O. DORAITE.

SEAT STRAP.

APPLICATION FILED SEPT. 1, 1917.

1,252,252. Patented Jan. 1, 1918.

Fig. 1

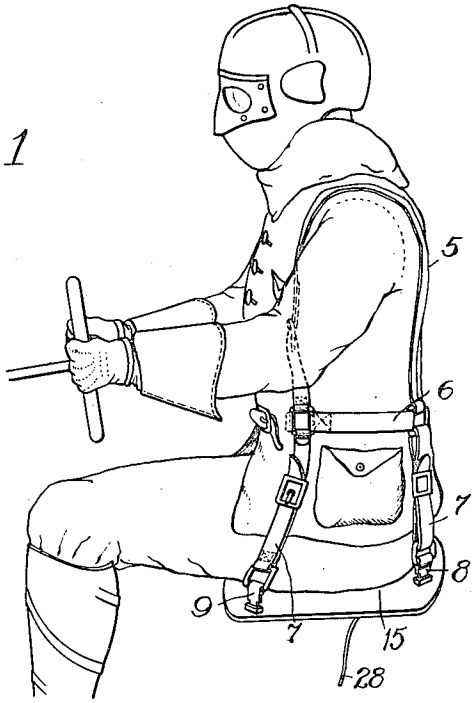


Fig. 2

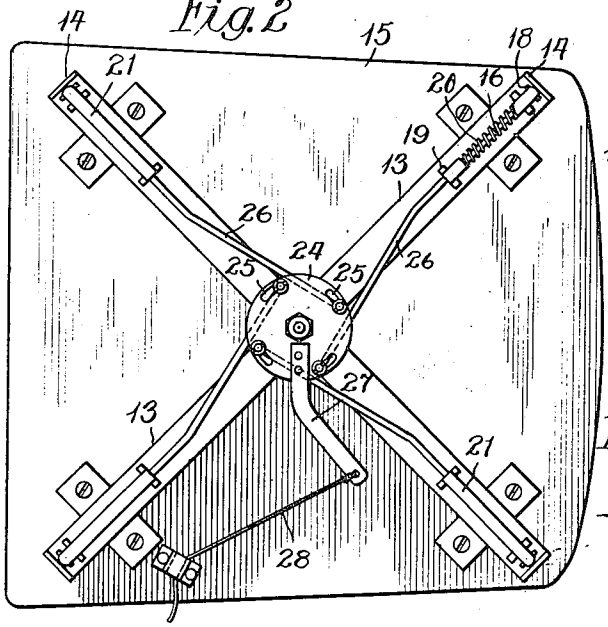


Fig. 3

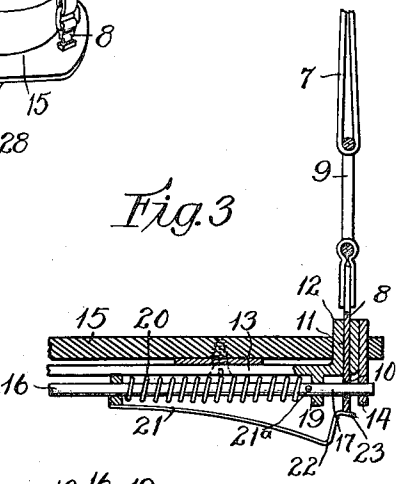


Fig. 4

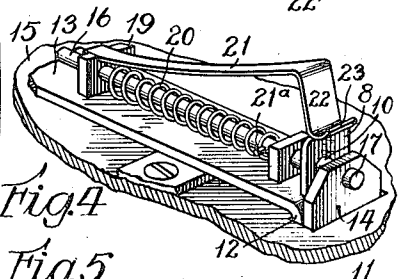
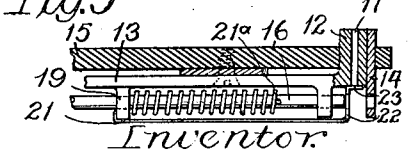


Fig. 5



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SEAT-STRAP.

