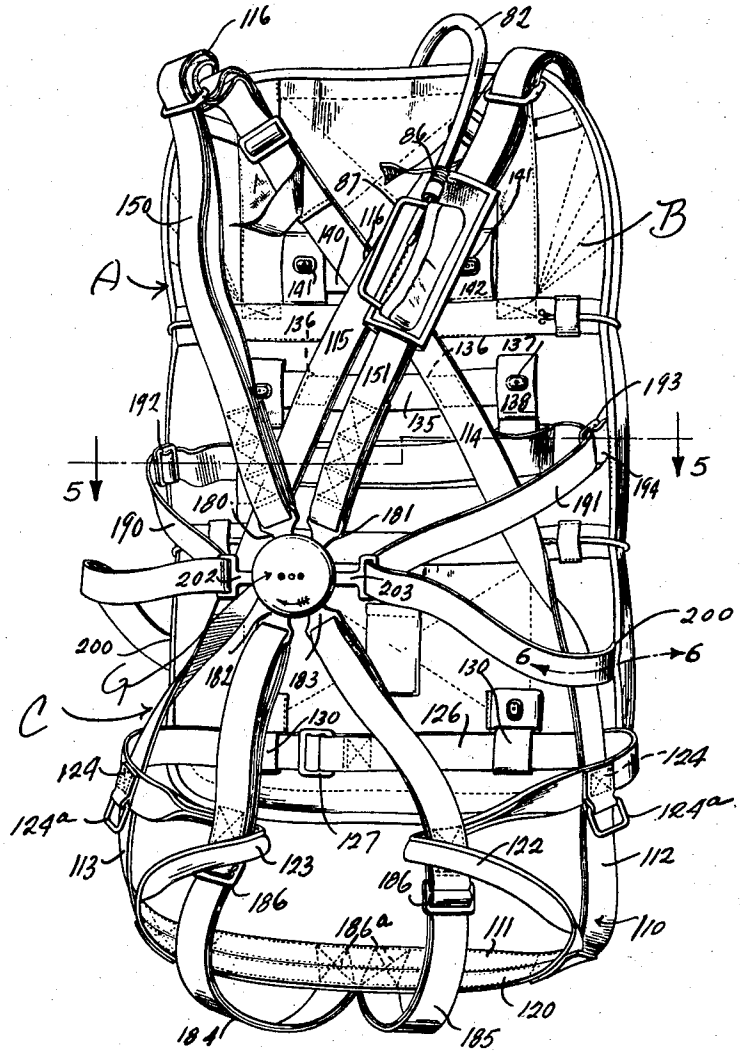
June 12, 1951 L. L. IRVIN 2,556,923

PARACHUTE HARNESS

Original Filed Oct. 23, 1945 3 Sheets-Sheet 1

FIG 1



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FIG 2

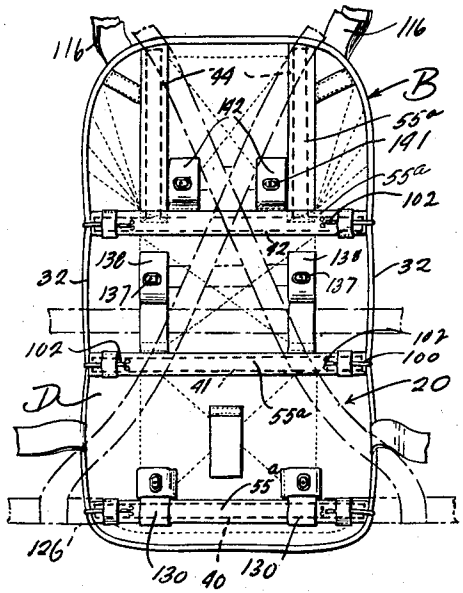
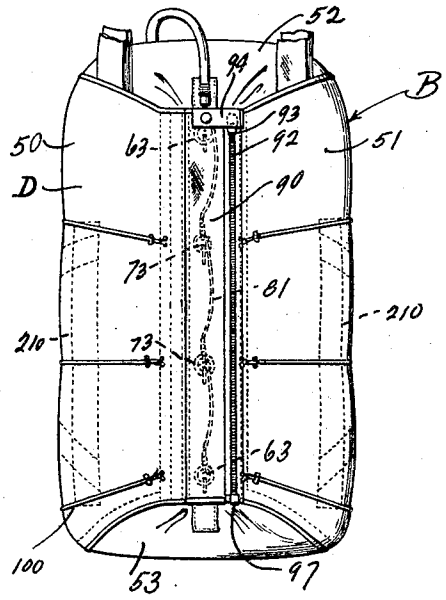


