Dec. 12, 1933. S. H. KNIGHT 1,939,062

HARNESS FOR AVIATORS

Filed Jan. 27, 1931 2 Sheets-Sheet 1

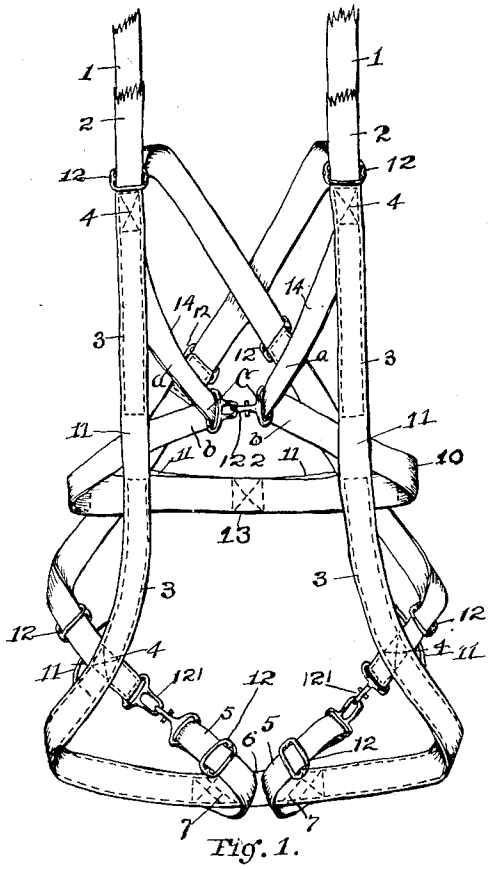


Fig. 1.

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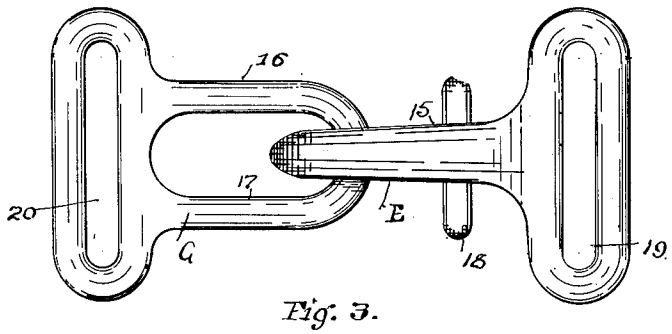


Fig. 3.

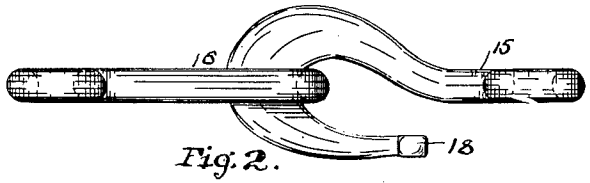


Fig. 2.

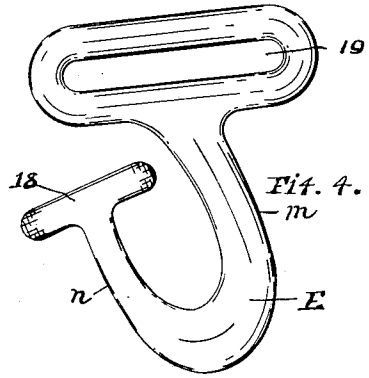


Fig. 4.

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HARNESS FOR AVIATORS

Samuel H. Knight, Lancaster, Pa.

Application January 27, 1931. Serial No. 511,514

5 Claims. (Cl. 244—21)

My harness has the leg straps formed out of an integral part of the load straps and is provided with a series of catches for holding together the various harness straps that form the main portion of the harness. It contains the feature of having the sling a portion of the load strap.

This construction of the load strap and the use of the particular fasteners working conjointly with the other parts of the harness, gives a very unusually stable harness which is adjustable very quickly and remains firmly fixed upon the wearer, under every circumstance.

Fig. 1 is a front elevation of the harness. Fig. 2 is a side elevation of the preferred form of hook and eye fastener. Fig. 3 is a plan view of the preferred form of hook and eye and Fig. 4 is a plan view showing the blank cut out of the sheet material to form the hook before it is bent into final form.

The general construction of the harness is of the strap type, with the load straps passing down the front part of the body and turned over around the hips to pass beneath the buttocks of the aviator. The body part of the harness is a strapping that is clasped in front of the chest, binding to each other two portions of the strapping that have a vertical direction, approximately parallel to each other when not clasped together, and, when clasped together, being in the shape of two widely diverging V's with their points pointed towards each other.

In other respects, the general features of the harness are not restricted to any particular one of the many harness constructions that have strapping harness secured at its ends to the load strapping.

Prefacing this statement, I will describe the best form of which I am at present aware of my harness. The load straps consist, as is usual, of two overlaid straps 1 and 2, extending from above the shoulders and down the front of the aviator, and turning back of his hips. These straps 1 and 2 are secured together at places where advantageous. The stitching connects them at the hips. This stitching preferably consists of longitudinal stitchings 3, 3, and reinforced stitching 4, 4, and a stitching which assists in positioning the free ends 5, 5, of the load straps 1, 1, so that they extend at an angle with the sling part 6, of the load strap 2. The load strap 1, has the ends 5, 5, of a length to extend part or all the way around the thigh, passing around the inside of the thigh. The straps 2, form a single piece including the sling part 6. The particular form of stitching causing the ends 5, 5, to lie at an angle with the sling portion 6 is illustrated; the two straps 1 and 2 are turned at an angle, and the rows of stitching 7, 7, are arranged across them, while in this position giving them the turn relative to each other desired.

