

F. SMITH.
PARACHUTE HARNESS.
APPLICATION FILED APR. 18, 1921.

1,403,984.

Patented Jan. 17, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

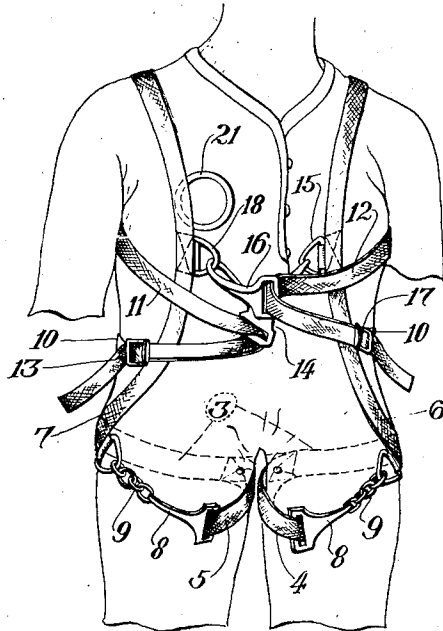
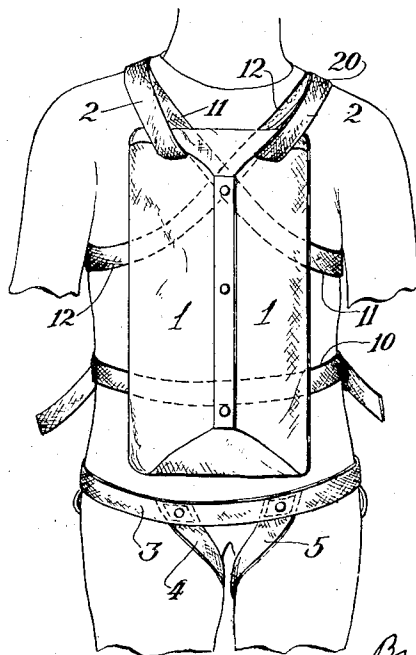


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

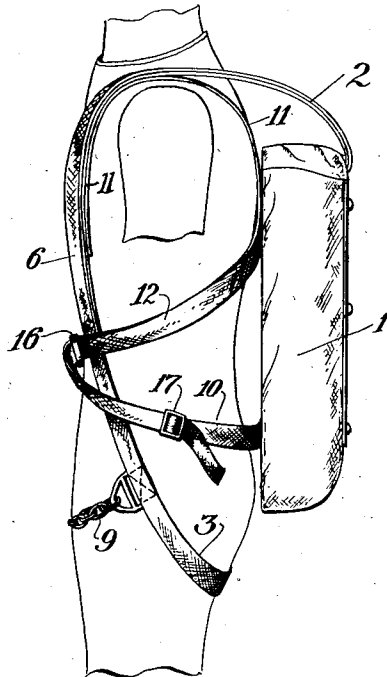


Fig. 4.

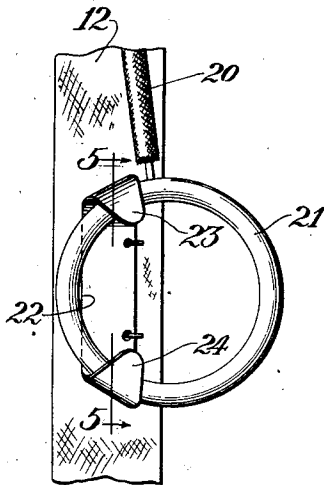
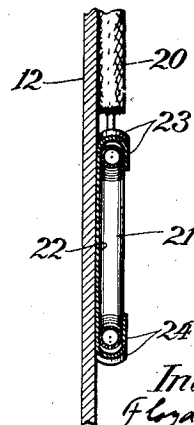


Fig. 5.



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UNITED STATES PATENT OFFICE.

FLOYD SMITH, OF SAN DIEGO, CALIFORNIA, ASSIGNOR TO FLOYD SMITH AERIAL EQUIPMENT COMPANY, A CORPORATION OF ILLINOIS.

PARACHUTE HARNESS.

1,403,984.

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Application filed April 18, 1921. Serial No. 462,202.

To all whom it may concern:

Be it known that I, FLOYD SMITH, a citizen of the United States, and resident of San Diego, San Diego County, California, and temporarily residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Parachute Harness, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object to produce a simple and novel harness for attaching a parachute pack to a wearer in such a manner that one can readily get into and out of the harness, can quickly and conveniently adjust it to fit his person, will have a maximum freedom of movement while wearing the harness, and be comfortable and at the same time securely held in making a descent.

The standard parachute pack of today in this country is one which is opened by means of a release cord having at one end a ring which is grasped by the wearer and pulled. It is of course highly essential that this ring be always maintained in a position to which the wearer will instinctively reach when he desires to open the pack. A further object of the present invention is to produce a simple, novel and efficient means for holding the ring of a pull cord in a definite, fixed position against accidental displacement, but in such a manner that the wearer of the pack may easily pull the ring out of such position when the pack is to be opened.