FIG 3



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PARACHUTE HARNESS

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FIG 4

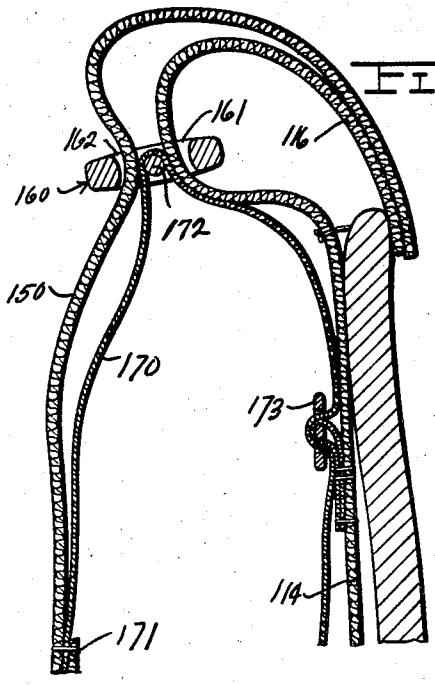
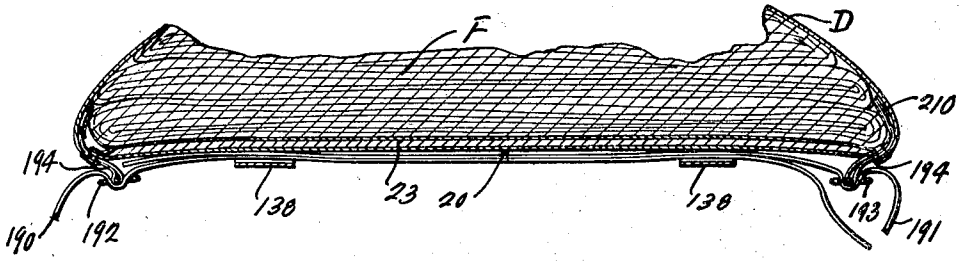


FIG 5



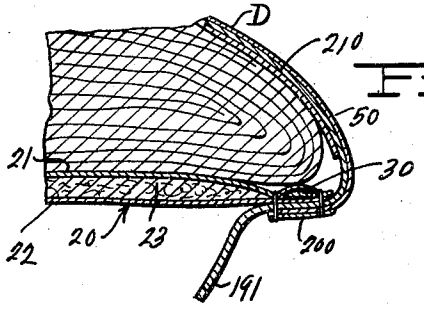


FIG 6

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Patented June 12, 1951 2,556,923

UNITED STATES PATENT OFFICE

2,556,923

PARACHUTE HARNESS

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Original application October 23, 1945, Serial No. 623,916. Divided and this application October 7, 1949, Serial No. 120,025

2 Claims. (Cl. 244—151)

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This invention relates to improvements in parachute harnesses.

The primary object of this invention is the provision of an improved parachute harness of the single point release coupling type, constructed and arranged to adapt itself with ease to the body of a wearer so that the latter may move with safety and comfort.

Other objects and advantages of this invention will be apparent from the following detailed description.

In the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of the harness,

Figure 1 is a perspective view of the improved harness as used upon the type of pack shown in U. S. Patent No. 2,542,925.

Figure 2 is a front view of the pack container showing in dotted lines associated harness construction.

Figure 3 is a rear view of the closure side of the pack.

Figure 4 is a cross sectional view taken thru the harness shoulder portion showing an adapter adjustment for the harness.

Figure 5 is a cross sectional view taken substantially on the line 5—5 shown in Figure 1.

Figure 6 is an enlarged cross sectional view taken thru a portion of the pack and harness substantially on the line 6—6 of Figure 1.

In the drawings, wherein similar reference characters designate corresponding parts thruout the several views, the letter A may generally designate parachute equipment consisting of a pack B and a single point release coupling harness C.

