T. DIAKONIUK.

PARACHUTE FOR AEROPLANES.

APPLICATION FILED DEC. 15, 1921.

1,428,013.

Patented Sept. 5, 1922.

2 SHEETS—SHEET 1.

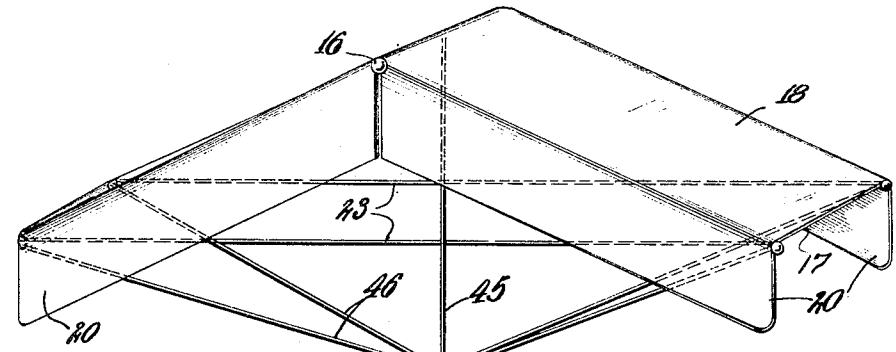
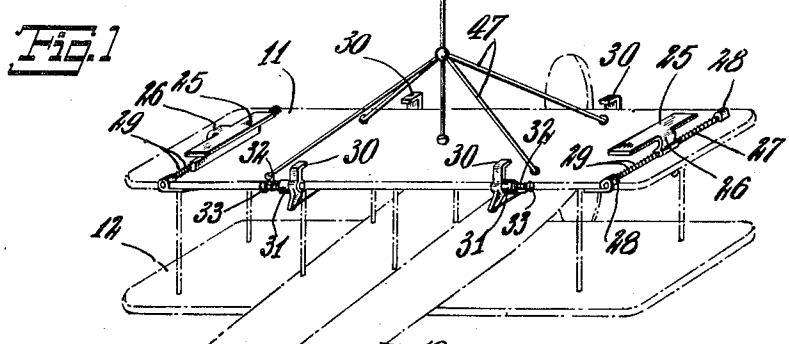


Fig. 1



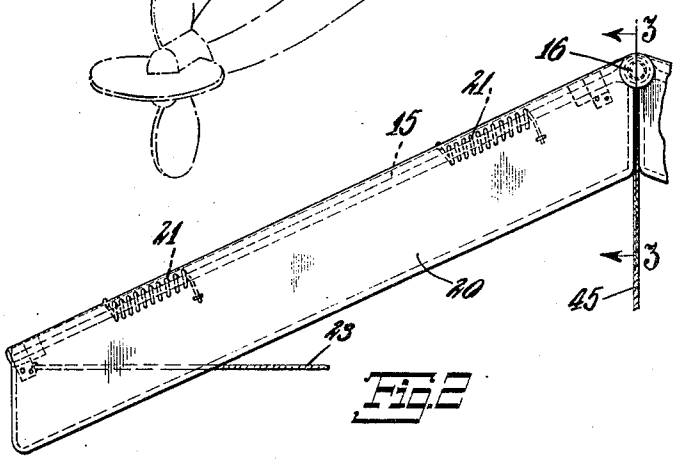


Fig. 2

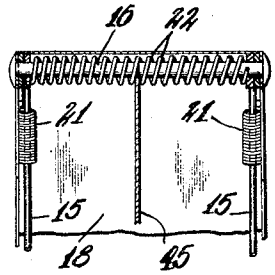


Fig. 3

Inventor

Theodore Diakoniuk

By Goldsmith & Polachek

Attorney

T. DIAKONIUK.

PARACHUTE FOR AEROPLANES.

APPLICATION FILED DEC. 15, 1921.

1,428,013. Patented Sept. 5, 1922.

2 SHEETS—SHEET 2.

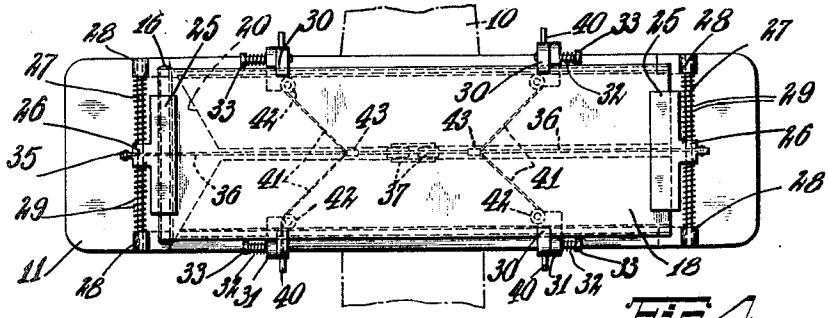


Fig. 4.