1,252,252. Specification of Letters Patent. Patented Jan. 1, 1918.

Application filed September 1, 1917. Serial No. 189,307.

To all whom it may concern:

Be it known that I, ONA DORAITE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Seat-Straps, of which the following is a specification.

The present invention relates to a seat strap for securing a person to the seat of a moving conveyance, and is particularly adapted for use by aviators in connection with flying-machines.

One object of the invention is to provide a strap which will securely hold the user in place, and which by a single operation on the part of the user can be instantly released from held or secured position to free the occupant.

A further object of the invention is to detachably secure said strap at a plurality of places, thus distributing the strain of holding.

A further object of the invention is to connect all of the holding means for the strap to a single operative member, whereby movement of this single member will release all of the said holding means and fully release the strap.

A further object of the invention is to provide tension members for positively ejecting the ends of the straps from secured position when the releasing mechanism is operated.

A further object of the invention is to utilize the tension members for the purpose of maintaining the holding means in retracted position after the strap is released, so that said holding means are maintained in position to permit the re-insertion of the strap members.

The invention further consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings:

Figure 1 is an elevation showing an aviator equipped with the device of the present invention;

Fig. 2, an under face view of a seat showing the releasing mechanism;

Fig. 3, a detail section showing one end of the strap members with a locking device in locking position;

Fig. 4, a detail perspective showing one end of the strap member in locked position, together with the locking mechanism and ejector; and

Fig. 5, a detail section showing the locking member held in retracted position after the release of the strap.

In the art to which the present invention relates, and particularly in conjunction with aviation work, it has been found desirable to provide straps for securing the flier to the seat. This is particularly true in connection with hydro-aeroplanes and in cases where difficult maneuvering is carried out, as, for instance, looping operations. It is also desirable that this strap should be so held as to be capable of instant release to free the operator in an emergency, and it is to accomplish this result that the present invention has been devised.

Referring now to the drawings, the strap portions consist of loop members 5, adapted to encircle the shoulders of the wearer, a band 6, which is connected to the shoulder sections and extends about the waist of the wearer, and depending sections 7 extending downward from the waist section. In the construction shown, there are four of these depending sections, each of which, at its lower extremity, is formed with a metal tab 8; and secured to the tab is a loop or ring, or other member, 9, for receiving and retaining the depending strap sections 7.

The tab 8 is formed with an opening 10 and is adapted to be inserted through a slot 11 formed between a flanged end 12 of a metal rail or plate 13 and an outer plate or plates 14. When passed through the slot 11, the tab section extends to a point underneath the seat 15, as will be understood from Figs. 3 and 4. There is one of these plates 13 for each of the strap sections. Carried by each of the said plates is a rod or plunger 16 adapted to have its outer end 17 extend through a hole or opening 18 in the tab 8, and this rod 16 is carried by bearing members, in the form of lugs, 19. A spring 20 surrounds said rod and is held between one of the lugs 19 and a pin or other protuberance 21^a. This spring exerts a pressure on the rod, tending to normally hold it projected, as in Fig. 3.

A leaf-spring 21 is secured to one of the lugs 19 and is formed with a flanged end 22, having a lip 23. The lip 23 underlies the lower end of the opening 11, and this

construction and arrangement enable the spring 21 to serve a two-fold function, as will hereinafter appear. As will be seen from Fig. 2, when the strap is not in secured position and the tab end 8 is out of the slot 11, the flanged end 22 of the spring will overlie the end of the rod or plunger 16, holding this plunger retracted. When the tab end is inserted through the slot, it will first engage with the lip 23 of the spring 21 and force this spring downward. When the spring has been forced to a point so that it clears the plunger 16, the said plunger, under the influence of the coil-spring 20, will be projected forward, and when the opening 10 in the tab 8 is brought into alinement with the plunger, the plunger will pass therethrough, locking said tab end as in Fig. 3.