The pack B includes the container D, which so far as the pack features are concerned, contains essential details of novelty in that the pack is relatively thin and extremely flexible both longitudinally and laterally, as has been set forth in U. S. Patent No. 2,542,925 of which this application is a division.

The container D includes a base or foundation wall 20 consisting of inner and outer plies of flexible fabric 21 and 22, between which is located compact mat-like padding 23 held in position therein by horizontal, vertical and diagonal stitching. In lieu of this foundation wall, so far as the harness is concerned, such could constitute, instead of part of the pack, a pad or other supporting wall to which the various details of the harness may be detachably or otherwise connected.

The wall 20 is of rectangular shape with the corners thereof rounded and held in shape by

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means of reinforcing cordage 30. The cordage 30 may be of any suitable textile material, or rawhide, or even plastic. It is extremely flexible yet sufficiently stiff to retain and reinforce the outline of the wall, and indeed the shape of the pack with which it may be associated.

The pack container D may include side flaps 50 and 51 and top and bottom or end flaps 52 and 53. The flaps may consist of an integral part of the base wall. The flaps 52 and 53 are provided with the usual grommets to receive the cones or studs 63 for receiving the stud pins of a rip cord 81. The rip cord may be protected by means of a safety flap 90 secured upon a flap of the container, which is controlled by means of a slide fastener 92 having a detachable connection at its lower end 97 and a protecting tab 94 therefor at the handle end.

Referring to the improved harness C, the same has been provided with the thought of safety in mind, and the ability of the wearer to quickly release himself from the harness. In the main it is of the single point coupling release type and includes a main sling portion 110 having a seat strap 111 within which the wearer sits as in a swing during descent and from which side riser webs 112 and 113 extend along the sides of the wearer and thence to the back where they provide back straps 114 and 115 crossing at 116a. They extend upwardly to form suspension lines 116 shown best in Figure 4 of the drawings. I also provide a complementary seat web or strap 120 which lies in the same plane and may be an integral part of the strap portion 111 above described. At the ends of the seat portion 120 I provide U-shaped loops 122 and 123 just above the seat or sling of the harness; the loops being connected at 124 to the riser web portions 112 and continuing therefrom in a back strap 126 having an adjusting adapter 127; it of course being understood that the back strap consists of two straps approaching the adapter at which place the back strap may be adjusted as to length. The loop portions 122 and 123 may be rendered rather stiff by doubling the material of the webbing upon itself and stitching it in such condition as shown in Figure 1. This back strap overlies the lower bar reinforcement 40 in the container and fits across the small of the back of the wearer. It is retained in position upon the container by releasing tabs 130. The riser webs 112 and 113 extend along the sides and intermediate the ends of the base wall of the container and the same are held in properly spaced relation by a strap 135 stitched at 136 thereto; the

ends of the strap 135 being detachably connected against the pack by fasteners 137 upon suitable tabs 138 located upon the outer surface of the base wall of the container, as shown in Figure 1. Also at their crossing point the straps 114 and 115 are provided with a connecting cross strap 140 having snap fastener connections 141 with suitable tabs 142 provided upon the back wall of the container, as shown in Figures 1 and 2 of the drawings.

Suspension tabs or straps 150 and 151 are provided for complementary association with the back straps 114 and 115 respectively; the same being connected thru three bar adapters 160. The suspension webbing 116 is extended thru the passageway 161 between two of the bars and the suspension webbing 150 or 151, as the case may be, is extended thru the other opening 162 of the three bar adapter. In order to hold the position of the adapter, which lies over the shoulder of the wearer, and to accomplish snug fitting or accurate fitting of the harness upon the wearer, I provide a strap 170 secured at 171 as to the front suspension strap and therebehind; the same is threaded slidably over the intermediate bar 172 of the adapter and thence extended slidably or adjustably thru an adapter connection 173 upon the inside of the complementary suspension web 116, which in reality at that point is a back strap, as shown in Figure 4. The strap 170 of course will hold the adapter 160 in proper position so that the suspension webs at the shoulders of the wearer will be retained in proper connection for fitting the harness efficiently to the stature of the wearer.

