

Sept. 15, 1931.

F. R. OWENS

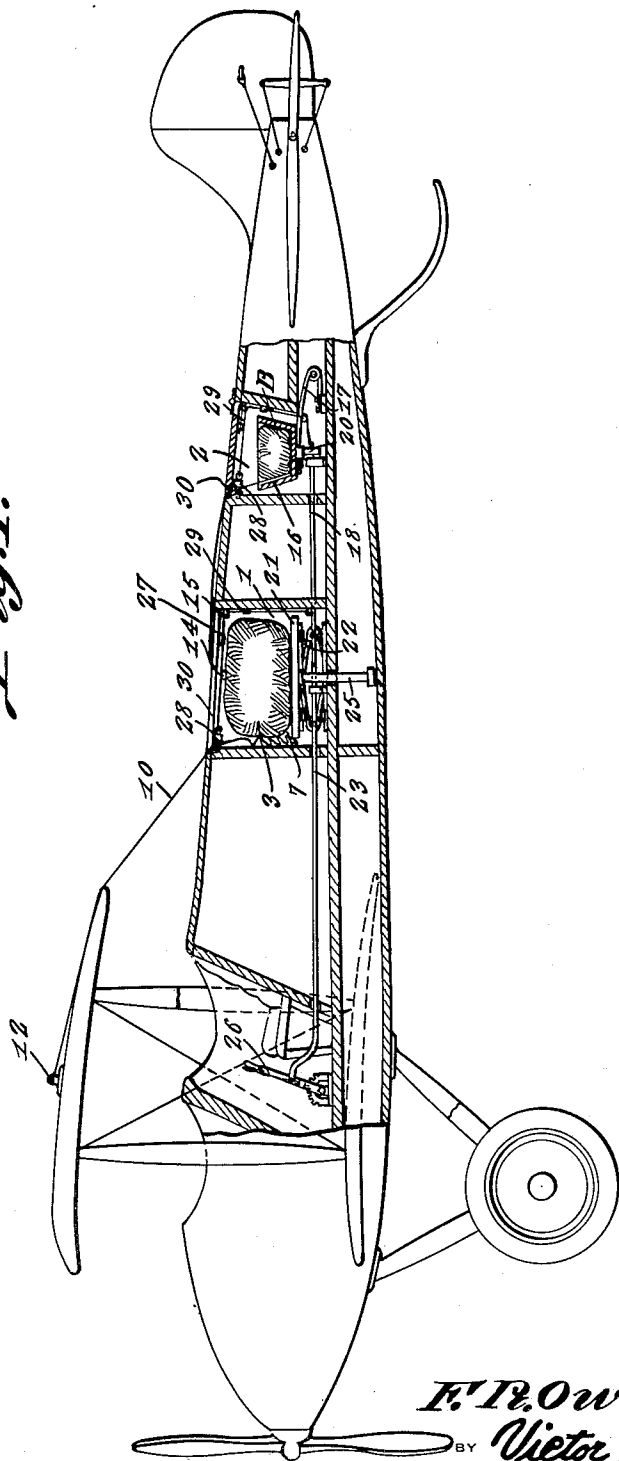
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SAFETY DEVICE FOR AEROPLANES

Filed Nov. 3, 1930

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Fig. 1.



