ADJUSTABLE QUICK RELEASE STRAP SPLICE

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

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This invention relates to an adjustable quick release strap splice and especially to a quick release take-up for cargo tie downs.

Heretofore in making straps it has been necessary to secure the buckles by means of stitching.

An object of this invention is to reduce or even eliminate stitching of the strap members.

Another object is to provide a quick release device whereby adjustment can be made quickly and with a minimum of effort. This is especially desirable where the straps are used as cargo tie downs.

Other objects will become apparent from the following description in which:

Fig. 1 is a plan view of the adjustable strap splice;

Fig. 2 is a section on line 2—2 of Fig. 1 in strap releasing position;

Fig. 3 is a modification of Fig. 2 with the split anchor frame eliminated;

Fig. 4 is a plan view of another modification showing the strap frame used for securing a hook; and

Fig. 5 is a section on line 5—5 of Fig. 4.

In the drawing Fig. 1 shows the preferred form of the quick release splice adjustment. Aper- tured rectangular frames 3, 4, and 5 are used. Frame 3 is split into frame openings 6 and 8 by dividing bar 7; frame 4 is provided with a raised bar 6 welded at its terminal points to the frame; and frame 5 is a plain frame. These frames are preferably of substantially rectangular shape for more convenient assembly with straps 1 and 2. Frames 4 and 5 are superposed and offset with respect to each other.

Straps 1 and 2 are threaded and looped through frames 3, 4, and 5 as shown. In making the assembly the end of strap 1 is brought up through the opening 6 of frame 3, over dividing bar 7 and down through opening 8; then it is threaded up through the partially aligned openings of frame 5 and frame 4. It is looped back and brought down through opening 8, over bar 7, and down through opening 9; it is then again doubled back and brought down through opening 8 and through the loop formed by raised bar 6.

Strap 2 is brought up through the partially aligned openings of frames 8 and 6; then is doubled back over frame 4 and down again through opening in frame 6 terminating in loose end 10.

In normal tensioned position all parts will be securely clamped and held. By tilting the assembly of frames 4 and 5 as shown in Fig. 2, the grip on strap 2 is loosened so that adjustment of strap 2 can be made for loosening by pulling strap 2, or for tightening by pulling the strap end 10.

Tilting of the assembly of frames 4 and 5 can be accomplished in either of two ways; by the use of a lever 13 which is inserted under raised bar 6 as shown in dotted lines Fig. 2, or by merely lifting up on the end of strap 1 which has been threaded through the loop formed by raised bar 6.

Frame 3 is used to secure or anchor the end of strap 1 but may be eliminated by stitching down the end of strap 1 as shown in Fig. 3. It is preferred, however, that stitching be eliminated entirely and this is possible by the assembly of Fig. 2.

It will be apparent that a convenient adjustable splice and quick release take-up has been designed which is especially useful for cargo tie downs and particularly for use with aircraft cargo. It has been found convenient to use straps of webbing, preferably salvaged as parachute webbing. However, any type of strap can be used without departing from the scope of the invention.

End hooks or clamps can be similarly secured to the strap without any stitching whatsoever by using split frame 3, for anchoring as shown in Figs. 4 and 5. The snap hook 11 in Figs. 4 and 5 is secured to strap 1 by threading the end of strap 1 up through opening 8, over bar 7 and down through opening 9, then up through hook loop 12, looped back and threaded up through opening 8, over bar 7 and down through opening 9. The end of strap 1 is then locked by bringing it over frame 3 and down through opening 9 as shown. Tensioning will securely lock all parts. Any securing eye or fitting could be attached in like manner.

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

Having described our invention we claim:

1. A quick adjustable and release strap splice comprising a rectangular apertured first frame having spaced side bars and end cross bars, a rectangular double apertured second frame having spaced side bars and end cross bars and a raised mid bar parallel to said end bars and connecting intermediate points of said side bars, said second frame being arranged in superposed and somewhat offset relation to said first frame, and one end of a strap extending through from the bottom of the aperture in the first frame up through the aperture between the raised bar
and adjacent end cross bar of said second frame, then over said adjacent end cross bar of said second frame, down through the first frame aperture and under the adjacent first frame end bar to be held in compression thereby between said adjacent first frame end bar and the strap, an end of another strap extending up through the first frame aperture and through the other aperture of the second frame and secured against the strap by said double rectangular apertured third anchor frame, the latter strap end extending through the apertures and over the mid bar of said third frame before passing through said first and second frames, then back again through the same apertures of said third frame, then over the end bar of said third frame furthermore from said first and second frames, and over the third frame mid bar and down through the adjacent aperture and under the end bar, and then under the raised mid bar of said second frame to provide a stitchless buckle releasable by lifting the latter strap end under the raised mid bar of said second frame.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>726,404</td>
<td>Carpenter</td>
<td>Apr. 28, 1903</td>
</tr>
<tr>
<td>1,043,425</td>
<td>Hirsh</td>
<td>Nov. 5, 1912</td>
</tr>
</tbody>
</table>