A. BOOMHOVER.

AUTOMATIC LIFE SAVING DEVICE.

APPLICATION FILED JAN. 12, 1916.

1,203,471. Patented Oct. 31, 1916.

Fig. 1.

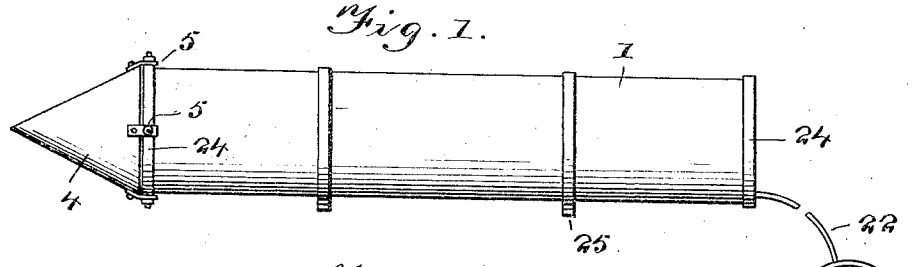


Fig. 2.

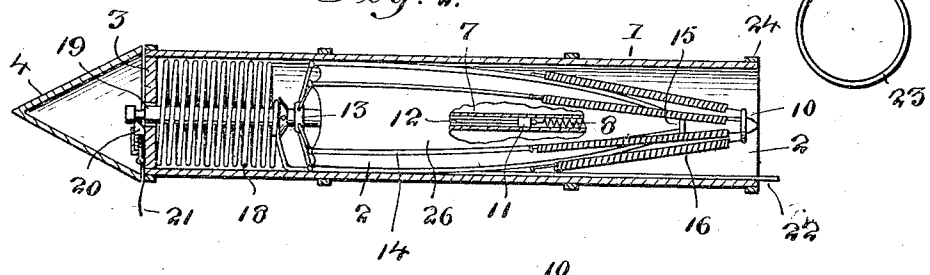


Fig. 3.

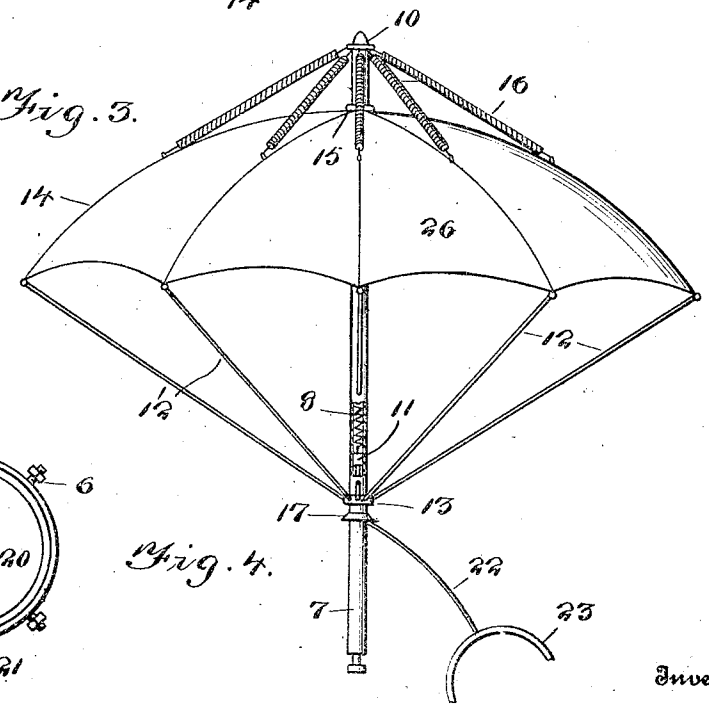
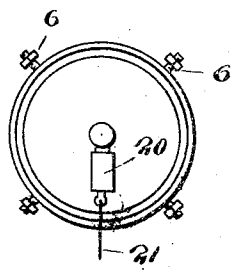


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

ARTHUR BOOMHOVER, OF ST. ALBANS, VERMONT.

AUTOMATIC LIFE-SAVING DEVICE.

1,203,471. Specification of Letters Patent. Patented Oct. 31, 1916.

Application filed January 12, 1916. Serial No. 71,769.

To all whom it may concern:

Be it known that I, ARTHUR BOOMHOVER, a citizen of the United States, residing at St. Albans, in the county of Franklin and State of Vermont, have invented new and useful Improvements in Automatic Life-Saving Devices, of which the following is a specification.

This invention relates to automatic life saving devices, the same being especially adapted for aerial purposes, to be carried by aircraft of all kinds so that in case of an accident or emergency, the aviator, observer or passenger will be provided with a parachute which will open automatically and enable him to descend to the surface of the earth without danger.