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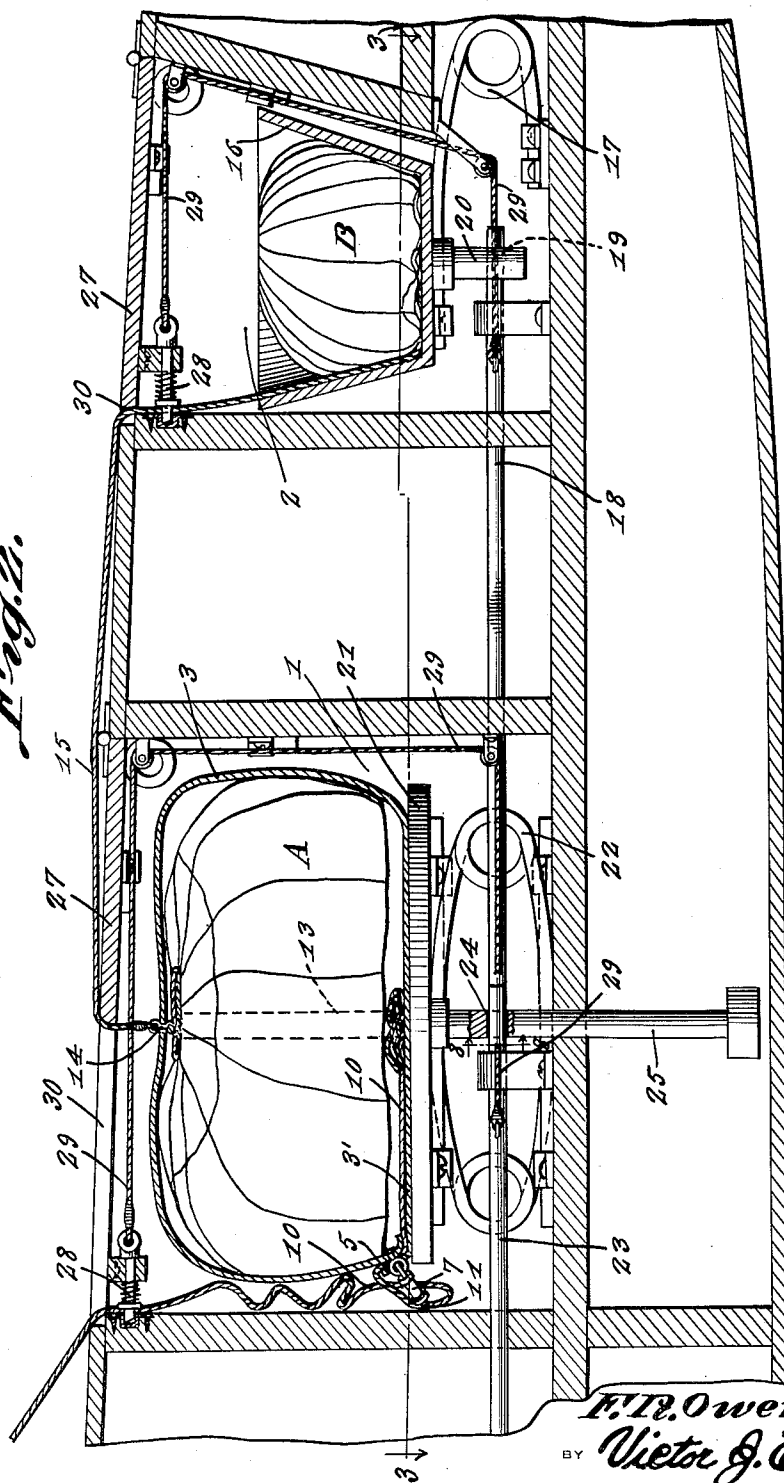
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Fig. 2.



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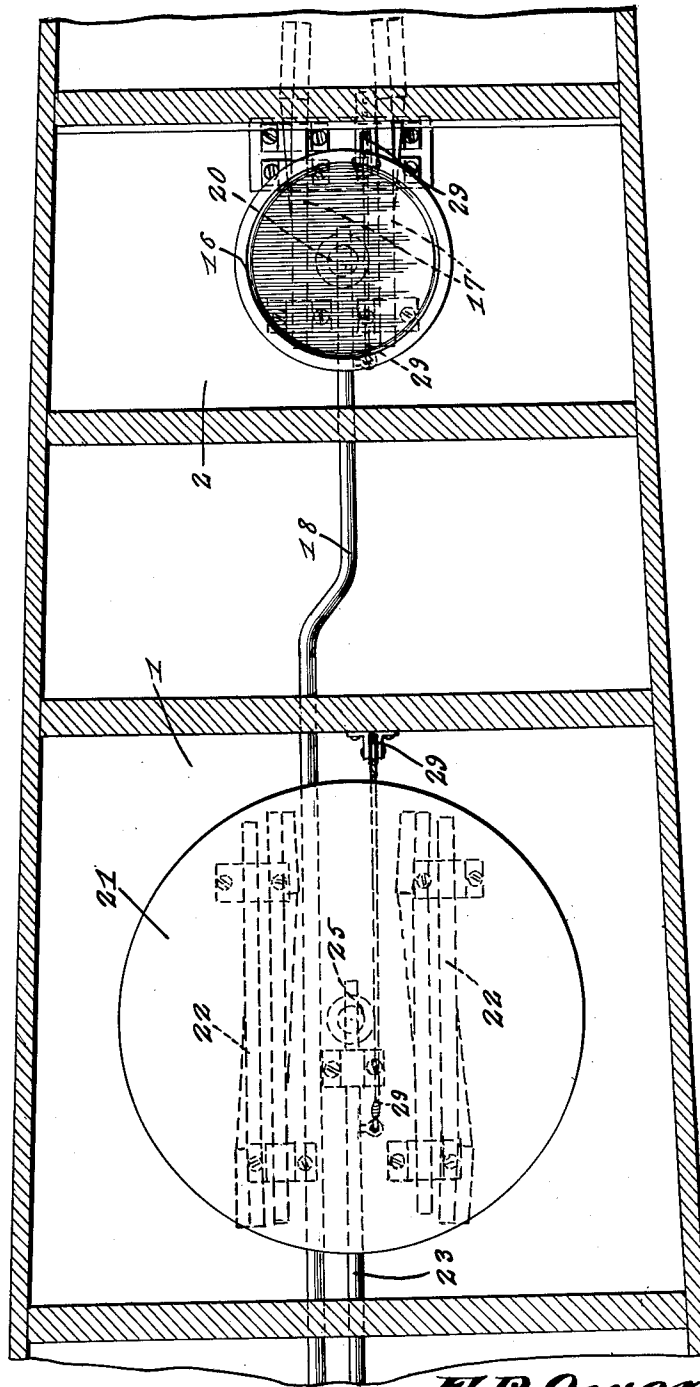
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Fig. 3.