As shown in Figure 1 of the drawings I provide a fixed point quick release coupling G which is well known, as to essential characteristics, in the prior art. I believe this to be the first time that a six point coupling has been used and in the main the same enables the operator to instantly free all the fasteners from the coupling and the ends of the harness will drop loose from the wearer. The coupling G receives detachable fasteners 180 and 181 at the ends of the front suspension straps 150 and 151 of the harness and it furthermore receives fasteners 182 and 183 adjustable at the ends of leg straps 184 and 185 respectively; the latter being secured at 186 upon the seat straps 111 and 120 and being adapted to extend therefrom thru the loops 123 and 122 respectively of the harness. These leg straps are provided with suitable adapters 186 to adjust their length.

I prefer to provide side means for adjusting the harness in enclosing relation upon the wearer. It consists of a cross belt arrangement adapted to lie across the middle of the back of the wearer including side straps 190 and 191 threaded thru three bar adapters 192 and 193 respectively; these buckles or adapters are secured by tabs 194 attached upon the container by being stitched in the structure thereof at the extreme side margins of the container, as will be hereinafter described. The straps or webs 190 and 191 are threaded thru these adapters in the usual manner so that they can be adjusted but will not too easily slide, and the free ends are then overlapped and held in position upon the pack by the tabs 138 above described, and as shown in Figure 12. The straps 190 and 191 are looped therefrom downwardly and at their free ends are secured at points 200 in the fabric structure of the container. Thus, the straps 190 and 191 provide the loops shown in Figure 1,

upon which are threaded fasteners 202 and 203. The latter is permanently connected to the coupling member G but the fastener 202 is releasable therefrom. The coupling may be operated to release the fasteners 180 and 183 inclusive and the fastener 202 and the wearer may drop all of the harness parts from his body and release himself from the entire parachute equipment.

Since the ends of the harness loops holding the fastener portions 202 and 203 are connected directly to the foundation walls of the pack, these points of connection may be reinforced by providing a reinforcing piece 210 along the inner side of the container flaps, as shown in Figure 6 of the drawings, to which the tabs 194 may be stitched. The other ends of the loops forming straps 190 and 191 are connected as shown at 200 in Figure 6 of the drawings; the straps 190 and 191 being continued around and connected to reinforcing straps 210 as shown in Figure 6. This arrangement of connecting the harness to the extreme sides of the wall upon which the harness is detachably connected, or to the foundation wall of the pack, whichever is preferred, insures that the wall will be held tight or close to the wearer's body at all times and form fitting therewith.

I prefer to provide coupling parts 124a upon the side risers of the harness adjacent to the seat for connection of safety straps, a life raft or a seat pack.

From the foregoing description of this invention it is apparent that an improved pack and harness has been provided which will enable a wearer to sit with ease within the aeroplane without relinquishing any safety factors essential to successful operation of the device should an emergency arise.

Various changes in the shape, size and arrangement of parts may be made to the form of invention herein shown and described, without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. A parachute harness comprising a U-shaped supporting sling including a seat and riser webs extending at the sides of the seat, thence in back crossing relation and terminating in suspension lines, flexible loops connected upon the riser webs immediately above the seat and having back straps extending thereacross connecting said loops and the riser webs, a single point release coupling, leg straps connected with said seat for threading thru said loops and having fastener means for connection to said coupling, upper body attaching straps including suspension lines and front straps provided with fastener means for releasable connection with said coupling, adjustable adapter connection means connecting said upper body straps with the back crossing straps and located adjacent the connection of the suspension lines of the back crossing straps, and V-shaped side body attaching straps including fastener means for connection with the release coupling and means connecting said V-shaped side body attaching straps together including a back strap connection therebetween.

2. In a parachute harness the combination of a substantially U-shaped sling including a seat portion and riser webs extending in back crossing relation and terminating in suspension lines, front straps having adapter connection with the said suspension lines at the normal shoulder of the wearer, said front straps extending in convergent relation downwardly at the front and

having fasteners at the ends thereof, side loops connected with said sling immediately above the seat portion, leg straps for releasable threading thru said loops, said leg straps at the ends thereof having fasteners, V-shaped side straps having slidable fasteners at the apices thereof, similar complementary ends of the side straps having means definitely connecting them together, a length adjustable back strap connecting the other complementary ends of the V-shaped side straps together, and a single release coupling device for connecting together the fasteners aforementioned.

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