the basket or car 6, whereby the ballonnet 3 can be quickly released in case of accident or released for other purposes and the compartment 2 closed by the curtain 4.

Each ballonnet is constructed of a similar or lighter material than that of the large balloon 1 and is filled with a similar gas to the balloon 1, whereby the ballonnets will have the same buoyancy and lifting power proportionately to the balloon 1, whereby the ballonnets within the compartment 2 will serve as one of the many units for lifting the large balloon, while each ballonnet is of a sufficient size to support a body and gradually lower the same to the earth. Each ballonnet is provided with a valve 9 and a valve cord 9<sup>a</sup> extending downwardly to a point within easy reach of an operator located in a belt 10 suspended by cables 11 from a center ring 12, carried by the con-

verging supporting cables 13 of the ballonets. The belt 10 is preferably made of metallic sections 14 with some of said sections hinged together, as at 15 while other sections are connected by a staple 16 and hasp 17, thus permitting of the belt 10 being secured around the body under the arms, somewhat similar to an ordinary life preserver. Connected to the inner sides of the metallic sections 14, which are preferably made of aluminum are casings made of canvas containing cork, whereby the belt will support a body when floating upon the surface of water.

The belt 10 is provided with a depending carrier or bag 18 having the front and rear sides thereof cut away, as at 19 and the front side of the carrier or bag connected by a strap 20 to the belt 10. The carrier at the lower end of the strap 20 is provided with a suitable cushion 21 for the occupant of the carrier, while the carrier or bag serves as a further support for the back of the body and allows the limbs to freely move, whereby the person within the carrier can either swim or walk as occasion may demand. The belt is provided with a scabbard 22 for a knife 23, whereby a person within the carrier can easily sever the cables 11 of the bag of carrier 18 should it become necessary to quickly remove the carrier from the body or move the carrier from under the balloonnet, particularly when landing in water.

The valve cord 9<sup>a</sup> is provided whereby gas can be released from the balloonnet to hasten the descent if necessary, also to allow gas to escape from the balloonnet for deflating purposes, thereby preventing the balloonnet from being lost should the carrier be severed from the same.

The number of ballonnets used in connection with the large balloon depends upon the carrying capacity thereof and the use of the balloon. For instance, for war purposes a large number of ballonnets can be provided whereby scouts can descend and reconnoiter, or messengers can be safely landed from the balloon without necessarily retarding the progress of the same.

It is principally as a life saving device that my invention has been designed, therefore I do not care to confine myself to the type of balloon in connection with which the ballonnets are used, to the number of ballonnets employed, to the particular design of the carrier or to the disposal of the ballonnets in the balloon body.

To prevent a sudden descent of the balloonnet, air can be admitted to the balloonnet and this is accomplished by providing the carrier with a small tank or reservoir 10<sup>a</sup> containing compressed hydrogen, the tank 10<sup>a</sup> being provided with an outlet pipe 30 having a valve 31. The outlet pipe 30 is connected by a tube or flexible connection

32 to the balloonnet. The hydrogen within the tank 10<sup>a</sup> can be advantageously used when it is desired to gradually land.

Having now described my invention what I claim as new, is:—

1. In a life saving device, the combination of a balloon having the side walls thereof provided with compartments, inflated valved ballonnets detachably mounted in said compartments and each constituting a lifting unit when mounted in its respective compartment, a carrier connected to each ballonnet and means whereby the valve of the ballonnet can be operated from the carrier for the purpose of causing a deflation of the ballonnet.

2. In a life saving device, the combination of a balloon provided with compartments, an inflated valved ballonnet in each compartment, a carrier connected to each ballonnet, and means operated from the carrier for opening the valve to cause the deflation of the ballonnet, and means for detachably retaining said ballonnets within said compartments.

3. In a life saving device, the combination with a balloon having the side walls thereof provided with compartments, of inflated ballonnets arranged within said compartments, a carrier connected to each ballonnet, means for detachably retaining said ballonnets within said compartments, and means for closing said compartments after said ballonnets have been released.

4. In a life saving device, the combination of a balloon having compartments formed therein, inflated valved ballonnets detachably mounted within said compartments, a carrier connected to each ballonnet, each carrier comprising a sectional belt, means whereby the valve of each of the ballonnets can be opened causing thereby a deflation of the ballonnet, a bag suspended from said belt, and means to keep said belt afloat upon water.

5. In combination with a balloon having compartments formed therein, and baskets suspended from said balloon, inflated ballonnets detachably mounted in said compartments, carriers connected to said ballonnets and positioned at said baskets, and rip panels adapted to retain said ballonnets within said compartments.

6. In combination, a balloon having the sides thereof provided with a plurality of compartments extending longitudinally with respect to the balloon, inflated ballonnets removably mounted in each of said compartments, means for closing the compartments, means whereby the compartments can be opened for the removal of the ballonnets, a carrier connected to each of the ballonnets, and means operated from the carrier to cause a deflation of the ballonnets.

7. In a life saving device, the combination

of a balloon having the side walls thereof provided with compartments, inflated valved ballonnets detachably mounted in said compartments, a carrier connected to each ballonnet, means whereby the valve of the ballonnet can be operated from the carrier for the purpose of causing a deflation of the ballonnet, and means for supplying air from

the carrier to the ballonnet to prevent a sudden descent of the ballonnet.

In testimony whereof I affix my signature in the presence of two witnesses:

JOHN J. RECTENWALD.

Witnesses:

MAX H. SROLOVITZ,

KARL H. BUTLER.