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Fig. 4.

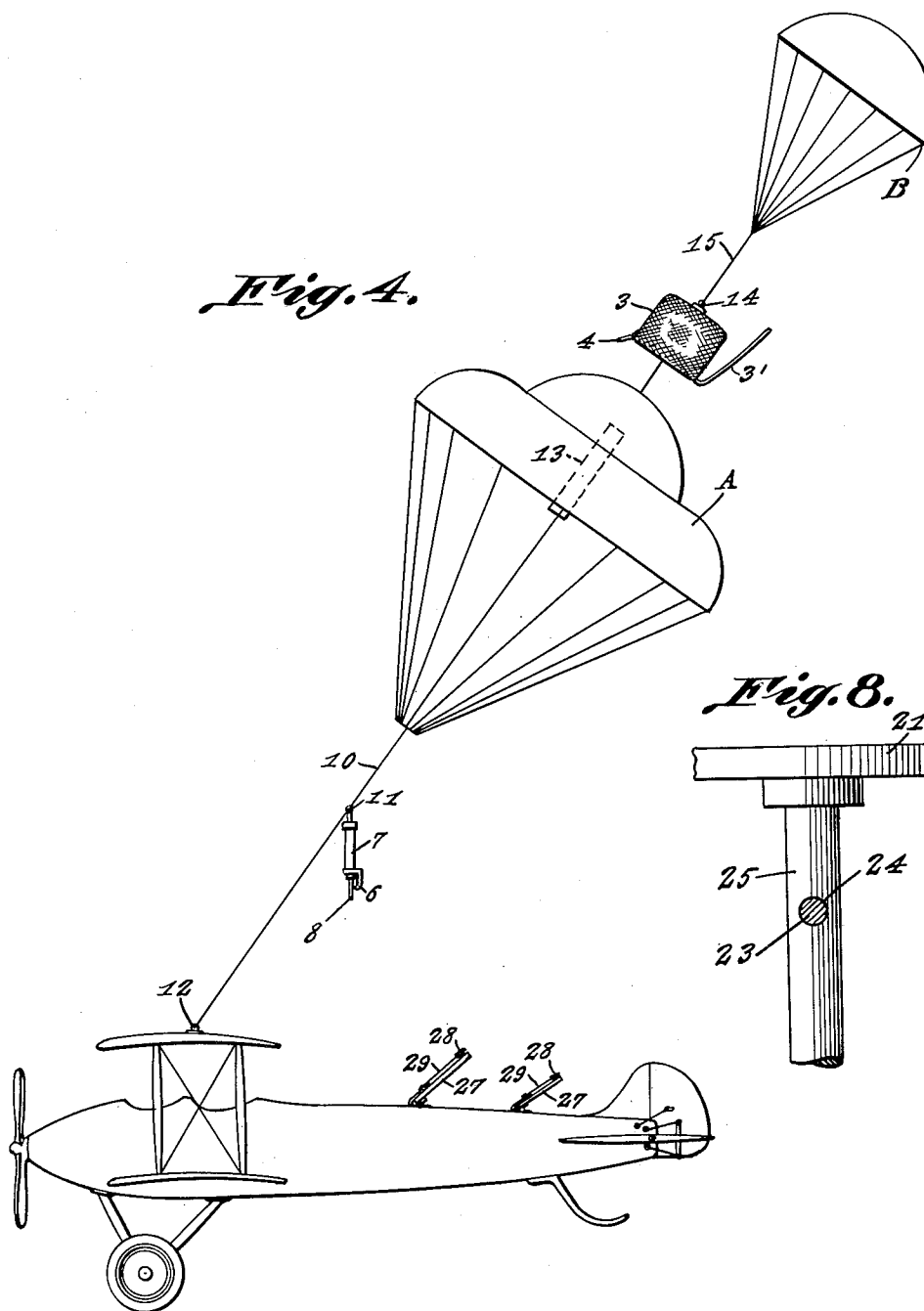
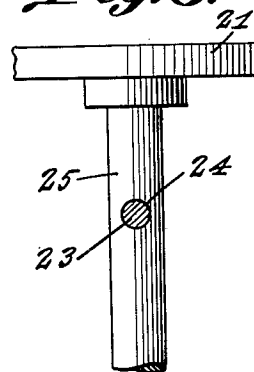