The spring 21 further serves as an ejector for the tab end. When the plungers 16 are retracted by the mechanism which will be hereinafter described, as soon as the plunger passes clear of the opening 10 in the tab 8, the spring 21 which is under pressure, as shown in Fig. 3, and in engagement with the end of the tab 8, will force the tab 8 out of the slot 11, projecting it clear of said slot and completely releasing the strap from the seat, thus freeing the operator.

The mechanism shown for operating the plungers 16 to retract them consists of a disk 24, having a plurality of slots 25, into which are entered the bent ends of rods 26 connected to the plungers. An arm 27 is connected to said disk, and from this arm extends a cable, cord, or other suitable member 28, which is placed in position to be readily and quickly grasped by the user. Upon pulling this cord, the said disk is rotated, which obviously causes a retracting movement of the rods 26 and the plunger 16, withdrawing them from the position in Fig. 3 to the position of Fig. 5, and upon such withdrawal the said spring 21 acts to force or eject the tab ends 8 from the slots 11, releasing the strap.

It is thought that the operation is clear from the foregoing and need not be gone into in detail. While the invention has been described with considerable particularity, it is not deemed to be limited other than may be by the terms of the appended claims.

I claim:

1. A strap of the class described, comprising a portion adapted to be secured to the wearer, a portion adapted to be secured to a seat, means for locking said seat portion in place, means for releasing said locking means to free the strap from secured position, and tension means for projecting said seat portion from position after said releasing operation, substantially as described.

2. A strap of the class described, comprising a portion adapted to be secured to the wearer, a portion adapted to be secured to a seat, means for locking said seat portion in place, means for releasing the locking means, a tension member serving to project said portion from locked position upon release of the locking means, and also serving after such projection to hold the locking means in retracted position, substantially as described.

3. A strap of the class described, comprising a portion adapted to be secured to the wearer, a portion adapted to be secured to a seat, means for locking said seat portion in place, means for releasing said locking means, a leaf-spring adapted when the locking means are released to project the said seat portion from position with respect to the seat, and said spring further acting to hold the locking means retracted after said projection and in position to permit of reëngagement with the seat portion, substantially as described.

4. A strap of the class described, comprising a portion adapted to be secured to the wearer, a plurality of sections depending therefrom, a spring-pressed bolt for locking each of said sections to a seat, a pivoted plate-like member arranged centrally with respect to said bolts, a connection between each of said bolts extending in a radial manner to said pivoted member, and means arranged within reach of the operator for turning said pivoted member and simultaneously releasing all of the bolts, substantially as described.

5. A strap of the class described, comprising a portion adapted to be secured to the wearer, a plurality of sections depending therefrom, a spring-pressed bolt for locking each of said sections to a seat, a pivoted member arranged centrally with respect to said bolts, a connection between each of said bolts and said pivoted member, means arranged within reach of the operator for moving said pivoted member and simultaneously releasing all of the bolts, and tension means for projecting said pending sections from position with respect to the seat after said releasing operation, substantially as described.

6. A strap of the class described, comprising a portion adapted to be secured to the wearer, a plurality of sections depending therefrom, a spring-pressed bolt for locking each of said sections to the seat, a pivoted member arranged centrally with respect to said bolts, said member being formed with slots to receive the ends of said bolts, whereby a selected bolt may move to locking position without imparting movement to said member, and means arranged within reach of the operator for moving said pivoted member and simultaneously retracting all of said bolts to release the depending sections, substantially as described.

7. A strap of the class described, comprising a portion adapted to be secured to the

wearer, a plurality of depending sections therefrom adapted to be secured to a seat, a spring-pressed bolt for locking each of said sections in position to the seat, means for holding each of said bolts in retracted position and under tension, said holding means being moved out of holding position by contact with a depending section, whereby the bolt moves under the force of said tension to engage and lock the end of said depending section when said end is moved into proper position for such engagement, and means for simultaneously releasing all of said bolts to free all of said sections from secured position, substantially as described.

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