Dec. 14, 1948. M. HATTAN 2,455,929

ROTATABLE-JOINT CLASP HAVING SAFETY LOCKING MEANS

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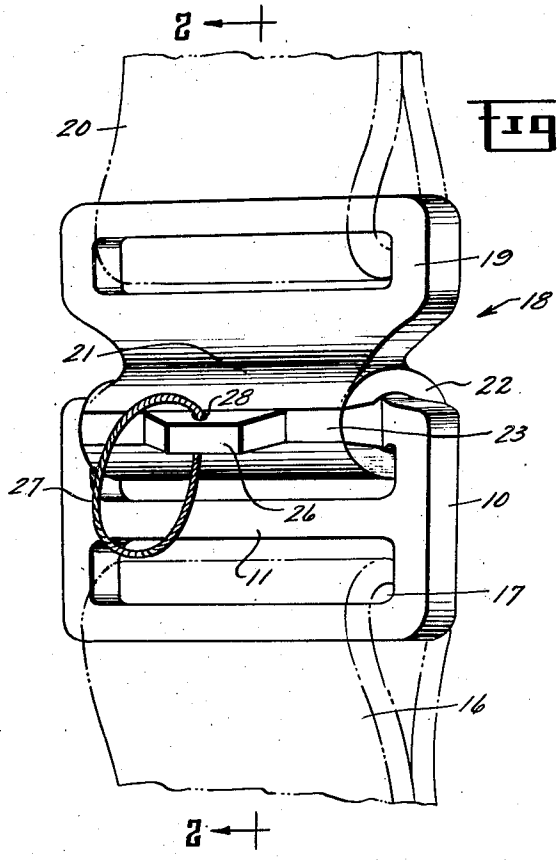


Fig 1

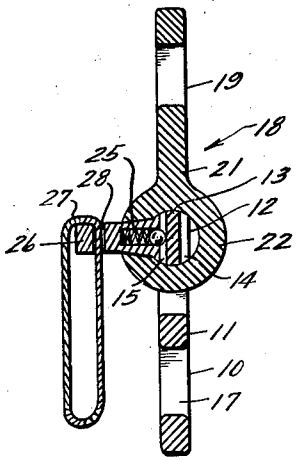


Fig 2

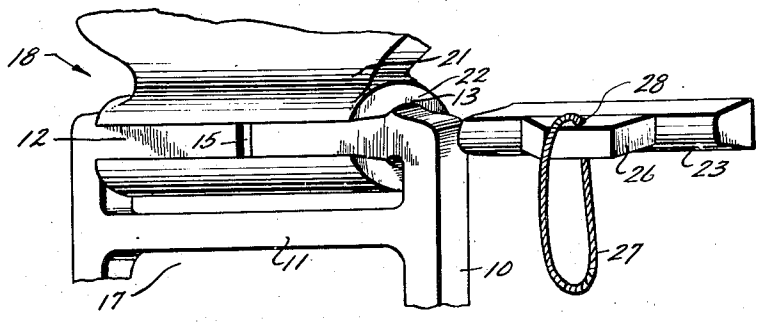


Fig 3

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Fig 4

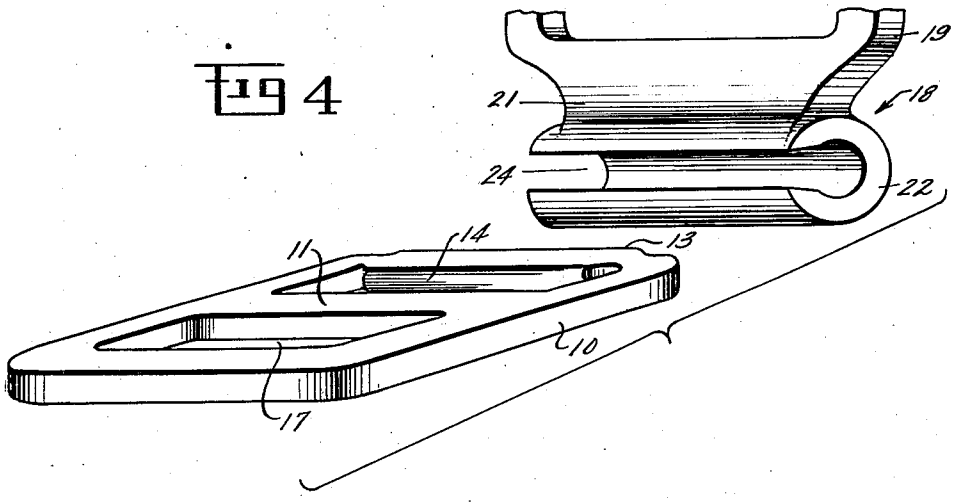


Fig 5

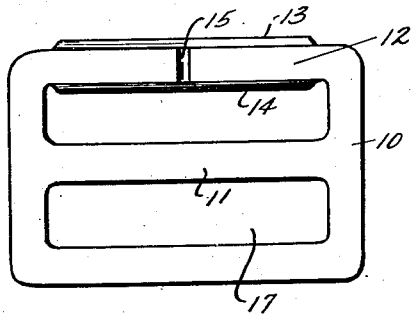
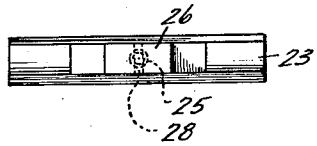


Fig 6



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2,455,929

ROTATABLE-JOINT CLASP HAVING SAFETY LOCKING MEANS

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Application August 27, 1947, Serial No. 770,843

2 Claims. (Cl. 24—225)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

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The invention described herein may be manufactured and used by or for the Government for governmental purposes without payment to me of any royalty thereon.