The various features of novelty whereby my invention is characterized will herein-after be pointed out with particularity in the claims; but, for a full understanding of my invention and of its objects and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawings, wherein:

Figure 1 is a front elevation of the trunk and parts of the limbs of a person wearing my improved harness;

Fig. 2 is a rear view corresponding to Fig. 1;

Fig. 3 is a side view;

Fig. 4 is a front elevation on an enlarged scale of a fragment of one of the strap members of the harness, the ring for the pull

cord, and the clip for holding the ring in place on said strap member; and

Fig. 5 is a section taken approximately on line 5-5 of Fig. 4.

Referring to the drawings, 1 represents a parachute pack out of which project suspending members, 2, which, in the present instance, are illustrated as being made of flat webbing. There are two of these suspending members connected together so as to form a single long U-shaped loop. This loop is made of such a length that it will form a swing in which the wearer of the harness in effect sits. Near the middle portion of the cross piece, 3, of the swing are fastened two straps, 4 and 5, which are carried forwardly between the legs of the wearer and are then detachably connected to the lower ends of the upright pieces, 6 and 7, of the swing, namely to the lower ends of the arms of the U. The connections between the free ends of the straps 4 and 5 and the elements 6 and 7 are adjustable so as to permit the cross piece or seat element 3 and the two straps to form two adjustable leg-encircling bands. In the arrangement shown, each of the members 4 and 5 has at its free end a snap hook, 8, which is adapted to be hooked into any one of a plurality of links in a short chain, 9, attached at one end to the corresponding vertical member of the swing. In placing the pack on his back the wearer inserts his arms underneath the suspending straps where they leave the pack, so that the vertical portions of the swing extend downwardly across his chest. To the pack, on the side next to the wearer, is secured a waist strap, 10. Two other straps, 11 and 12, crossing each other near the top of the pack are secured to the side of the latter which comes next to the wearer, the upper end of the strap 11 going forwardly over the left shoulder underneath the corresponding suspending strap and being fastened at its free end to the vertical element, 6, of the swing; while the lower end of the strap 11 passes forwardly underneath the arm of the wearer and is adjustably connected by means of a buckle, 13, or otherwise to one end of the waist strap, 10; the strap 11 being long enough so that on a large person it may be made to lie in a loop extending about halfway across the front of the wearer. This loop portion of the strap 11 is threaded through an eye in a snap hook, 14, or the like which is adapted to be

engaged with a ring, 15, secured to the element 6 at a considerable distance above the waist line. The strap 12 is exactly like the strap 11 except that the upper end passes over the right shoulder of the wearer and is fastened to the element 7, while the lower end is carried forwardly underneath the left arm and, after being looped through an eye in a snap hook, 16, is fastened to the other end of the waist strap, 10, by means of a buckle, 17, or other adjusting device; the hook 16 being adapted to be engaged with a ring, 18, secured to the element 7 of the swing directly opposite the ring 15.

It will be seen that the harness in unfastened, the parachutist gets into the same by simply slipping his arms, one after the other, under the main suspending straps while the pack is at his back, thus automatically bringing the seat strap into the proper position; this being a much simpler operation than that of putting on a loose coat and being more analogous to the simple operation of getting into a pair of trouser-supporting suspenders that have already been attached to the trousers. After this first step has been performed, the leg straps are fastened and then the snap hooks 14 and 16 are hooked into the rings 15 and 18. If the harness happens to be too large, the adjustment is made at the buckles 13 and 17, namely between the free lower ends of the straps 11 and 12 and the front ends of the waist strap 10. As the harness is made smaller, the effective upright portions of the swing are shortened because those portions of the straps 11 and 12 that come forwardly over the shoulders and are fastened to the swing elements 6 and 7 become the effective upper ends of the swing elements until the pack is opened, permitting slack to be formed in the suspending members at and behind the shoulders.

The pack is adapted to be opened by means of a pull on a release cord, indicated at 20 in Fig. 4, and provided at the end thereof with a ring, 21, adapted to be grasped by the wearer of the pack. The release cord is carried forwardly over the shoulder, preferably underneath one of the suspending straps. In the arrangement shown, the release cord is carried forwardly over the left shoulder between one of the suspending straps and the underlying strap, 12. Fastened upon the strap 12 just above the ring 18, is a clip comprising a spring metal plate, 22, having its ends bent upwardly and inwardly as indicated at 23 and 24; the parts being so proportioned that the ring on the release cord may be slipped laterally underneath the members 23 and 24 which must be sprung outwardly slightly in order to permit the entry of the ring, as indicated in Figs. 4 and 5, so that the ring will be held at two points by spring pressure

against release from the clip. The clip is protected by the overlying part, 7, of the suspending strap so that it will not accidentally be caught upon any extraneous object and the ring 21 will itself be partly covered by the suspending strap, although a portion will project in position to be easily and conveniently grasped when the release cord is to be pulled.