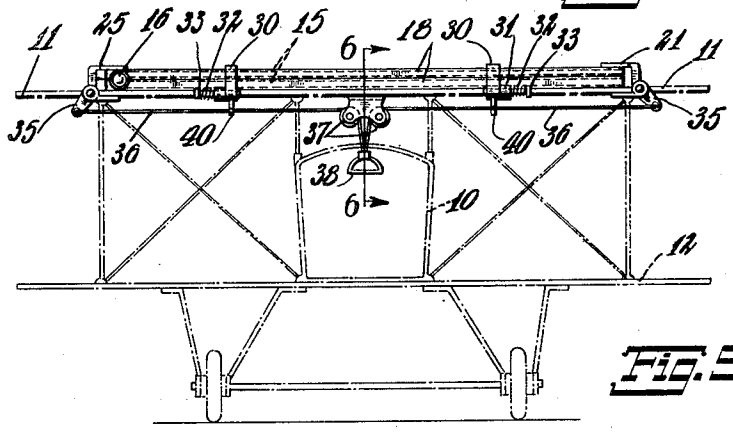


Fig. 5.

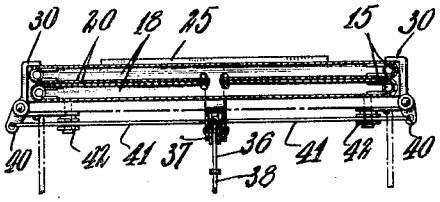


Fig. 6.

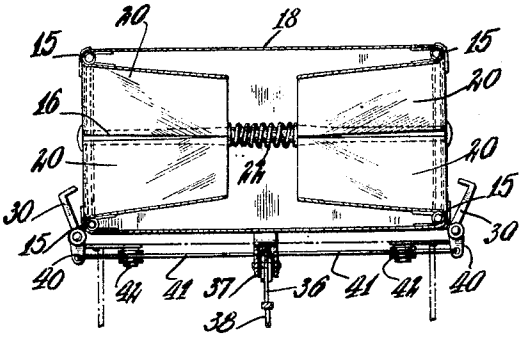


Fig. 7.

Inventor

Theodore Diakoniuk.

By Zoltan Polachek

Attorney

Patented Sept. 5, 1922. 1,428,013

UNITED STATES PATENT OFFICE.

THEODORE DIAKONIUK, OF EDMONTON, ALBERTA, CANADA.

PARACHUTE FOR AEROPLANES.

Application filed December 15, 1921. Serial No. 522,723.

To all whom it may concern:

Be it known that I, THEODORE DIAKONIUK, a citizen of Canada, residing at Edmonton, in the Province of Alberta, and Dominion of Canada, have invented certain new and useful Improvements in Parachutes for Aeroplanes, of which the following is a specification.

This invention relates to parachutes for aeroplanes, and it has for a general object to provide a novel parachute which may be carried upon the aeroplane, and opened when necessary by the aeroplane pilot or operator.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

Fig. 1 of the drawings is a perspective view showing my improved parachute in opened position and with an aeroplane suspended therefrom.

Fig. 2 is a fragmentary side view of the opened parachute.

Fig. 3 is a transverse section on the line 3—3 of Fig. 2.

Fig. 4 is a plan view of the top plane of the aeroplane showing the means for holding the parachute in folded position thereon.

Fig. 5 is a front view of the folded parachute and its retaining means.

Fig. 6 is a transverse section on the line 6—6 of Fig. 5.

Fig. 7 is a transverse view taken along the same line as Fig. 6 but showing the retaining means released, and the parachute as commencing to unfold.

In the drawings I have shown my invention applied to an aeroplane of the biplane type, comprising a body 10 and upper and lower planes 11 and 12 respectively, the upper plane having my improved parachute attached thereto, the parachute comprising briefly a suitable sheeting attached to a foldable frame which lies flat on the plane 11 when not in use, and opens by spring action when the retaining means is released.

The frame of my improved parachute comprises the pair of side bars 15 preferably spaced apart a distance approximately equal to the fore and aft width of the plane 11, the respective bars of each pair being hinged to a common transverse rod 16, while the opposed ends of the pairs of bars are connected by rigid transverse pieces such as 17. The frame thus formed is covered with a suitable fabric 18. Hinged to the bars 15 are side flaps 20 comprising a fabric suitably attached to a frame element, these flaps being urged to positions, extending vertically downward from the main body of the parachute as in Fig. 1, by springs 21 coiled around the bars 15, the hinge elements of the flaps being constructed to prevent them opening beyond the vertical position shown in Fig. 1. The two main sections of the parachute are urged to open position by means of a spring 22 coiled around the rod 16, being retained in the inverted V-position shown by means of a pair of ropes 23 attached to their opposed ends.

