W. PETERSON.

SAFETY SUIT FOR AVIATORS.

APPLICATION FILED FEB. 1, 1919.

1,325,108.

Patented Dec. 16, 1919.

3 SHEETS—SHEET 1.

Fig. 1.

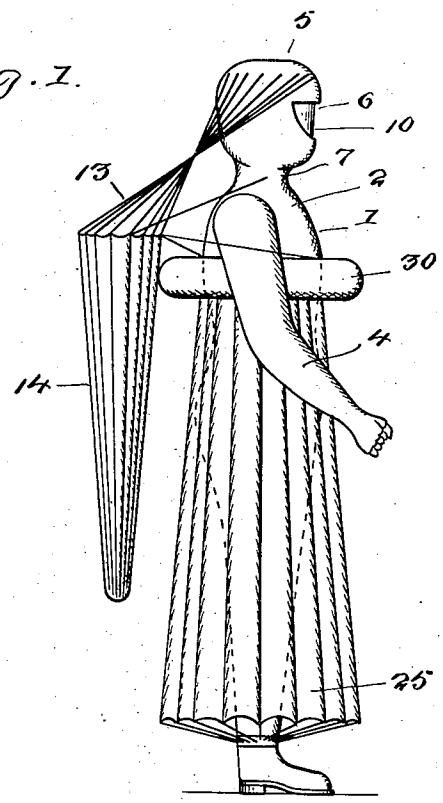
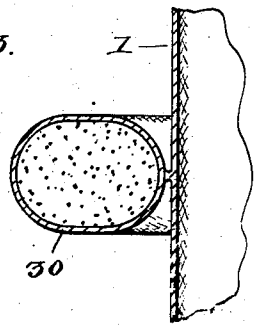


Fig. 3.



Witnesses

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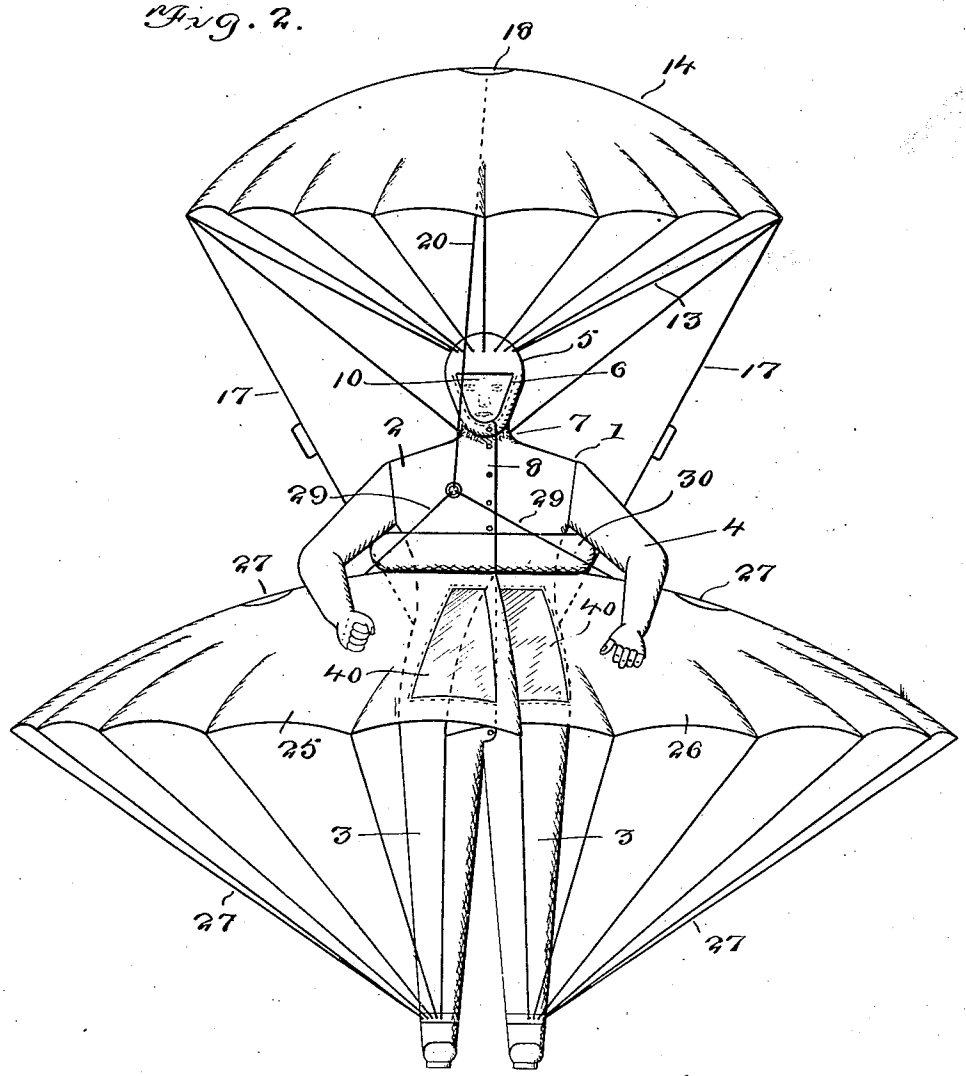
3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 4.