Fig. 8.



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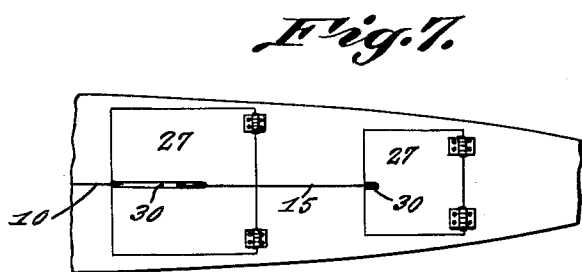
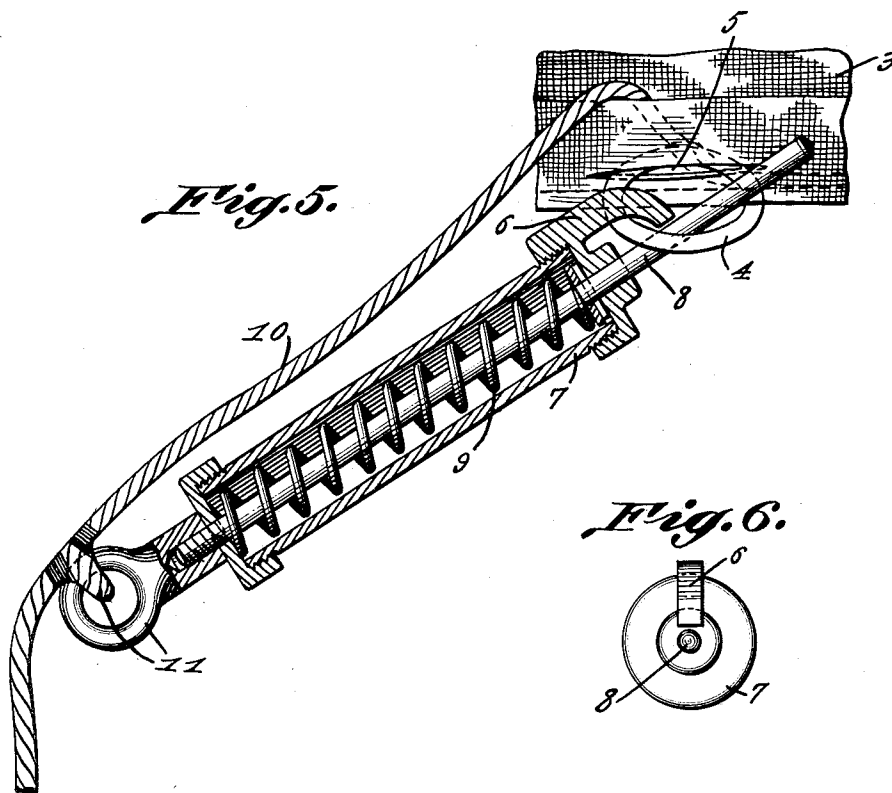
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SAFETY DEVICE FOR AEROPLANES

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UNITED STATES PATENT OFFICE

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SAFETY DEVICE FOR AEROPLANES

Application filed November 3, 1930. Serial No. 493,148.

This invention relates to a parachute for aeroplanes, the general object of the invention being to provide means for enabling the pilot of a plane to release a parachute when the plane is beyond control, with means for preventing the parachute from becoming entangled in any part of the plane while being moved from the plane and while being opened.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is an elevation, with parts in section, of a plane equipped with the invention, and with the parachutes enclosed and folded.

Figure 2 is an enlarged sectional view showing how the parachutes are arranged in their compartments in the plane, this view also showing the means for releasing the parachutes and the manner of connecting the cables to the chutes.