This invention relates to a safety clasp for parachute harness, safety belts for airplanes and other flexible or jointed strip apparatus of similar character.

It has been noted that the present conventional clasps for such apparatus are imperfect because they are too easily opened by accident. A need exists for a clasp that is free from such defect but which will respond to deliberate operation without fail.

One object of the present invention is to provide a clasp for flexible members which cannot be opened accidentally, but which will not jam or catch when opened deliberately.

Another object is to provide a clasp that can be made light, but strong and requires no large holes through the strip material.

Another object is to provide a clasp that can easily be made in quantity by the die casting process.

In the accompanying drawings:

Fig. 1 is an oblique view of the assembled clasp, the flexible strips to be joined being shown in dashed line.

Fig. 2 is a longitudinal section of the clasp taken on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary view corresponding to Fig. 1 but showing the clasp partly disassembled.

Fig. 4 is an oblique view of the frame and link members ready for assembly.

Fig. 5 is a plan view of the frame.

Fig. 6 is a top view of the slide.

10 is a frame of generally rectangular shape and section stiffened by a dividing inner cross member or rib 11. One outer cross member or rib 12 has a rounded outer surface 13 and a rounded inner surface 14. The top and bottom surfaces remain flat however, except for a small semicircular groove 15 that is generally perpendicular to the rounded surfaces. As can be seen in Fig. 1 a loop 16 of the strip material to be joined extends through a loop-retaining space 17.

Referring now to Figs. 1, 3 and 4, 18 is a link comprising a loop-retaining frame 19 in which there is a loop 20 of strip material. Connected to the loop-retaining frame 19 by a neck 21 of lesser width, there is a nearly circular sleeve 22. The sleeve 22 is accurately finished on the inner surface to snugly enclose the outer rib 12 of the frame 10 and to rotate easily on the rounded

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surfaces 13 and 14 thereof. It is evident that such a connection is a very strong construction.

In order to prevent a conceivable accidental loosening of the clasp which might otherwise occur if the sleeve 22 were to rotate inward 90 degrees, a slide 23 is provided to act as a keeper. As shown in Fig. 3, the slide is of generally trapezoidal section and is as long as the sleeve 22 and accurately fits that part of the open space 24 in the sleeve where that space is not occupied by the outer rib 12 of the frame. That part of space 24 not occupied by the rib 12 also has a trapezoidal cross section, the narrower side presented outwardly. In other words, the outer rib 12 and the slide 23 cooperate to fill entirely the empty space 24 in the sleeve up to its outer contour, the wide base of the slide being in contact with the rib 12 and in doing so they prevent the sleeve from rotating on the rib 12, or the slide 23 being pulled directly out of the space 24 by an outwardly directed lift. Loop-retaining frame 19 is consequently held in substantially the same plane as frame 10 as is shown in Fig. 2.

Dropping out of the slide 23 is prevented by a spring loaded ball or other type of latch 25 which is inletted into the slide 23 at its middle point, so that when the ends of slide 23 are even with the ends of sleeve 22, the ball 25 and the detent 15 will cooperate to latch the slide 23 in place. A lug 26 is provided on the slide 23 to provide both a housing for the spring loaded ball 25 and a handle through which a loop of cord 27 is brought by means of a hole 28. The loop 27 is a convenient hand grasp or pull.

In operation, to put the clasp together, the link 18 is brought in contact with frame 10 at right angles thereto. Outer rib 12 of frame 10 is now introduced into the sleeve 22. When the rib 12 has fully entered the sleeve 22 the link 18 is rotated through 90 degrees to the position shown in Fig. 1. The slide 23 is now introduced from the end into the space 24 and slid along rib 12 by means of loop 27 until the ball 25 enters the detent 15. Reversal of these operations will again open the clasp.

I claim as my invention:

1. In a clasp for joining strips of flexible or jointed material, a frame of generally rectangular shape, a rounded outer and inner free edge on one outer cross member of said frame, a connecting link cooperating with the said edges, said link comprising a frame, a sleeve, a neck connecting said frame and sleeve, said sleeve having an open side of trapezoidal section wide enough at its outer edge to receive said outer cross member of

the first mentioned frame when the latter is introduced at approximately a 90° angle and a bore adapted to rotatably receive said outer cross member and to engage its rounded edges, and a slide of generally trapezoidal section adapted to be inserted therein, its base in contact with said outer cross member to fill substantially the space between a flat side of said outer member of the frame within said sleeve and the line of outer surface contour of said sleeve.

2. A clasp for joining strips of flexible or jointed strip material, a frame, a rounded outer and inner free edge on an outer cross member of said frame, a link cooperating with said frame, said link comprising a frame, a sleeve, a neck connecting said link frame and sleeve, said link frame having an open side wide enough at its outer edge to receive the side of said outer cross member of the first mentioned frame and a bore adapted to rotatably receive said outer frame cross member by its rounded edges and a slide adapted to be

inserted and retained in and to fill substantially the space between a flat side of said outer cross member of the frame within said sleeve and the line of outer surface contour of said sleeve.

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