The harness is formed of strapping 10, joined at its ends to the ends of the leg straps 5, and passes through various slides 11, which holds the parts in the desired positions. It may also be provided with adapters 12, securing it to the load straps at the upper part of the body. Usually it has a belt portion 13. All these parts are illustrated, and as illustrated constitute a preferred form of my harness. My harness has the means for closing around the aviator the straps 14 that extend nearly vertically when the harness has been slipped on but not clasped. These straps 14 when clasped form V's with widely diverged legs *a*, *b*, and have the points C extending toward each other. The nearer to each other these points are brought the securer the fit of the harness.

The form of clasp I use brings these V's very near each other although the clasp is not reduced in size. This clasp is particularly shown in Fig. 3. It is used at the connections between the leg straps and the harness strapping where it is marked 121, and between the straps 14 where it is marked 122. On the straps 14, it slides up and down in adjusting itself.

The clasp has a hook portion 15 and an eye portion 16. These portions are relatively shaped so that the hook cannot be withdrawn from the hook holding eye 17, unless the two are turned out of the line connecting them when a separating strain is given to them. In the particular form of clasp illustrated, the eye 17, is elongated in the direction of the hook and the hook has a retaining piece 18, that cannot pass through the eye. This retaining piece 18, preferably is a cross. This form of my clasp can be released only by turning the eye and hook until the two parts are tilted enough to let the leg *e* of the hook ride over one of the side pieces *g* of the eye and the retainer 18 is nearly enough parallel to the walls *g* to let it pass between them. The hook holding eye is a slot 17 and is provided with a stopping means limiting the movement of the hook in the slot 17 and positively and permanently, preventing the hook from bringing the cross piece 18 into position to pass into the attachment eye formed by the slot 20, or any similar crosswise opening in the eye piece. This stopping means, in practice, is obtained by making the slot 17 a closed end slot, as shown in Fig. 3. Preferably the at-

tachment eyes 19 and 20 of the members of the clasp are elongated as shown, for the purpose, among others, of giving a long narrow opening that will hold the clasp against dropping and facilitating its slip along the straps. The slot 20 extends crosswise of the eye piece, approximately at right angles to the slot 17 and the eye piece is constructed so that the hook cannot pass from the slot 17 to the slot 20.

The manufacture of this hook part may be simple. It may be stamped out or forged out in the flat shape shown in Fig. 4, and then twisted at the parts *m* and *n* respectively.

The effect of use of this form of clasp is that the strain, which will be in the direction of the length of the hook and of the eye, will occasion a pull upon these parts that will insure their continuous engagement with each other. The total length of the engaged hook and eye is much reduced, and the ends of the straps brought nearer to each other.

The leg straps forming a part of the load straps cannot give way, and this in conjunction with the short non-disengageable clasps keeps the harness very snugly fitting without constraining the aviator's movements, and permits the adapters 25 to be drawn in more than heretofore was possible.

Changes may be made without departing from my invention, as the particular embodiment described in detail is only the best embodiment of which I am now aware.

I claim:—

1. A harness for aviators having a pair of load straps positioned at the sides of the front of the aviator's body, each of said straps consisting of two superimposed pieces of strapping and a body strapping provided with adapters and connected to said load straps, wherein one of the pieces of strapping forming the load straps passes beneath the body of the aviator forming a sling, and each of the other said pieces of strapping terminates in leg straps, the ends of which straps are connected to the body strapping, in combination with short, non-disengageable clasps uniting the body strapping across the chest of the aviator.

2. A harness for aviators having a pair of load straps on either side of the front of the aviator's body; each of said straps consisting of two superimposed pieces of strapping and a body strapping connected to said load straps and provided with adapters; one of the two pieces of strapping of each of said load straps, extending continuously down one side of the aviator's body, and under his body, and up along the other side of his body; the others of the pieces of strapping of said load straps extending downward along the aviator and having free ends passing beneath the aviator and around his thighs, and releasably connected to the front of the body strapping.

3. The device as defined in claim 2, wherein the body strapping is continuous, and the leg straps and the body strapping are provided with adjusters whereby the harness may be made adjustable to different aviators.

4. The device as defined in claim 2, wherein the pieces of strapping terminating in the leg straps are sewed to the continuous strapping where the leg straps and the continuous strapping separate, by seams running at an angle with and holding the leg straps projecting forward at an angle from the said continuous strapping.

5. A harness for aviators comprising a pair of load straps, composed each of two pieces of superimposed strapping; one of which pieces of strapping forms a continuous piece of strapping following down one load strap, extending beneath the aviator and upwards along the other load strap, the other pieces of strapping of said load straps being sewed to the said continuous piece of strapping down to the part of the said continuous piece that passes beneath the body of the aviator, and having free ends extending from a point beneath the aviator's body and extending around the aviator's thighs, and a body strapping to which the free ends of the aforesaid strapping are releasably and adjustably secured.

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