While I have illustrated and described with particularity only a single preferred form of my invention, I do not desire to be limited to the exact structural details thus illustrated and described; but intend to cover all forms and arrangements which come within the terms employed in the definitions of my invention constituting the appended claims.

I claim:

1. A harness comprising a U-shaped swing in which the wearer is adapted to be seated, the upright elements of the swing being adapted to lie in front of the wearer, two crossed diagonal straps adapted to extend across the back of the wearer, each of said diagonal straps being connected at its upper end to the upper end of the upright swing element on one side and at its lower end to the end of the waist strap at the opposite side, the lower end of each diagonal strap having a running connection with a fastening device, and means for detachably securing said fastening device between the upper and lower end of the upright swing element to which the corresponding diagonal strap is connected.

2. A harness comprising a U-shaped swing in which the wearer is adapted to be seated, the upright elements of the swing being adapted to lie in front of the wearer, two crossed diagonal straps adapted to extend across the back of the wearer, each of said diagonal straps being connected at its upper end to the upper end of the upright swing element on one side and adjustably connected at its lower end to the end of the waist strap at the opposite side, the lower end of each diagonal strap having a running connection with a fastening device, and means for detachably securing said fastening device between the upper and lower end of the upright swing element to which the corresponding diagonal strap is connected.

3. A harness comprising a U-shaped swing in which the wearer is adapted to be seated, the upright elements of the swing being adapted to lie in front of the wearer, two crossed diagonal straps adapted to extend across the back of the wearer, each of said diagonal straps being connected at its upper end to the upper end of the upright swing element on one side and at its lower end to the end of the waist strap at the opposite side, the lower end of each diagonal strap having a running connection with a fasten-

ing device, means for detachably securing said fastening device between the upper and lower end of the upright swing element to which the corresponding diagonal strap is
 5 connected, straps secured to the middle portion of the seat element of said swing and each adapted to encircle one of the legs of the wearer, and a detachable connection between the free ends of each of the last men-
 10 tioned straps and the lower end of the corresponding upright element of the swing.

4. A harness comprising a U-shaped swing in which the wearer is adapted to be seated, the upright elements of the swing being
 15 adapted to lie in front of the wearer, two crossed diagonal straps adapted to extend across the back of the wearer, each of said diagonal straps being connected at its upper end to the upper end of the upright swing
 20 element on one side and at its lower end to the end of the waist strap at the opposite side, the lower end of each diagonal strap having a running connection with a fasten-
 25 ing device, means for detachably securing said fastening device between the upper and lower end of the upright swing element to which the corresponding diagonal strap is
 30 connected, and parachute suspension straps connected to the upright elements of the swing.

5. In combination, a parachute pack adapted to be worn on the back, a waist strap secured to the pack near the lower end there-
 35 of, two back straps crossing each other diagonally and secured to the pack above the waist strap, said back straps having extend-
 40 ed upper ends connected together to form a swing, the lower ends of said back straps being adjustably connected to the free ends of
 45 the waist strap, a device having a running connection with the lower end of each of said back straps adapted to be detachably
 fastened to that element of the swing constituting the upper end of the corresponding

back strap.
 6. In combination, a parachute pack adapted to be worn on the back, a waist strap secured to the pack near the lower end thereof, two back straps crossing each other

diagonally and secured to the pack above the
 50 waist strap, said back straps having extended upper ends connected together to form a swing, the lower ends of said back straps being adjustably connected to the free
 55 ends of the waist strap, a device having a running connection with the lower end of each of said back straps adapted to be detachably fastened to that element of the
 60 swing constituting the upper end of the corresponding back strap, and leg straps each fastened at one end to the middle of the seat
 65 portion of the swing and each adapted to be detachably connected with one of the upright elements of the swing near the lower end of the latter.

7. In combination, a parachute pack adapted to be worn on the back, a waist strap secured to the pack near the lower end there-
 70 of, two back straps crossing each other diagonally and secured to the pack above the waist strap, said back straps having extend-
 75 ed upper ends connected together to form a swing, the lower ends of said back straps being adjustably connected to the free ends of the waist strap, a device having a running
 80 connection with the lower end of each of said back straps adapted to be detachably fastened to that element of the swing constituting the upper end of the corresponding
 85 back strap, and parachute suspension straps leading out of the pack and overlying and secured to the upper ends of said back straps.

8. In combination, a parachute pack, a harness including two overlying straps adapted to pass forwardly over the shoul-
 85 ders of a wearer from the pack carried on the back of the wearer, a release cord extending from the pack forwardly between said straps, a spring clip on the outer side
 90 of the under strap at approximately the point where that strap crosses the breast of the wearer, and a ring on the free end of said release cord engaged at one side thereof
 in said clip.

In testimony whereof, I sign this speci-
 95 fication.

FLOYD SMITH.