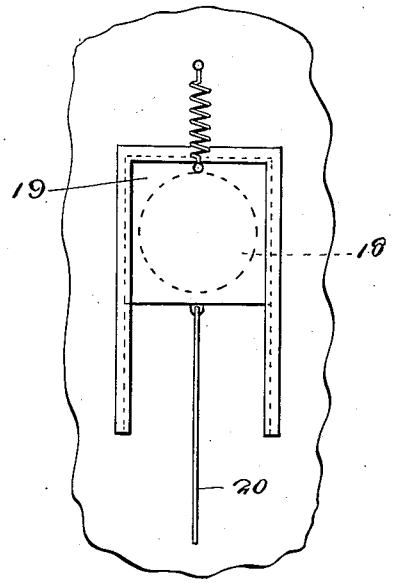


Fig. 5.

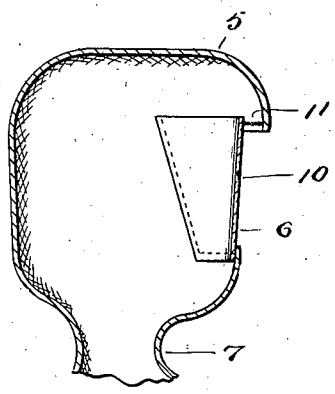
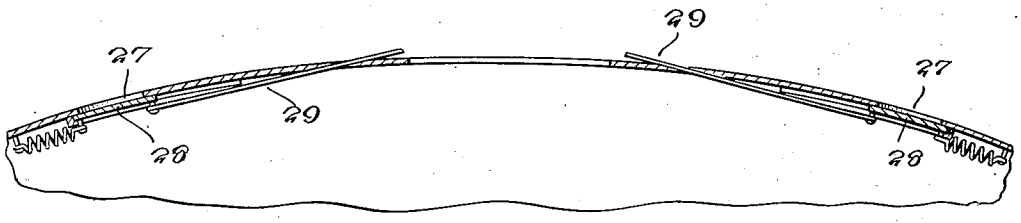


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM PETERSON, OF NEWARK, NEW JERSEY.

SAFETY-SUIT FOR AVIATORS.

1,325,108. Specification of Letters Patent. Patented Dec. 16, 1919.

Application filed February 1, 1919. Serial No. 274,489.

To all whom it may concern:

Be it known that I, WILLIAM PETERSON, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented new and useful Improvements in Safety-Suits for Aviators, of which the following is a specification.

My present invention has to do with safety appliances for the use of aviators; and it consists in the aviator's safety suit, hereinafter described and definitely claimed.

The object of my invention is to provide a comfortable and close-fitting suit, designed to be worn by an aviator and constructed and arranged in such manner that it will not impede the movements of the upper portion of the aviator's body and his arms, while he is seated in an aeroplane, and yet in the event of it being necessary for the aviator to jump from his machine during a flight, the suit may be depended upon to sustain the aviator in the air and to enable him to gradually descend to the earth; the suit including parachute members, means whereby air may be permitted to escape from the parachute members when the aviator desires to accelerate his descent, means for protecting the face of the falling aviator while enabling him to clearly see and breathe, and means for rendering the suit buoyant in the event of the aviator dropping into a body of water.

Other objects and practical advantages of the invention will be fully understood from the following detailed description, considered in connection with the drawings, accompanying and forming part of this specification, in which:

Figure 1 is an elevation showing my novel suit as the same appears when the aviator is standing upon the ground.

Fig. 2 is a similar view showing the suit and its appurtenances as the same appear when an aviator has jumped from an aeroplane and is descending through the air.

Fig. 3 is an enlarged detail section of the buoyant belt.

Fig. 4 is a detail showing one of the valves.

Fig. 5 is a detail section showing the helmet.

Fig. 6 is an enlarged detail section showing the valves complementary to the lower parachutes.

Similar numerals of reference designate corresponding parts in all of the views of the drawings.

My novel aviator's suit 1 is preferably formed of waterproof material, and comprises a body 2, legs 3 closed at their lower ends, arms 4 closed at their outer ends, and a helmet 5, having an opening 6 in its forward portion, and joined through a neck portion 7 with the upper portion of the body 2. The body is provided with a closure 8 of the general character common to union suits, and in the preferred embodiment of my invention the said closure is extended upwardly to the opening 6 in the helmet or headpiece 5.

In accordance with my invention, the opening 6 of the helmet 5 is guarded by a sheet 10 of appropriate transparent material; the said sheet 10 being attached along its lower edge to the front of the helmet 5 below the opening 6 and being carried upwardly to a point above the opening 6, where it is joined to the upper front portion of the helmet through the medium of textile material 11, which will permit the passage of ample air for the comfort of the aviator and yet will effectually prevent the rush of air from seriously affecting the aviator. It will also be readily appreciated that this safety provision will enable the aviator to see without difficulty.

