

Nov. 19, 1946.

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2,411,381

RETAINER FOR D-RING OF PARACHUTE HARNESS

Filed Aug. 30, 1944

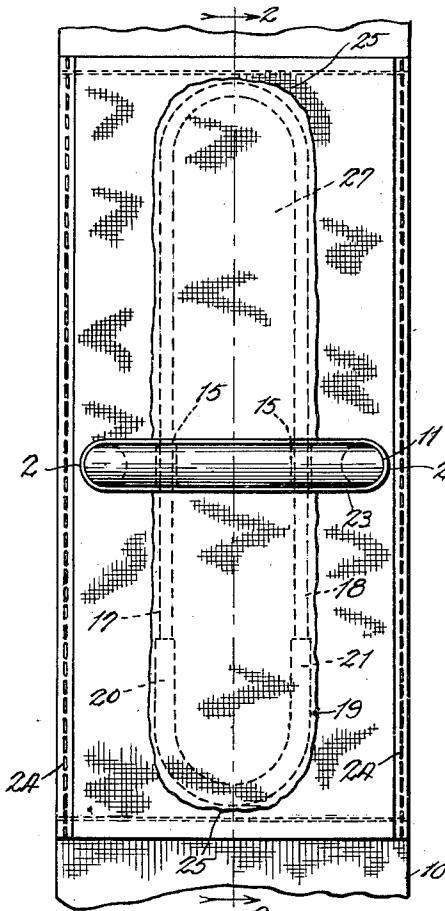


Fig. 1

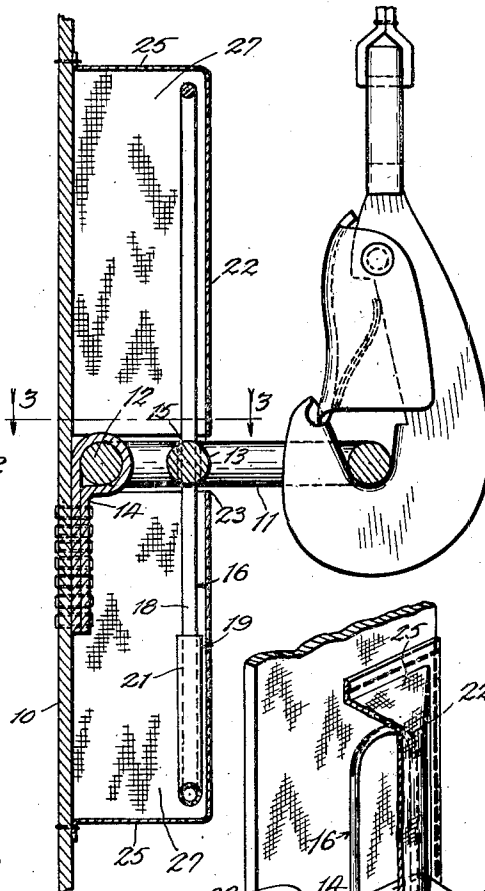


Fig. 2

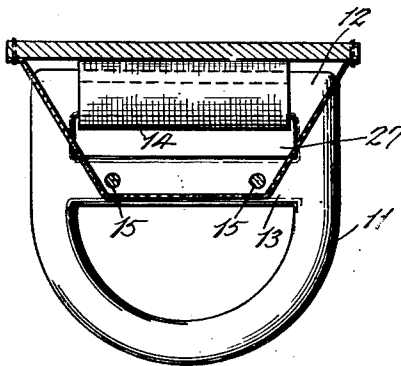


Fig. 3

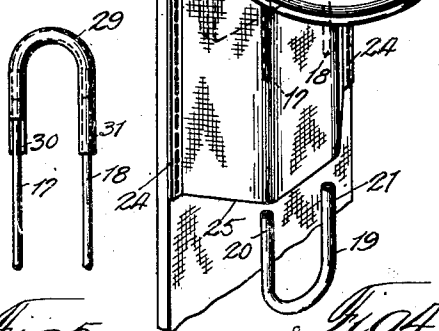


Fig. 5

Fig. 4

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Oct 15.

UNITED STATES PATENT OFFICE

2,411,381

RETAINER FOR D-RINGS OF PARACHUTE HARNESES

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Application August 30, 1944, Serial No. 551,792

4 Claims. (Cl. 244-151)

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The invention relates to hooking rings for webs or straps and more particularly to means for attaching hooking rings to webs or straps in order that there may be convenient access to the hooking rings at all times, and the invention has for one object the provision of improved means of this character.

Although the invention is not limited thereto, it is particularly applicable to and will be described in connection with parachute harnesses and the like, such as are employed by parachutists, aviators and airplane passengers. It will be apparent to those skilled in the art that changes may be made without departing from the true spirit and scope of the invention, to adapt the invention for use on straps, belts, and similar devices wherever it is desirable to provide convenient access to a hooking ring.

Parachute harnesses are provided with hooking rings to which additional equipment is attached, usually by quick release connectors. Such a hooking ring is commonly known as a D-ring. Heretofore such a ring has been attached to the parachute harness by stitching or other well known securing means, allowing the ring to dangle in random positions relative to the harness webbing to which it is attached. This dangling of the usual D-ring makes it often difficult to fasten to and release therefrom a quick release connector. It is readily perceivable that activities involving parachutes require rapid manipulation of the release connectors co-operating with the hooking or D-rings and, accordingly, it is a further object of the invention to provide improved hooking attachment means for maintaining positively the hooking ring or D-ring outwardly extended from the webbing or strap to which the ring is attached.