Figure 3 is a section on line 3—3 of Figure 2.

Figure 4 is a view showing the parachutes in open position.

Figure 5 is an enlarged sectional view showing the latch means for holding the sack which encloses the large parachute in closed position.

Figure 6 is an end view of the latch.

Figure 7 is a top plan view showing the doors for closing the parachute compartments.

Figure 8 is a section on line 8—8 of Figure 2.

In these drawings, the numerals 1 and 2 indicate a pair of compartments arranged in the fuselage of the plane, the compartment 1 being adapted to hold the large parachute A and the compartment 2

the small parachute B. A sack 3 encloses the large parachute, the parachute being inserted through the open bottom of the sack and the bottom closing part 3' of the sack is held closed by a ring 4 fastened to a part of the sack and passing through a slot 5 in the part 3', the ring being engaged by a hook 6 formed on one end of a cylinder 7 and by a plunger rod 8 which passes through the cylinder and is normally held projected by a spring 9 in the cylinder. A cable 10 has a part connected with the rear end of the cylinder 7, as shown at 11, and this cable is connected with the wing or other part of the plane, as shown at 12. From the point 11, the cable extends into the sack and through a tube 13 forming part of the chute A and said cable is connected to a swivel 14 in the top of the sack 3. A cable 15 connects the swivel with the small parachute B. This small parachute B is placed in a receptacle 16 in the chamber 2 which is adapted to be thrown upwardly by a spring 17, but which is normally held in a downward position by one end of a rod 18 engaging a hole 19 in a stem 20 depending from the bottom of the receptacle. This rod is guided for longitudinal movement in the fuselage.

The sack 3, containing the parachute A, rests on a platform 21 in the chamber 1 which rests on the springs 22 and is normally held in lowered position against the action of said springs by a rod 23 passing through a hole 24 in the stem 25 of the platform. The rods 18 and 23 are each connected to a hand lever in the cockpit, one of which is shown at 26. Doors 27 close the chambers 1 and 2 and are normally held closed by the spring bolts 28 which are connected by the cables 29 with the rods 18 and 23 respectively. These doors have openings 30 therein for the passage of the cables which are connected with the parachutes.

From the foregoing it will be seen that when the plane gets out of control for any reason and the pilot thinks it necessary to use the parachutes, he would move the levers 26 forwardly so as to cause the rods 18 and 23 to pull on the cables 29, thus re-

leasing the latches 28 of the doors 27 and at the same time releasing the stems 20 and 25 from the rods 18 and 23. The spring 17 would then throw the container 16 upwardly with sufficient force to throw the chute B over the tail of the plane. The springs 22 will move the bag about two-thirds out of the chamber. Thus the chute B is thrown from the plane and as it is acted on by the air, it pulls the bag 3, which has already been partly moved from its chamber, from the chamber, and as the cable 11 tightens it will retract the plunger rod 8 so that the same will move out of the ring 4, thus releasing said ring and further movement of the chute B will cause the sack to move from over the chute A, thus permitting the air to open the chute A, which will cause the chute to check the falling plane and lower the same gradually to earth in the usual manner, as shown in Figure 4.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:—

1. In combination with an aeroplane having a pair of chambers therein, a large parachute in one chamber, a small parachute in the other chamber, a sack enclosing the large parachute, a cable connecting the small parachute with the top of the sack, a cable connecting the large parachute with the plane, a fastener for closing the bottom of the sack with the parachute enclosed therein, means for connecting the fastener with the cable connected to the plane whereby said cable will release the fastener when the cable is tightened by the lifting of the sack by the small parachute, manually operated means for throwing the small parachute from the plane and for partly moving the sack from its chamber.

2. In combination with a plane having a pair of chambers therein, supports in the chamber, springs for moving the supports upwardly, latch means for normally holding the supports in their lowered positions against the action of their springs, manual means for releasing the latch means, doors closing the chambers, spring latches on the doors, means for moving the said latches to releasing position upon operation of the first mentioned latch means, a small parachute in one chamber and thrown therefrom by the actuation of the support in said chamber by the spring means, a large parachute, a sack enclosing the same and resting on the support in the other chamber, a cable connecting the top of the sack with the small parachute, a cable connecting the

large parachute with the plane, latch means for holding the sack closed, said latch means being connected with the cable which connects the large parachute with the plane whereby such latch means will be moved to releasing position when the cable is tightened by the lifting of the sack by the small parachute.

In testimony whereof I affix my signature.

FRANK R. OWENS.

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