Attached through guy lines 13 or the like to the helmet 5 is a parachute 14, of flexible material. The said parachute 14 is designed when not in use to hang at the back of the aviator so as to be entirely out of the way. When, however, the aviator jumps from his machine while in flight, the parachute is designed to assume the position shown in Fig. 2 with a view to retarding the downward movement of the aviator and at the same time enabling the aviator to fall feet foremost and in an upright position. It will also be noticed that the parachute 14 at its edge is connected with the waist portion of the suit 1 through the medium of guy cables 17.

Preferably arranged in the center of the

parachute 14 is a vertical conduit 18 for the passage of air. This conduit 18 is normally closed through the medium of a spring-pressed valve 19. The said valve 19 is connected to a cord 20, which extends downwardly and is connected to the body portion of the suit 1 at such point as to be within convenient reach of the hand of the aviator. By virtue of this provision, it will be manifest that the aviator is enabled, when he desires to accelerate his descent, to draw upon the cable 20 and thereby open the valve 19 against the action of its complementary spring so as to permit air to escape from under the upper parachute. It will also be apparent that when the aviator releases the cable 20 the valve 19 will be firmly closed, so as to enable the upper parachute to more adequately check the downward movement of the aviator.

Connected to the body portion 2 of the suit 1 are what I denominate the lower parachutes 25 and 26. These lower parachutes 25 and 26 are formed of flexible material, and are joined to the body portion of the suit in lapped relation. Said lower parachutes 25 and 26 are adapted, when not in use, to rest snug against the lower portion of the suit. When, however, the aviator jumps from a machine into the air the parachutes 25 and 26 will assume the positions shown in Fig. 2 and will be retained in said positions against the pressure of the air by the guy cables 27, which are interposed between and connected to the said parachute members and the legs and body portion of the suit as shown. It will also be observed that each of the members 25 and 26 is provided with an air escape conduit 27, controlled by a spring guided and normally closed valve 28, which valve is connected through the medium of a cable 29 with the suit 1, so that by drawing upon either of the cables 29 the aviator is enabled to open its complementary valve and thereby permit an escape of air from under the parachute member to which the valve belongs. The lapped relation of the inner portions of the parachute members 25 and 26 is materially advantageous inasmuch as it enables each of said members to reinforce the other, and in that way contributes to the sustaining capacity of the said members. It will also be apparent that by reason of the said lapped relation the member 25, when the parachute members are not in use, will drape over the member 26 so as to contribute to the comfort of the aviator when he is seated in his machine. By opening the valves in the members 25 and 26 the aviator is enabled to permit the passage of air from under said members and in that way enable himself to descend through the air in a steady manner and at the rate of speed desired.

Surrounding the waist portion of the suit 2 is a buoyant belt 30. This buoyant belt may be of the air-inflated type or may be filled with cork or other highly buoyant material, and it has for its purpose, in the event of the aviator falling into a body of water, to coöperate with the parachute members 25 and 26 in maintaining the upper portion of the aviator's body above the surface of the water. In this connection, the lapped relation of the parachute members 25 and 26 is important, inasmuch as it enables the members 25 and 26 to rest where they are lapped on the surface of the water, with the result that the aviator is adequately supported in the water.

By reference to Fig. 2 of the drawings, it will be observed that notwithstanding the appurtenances provided upon my novel suit, the arms of the aviator are left entirely free for the manipulation of the machine; and it will also be noted that the hands of the aviator are not covered. On the other hand, the closures of the sleeves 4 of the suit are effected around the wrists of the aviator.

At 40 in Fig. 2 are panels of suitable transparent material, calculated to enable the aviator to see through the lower parachutes incidental to a descent.

Notwithstanding the practical advantages hereinbefore ascribed to my novel suit, it will be readily appreciated that the suit is simple and inexpensive in construction and is not liable to interfere in any measure with the performance of the duties of the aviator while he is seated in and controlling the movements of his machine.

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

1. Safety means for aviators comprising a close-fitting suit, having legs, arms, and a helmet, with an opening in its front portion, a transparent layer connected to the helmet below the face opening therein, porous material interposed between and connected to said transparent layer and a helmet above the face opening, a parachute adapted, when opened, to rest above the helmet, and, when not in use, to hang from the helmet; the said parachute being connected with the helmet through the medium of guy cables and being provided with an air-escape conduit and a normally closed spring-pressed valve for controlling said conduit, a valve-opening cable extending from said valve to a point on the body of the suit, a buoyant belt carried by the suit and surrounding the waist portion thereof, lower parachute members having their inner portions arranged in lapped relation and connected to the waist portion of the suit, and each having a conduit for the escape of air, and a normally closed spring-pressed valve for closing said conduits, guy cables interposed between the lower parachute members and the lower

portion of the suit, and cables connected to the valves of the lower parachute members and extending to points on the suit within convenient reach of the wearer.

2. An aviator's safety device, comprising a helmet or head-piece, having an opening in its front, a transparent layer connected to the helmet below the opening and extending upwardly from the point of connection, and porous material interposed between and connected to the upper portion of the transparent layer and the helmet at a point above the opening therein.

In testimony whereof I have affixed my signature.

WILLIAM PETERSON.