One of the principal objects of the invention is to provide in connection with a foldable parachute, a housing or casing in which said parachute is normally contained, combined with means whereby the parachute is instantly withdrawn or ejected from its housing when required and automatically spread or expanded to its full extent so as to immediately check the descent of the person to whom the life saving device is attached.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement of parts, as herein described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a side elevation of the housing and attaching means for the parachute. Fig. 2 is a longitudinal section through the same showing the folded parachute in place therein. Fig. 3 is an end view of the housing after the cap of the housing has been removed. Fig. 4 is a side elevation of the parachute after it has been spread automatically upon leaving its housing.

Referring to the drawings, 1 designates a hollow cylindrical housing which is shown as open at one end as at 2 and closed at its opposite end by a disk-shaped plate or head 3. The end of the housing containing the plate 3 is covered by a substantially conical hollow cap 4 to reduce head resistance to a minimum, the cap 4 being disposed at the forward end of the housing in accordance with the direction in which the aircraft is moving.

The cap 4 is provided with rearwardly extending ears 5 provided with holes to receive nuts 6 by means of which the cap 4 may be temporarily fastened to the forward end of the housing 1. These nuts 6 may be readily removed and the cap 4 detached.

The parachute comprises a main central staff 7 which is of tubular formation and contains a contractile spring 8 one end of which is fastened permanently to a collar or end piece 10 fastened to the upper extremity of the staff. Attached to the opposite or lower extremity of said spring at 11 are the inner ends of a plurality of radiating stays 12 which are flexible and which are slidable through guide openings in a multiple fair leader 13 secured to the staff 7 at a suitable point. The stays 12 radiate outwardly and are connected at their outer extremities to the lower extremities of a circular series of flexible braces 14. The upper extremities of these braces are connected at 15 to the staff 7. Contractile springs 16 connect the braces 14 to the cap or collar 10 at the upper end of the staff 7.

Just below the fair leader 13 the staff is provided with a fixed collar 17 against which bears one end of an ejecting spring 18, the opposite end of said spring bearing against the inner face of the detachable cap or plate 3 above referred to. The extremity of the staff 7 is reduced and inserted through a central aperture 19 in the plate or cap 3 where it is engaged by a displaceable latch 20 which engages the reduced end of the staff and holds the parachute in place. The latch 20 has attached thereto one end of a trip rope or cord 21 which is to be fastened to a belt around the body of the person using the parachute so that when a pull is given on said trip rope, the latch 20 is displaced thereby allowing the expansion or ejector spring 18 to displace the parachute from the housing. As soon as the parachute is withdrawn from the housing, it is automatically spread to its useful position by means of the springs 16 acting to open the braces 14. This overcomes the comparatively weak spring 8 and draws the stays 12 outwardly as shown in Fig. 4. 22 designates a suspension rope connected at its upper end to the staff 7 and connected at its lower end to a belt or sling 23 which may be placed around the body of the person using the device. The housing 1 is reinforced by means of hoops 24 encircling the same and is further provided with anchoring bands or straps 25 by means of which the housing may be secured to the frame of the aircraft.

From the foregoing description, taken in connection with the accompanying drawings, it will now be understood that when the aviator or passenger or other person is thrown from the aircraft or jumps therefrom, a pull is first effected on the trip rope 21 to release the parachute which then slides from its housing with the person suspended by means of the belt or sling from the lower end of the suspension rope 22. The parachute immediately spreads itself outwardly to its full extent thereby immediately checking the descent of the person. In view of the fact that the stays 12 are drawn into and housed within the tubular staff 7 there is no likelihood of their becoming entangled or caught as the parachute automatically spreads itself to its useful position. The body 26 of the parachute may be composed of any desired textile or other material which will fold compactly for insertion in the housing.

Having thus described my invention, I claim:—

1. A parachute comprising a flexible and collapsible body, a tubular staff to which said body is fastened, stays extending from the lower edge of the body into said hollow staff, body spreading springs connecting the body with the upper extremity of the staff above the junction of the body of the parachute with said staff, and a spring contained within said hollow staff and having the stays connected thereto and acting to draw the stays into the staff when the device is folded or collapsed.

2. The combination with a foldable parachute embodying a central staff, and spreading means, of a housing in which said parachute is slidable when collapsed, a head plate at one end of said housing, a latch on said head plate for holding the parachute in place, means for automatically tripping said latch, an ejecting spring within said housing for displacing said parachute when the latch is tripped, and a stream line cap detachably associated with the forwardly facing end of said housing.

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

ARTHUR BOOMHOVER.

Witnesses:

ELMER JOHNSON,

MARGARET MCGEE.