When not in use the parachute is arranged on the plane 11 as shown in Fig. 5, with the flaps 20 folded under the two main sections of the parachute and the said main sections folded upon one another, retaining devices being provided which engage both the sides and ends of the folded parachute. The devices which engage the ends of the parachute comprise the gripper bars 25 which extend along the ends thereof and project thereover, being each provided with a hinge ear 26 engaging a transverse rod 27 fixed in brackets 28 on the plane 11. Coiled around the rods are spring 29 which engage the hinge ear 26 in a well known manner to cause the gripper bars to be pressed downwardly on the parachute.

The devices which engage over the sides of the parachute comprise the hooked fingers 30 adapted to engage over the bars 15 and hinged to brackets 31 fixed to the plane 11. The fingers 30 are normally urged to locking position by means of coiled springs 32 which surround their hinge pintles 33 and bear at one end on the fingers 30 in a well known manner.

Fixed to the gripper bars 25 are arms 35 which project downwardly through suitable apertures in the plane 11 and have connected thereto the cables 36 which extend transversely inwardly around pulleys 37 and have a common handle 38 suspended from their inner ends. Fixed to the hooked fingers 30 are downwardly extending arms 40 from which cables 41 lead around pulleys 42 to connect as at 43 to the cables 36, extending in a generally oblique direction between the pulleys 42 and cables 36. As will be apparent, when the handle 38 is pulled, the bars

25 and fingers 30 will be swung away from gripping engagement with the parachute, permitting the latter to open under the influence of the springs 21 and 22.

The aeroplane is suspended from the parachute by a series of ropes preferably comprising a central one 45 connected at opposite ends to the parachute and the plane 11 centrally of each. From this rope 45 a number of ropes 46 lead to the four corners of the parachute, while other ropes 47 radiate to different points on the plane 11.

It is believed that the manner of operation and use of my improved parachute will be readily understood from the above description. In case of accident to the aeroplane, the pilot pulls handle 38, releasing the fingers 30 and bars 25. The action of springs 21, 22 causes the parachute to open, the aeroplane descending with retarded velocity to the ground.

Having thus described my invention what I claim as new and desire to protect by Letters Patent of the United States is as follows:

1. In combination with an aeroplane, a parachute comprising a pair of flat surface members hinged to one another, and means detachably securing said members upon a lifting plane of the aeroplane.

2. In combination with an aeroplane, a parachute comprising a pair of flat surface forming members hinged to one another, and means detachably securing said members upon a lifting plane of the aeroplane, said means including latch fingers engaging the sides of the said members, and gripper bars engaging the ends thereof.

3. In combination with an aeroplane, a parachute comprising a pair of flat surface forming members hinged to one another, and means detachably securing said members upon a lifting plane of the aeroplane, and a common releasing means for said gripper bars and latch fingers.

4. In combination with an aeroplane, a parachute comprising a pair of flat members hinged together, and flaps hinged to the sides of said members.

5. In combination with an aeroplane, a parachute comprising a pair of flat members hinged together, and flaps hinged to the sides of said members, and springs acting to unfold said members with respect to one another and said flaps with respect to said side members.

6. In combination with an aeroplane, a parachute comprising a pair of flat members hinged together, and flaps hinged to the sides of said members, and springs acting to unfold said members with respect to one another and said flaps with respect to said side members, and means limiting the unfolding movement of said members and flaps.

7. In combination with an aeroplane, a parachute comprising a pair of flat members hinged together, and flaps hinged to the sides of said members, and springs acting to unfold said members with respect to one another and said flaps with respect to said side members, and means limiting the unfolding movement of said members and flaps, the said limiting means for said members comprising a pair of ropes attached to the opposed ends thereof and adapted to retain said members jointly in inverted V-form.

8. In combination with an aeroplane, a parachute comprising intermediate and end members hinged together, and means releasably holding the parachute upon the aeroplane with the end members doubled under the intermediate members, said means including hinged gripper bars, projecting lugs on the hinge elements of said gripper bars, and a transversely movable retaining strip adapted to engage under said lugs.

9. In combination with an aeroplane, a parachute comprising intermediate and end members hinged together, and means releasably holding the parachute upon the aeroplane with the end members doubled under the intermediate members, said means including hinged gripper bars, projecting lugs on the hinge elements of said gripper bars, and a transversely movable retaining strip adapted to engage under said lugs, and springs urging said strip to engaging position with said lugs.

In testimony whereof I have affixed my signature.

THEODORE DIAKONIUK.