In carrying out the invention in one form, a D-shaped ring having an integral bridging portion is attached to a strap or web. A rigid or stiff loop-shaped member to maintain the ring extending outwardly from the strap or web passes through holes provided in the bridging portion and extends parallel to the plane of the web or strap, tape means being stitched around said loop-shaped portion to attach it firmly to the web or strap.

For a more complete understanding of the invention, reference should be had to the accompanying drawing in which

Fig. 1 is an elevational view of the web and D-ring embodying the invention in assembled relation;

Fig. 2 is a sectional view taken along the line

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2-2 of Fig. 1 and showing a release snap attached to the D-ring;

Fig. 3 is a sectional view taken along line 3-3 of Fig. 2, the release snap being omitted;

Fig. 4 is a perspective view partially in section and partially in elevation showing the elements in partially assembled relationship; and

Fig. 5 shows a modification of the loop element.

Referring now to the drawing, the invention is shown as embodying a web or strap 10 which may form part of a parachute harness or the like to which a substantially D-shaped ring 11 of any suitable material such as Duralumin is attached by a loop of webbing 14 stitched to the web 10 as shown. The ring 11 is provided with a base portion 12 and an integral bridging portion 13, through which holes 15 are formed, the axis of the holes being substantially at right angles to the plane of the ring.

A tilt-restraining member 16 whose function will be more fully explained hereinafter comprises a loop member having two integrally formed prongs 17 and 18 spaced from each other so as to fit conveniently into the holes 15 and another hollow loop member 19 having two integrally formed hollow prongs 20 and 21 spaced to fit over and telescope upon the ends of the prongs 17 and 18, as shown (Fig. 1), to form a closed loop.

Co-operating with the tilt-restraining member 16 to maintain the D-ring 11 substantially at right angles to the web 10 is a tape 22 consisting of a generally rectangular piece of fabric having cut-out portion 23 to accommodate the inner loop of the D-ring 11, the edges 24 and 25 of the tape being stitched to the web 10, as shown (Fig. 1), to form a pocket 27 surrounding the restraining member 16.

Assembly of the structure is as follows: the webbing 14 is placed around the base portion 12 of the D-ring 11 and is stitched to the web 10. The tape 22 is placed over the D-ring 11 with the ring protruding through the cut-out portion 23, and the side edges 24 of the tape 22 are stitched to the web 10, the ends 25 of the tape being left unstitched. The pocket formed by the tape 22 stitched only at its edges is held outwardly by any suitable means, which may be the hands of the user, and the tilt-restraining member 16 is placed inside of the pocket with the prongs 17 and 18 through the openings 15 in the bridging portion 13. To complete the tilt-restraining member, the hollow loop 19 is telescoped over the prongs 17 and 18, following which the ends 25 of the tape are stitched to the web 10 forming a

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closed pocket 27 enclosing the tilt-restraining loop 16.

In the embodiment of the invention shown in Fig. 5, a hollow loop member 29 corresponding to the loop member 19 of Figs. 1 to 4 is provided with a prong 30, a portion of which is cut away to facilitate the insertion of the prongs 17 and 18 into the hollow prong 30 and the prong 31 of the loop member 29 after the prongs 17 and 18 have been inserted through the openings 15 of the D-ring and inside of the tape 22 stitched by its edges 24 to the webbing 10. The prong 31 of the loop member 29 is inserted over the corresponding end of the prong 18, after which the loop portion 29 is rotated until the cutaway portion of the prong 30 comes into registry with the prong 17 which moves into the cutaway portion, whereupon the loop portion 29 is pushed into a completely closed position to form the tilt-restraining member 19. This will obviate any fumbling of the user in attempting to match the prongs 17 and 18 with the hollow prongs of the second loop portion.

It will be clear by reference to Fig. 2 that the D-ring 11, although having some freedom of movement which is limited by the flexibility of the tape 22, is maintained outwardly spaced from the web 10 so that access to it is at all times convenient.

While I have shown a particular embodiment of my invention, it will be understood, of course, that I do not wish to be limited thereto since many modifications may be made, and I therefore contemplate by the appended claims to cover any such modifications as come within the true spirit and scope of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In combination with a flexible fabric strap, a D-ring fastened to said strap, means for holding said D-ring outwardly from said strap, said means comprising a member integral with said D-ring and having openings therethrough sub-

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stantially at right angles to the plane of said D-ring, a non-flexible loop-shaped tilt-restraining member extending through said openings and a second non-flexible loop-shaped member fitting over the ends of said first loop-shaped member to form a closed loop, and means for holding said tilt-restraining member to said strap.

2. In combination with a flexible fabric strap, a D-ring fastened to said strap, tilt-restraining means for holding said D-ring extending outwardly from said strap, said tilt-restraining means comprising a member integral with said D-ring and having a pair of openings therethrough and a two pronged non-flexible restraining member extending through said openings substantially parallel to said strap, and means for holding said restraining member to said strap.

3. In combination with a flexible fabric strap, a D-ring fastened to said strap, means for holding said D-ring outwardly from said strap, said means comprising a member integral with said D-ring and having openings therethrough substantially at right angles to the plane of said D-ring, a non-flexible loop-shaped tilt-restraining member extending through said openings and a second non-flexible loop-shaped member fitting over the ends of said first loop-shaped member to form a closed loop, and a fabric covering surrounding both said non-flexible loops for holding said tilt-restraining member to said strap.

4. In combination with a flexible strap, a D-ring fastened to said strap, said D-ring including a pair of openings therethrough substantially at right angles to the plane of said ring, a non-flexible tilt-restraining member having a pair of prongs extending through said openings for holding said ring outwardly of said strap, and means for holding said restraining member to said strap.

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