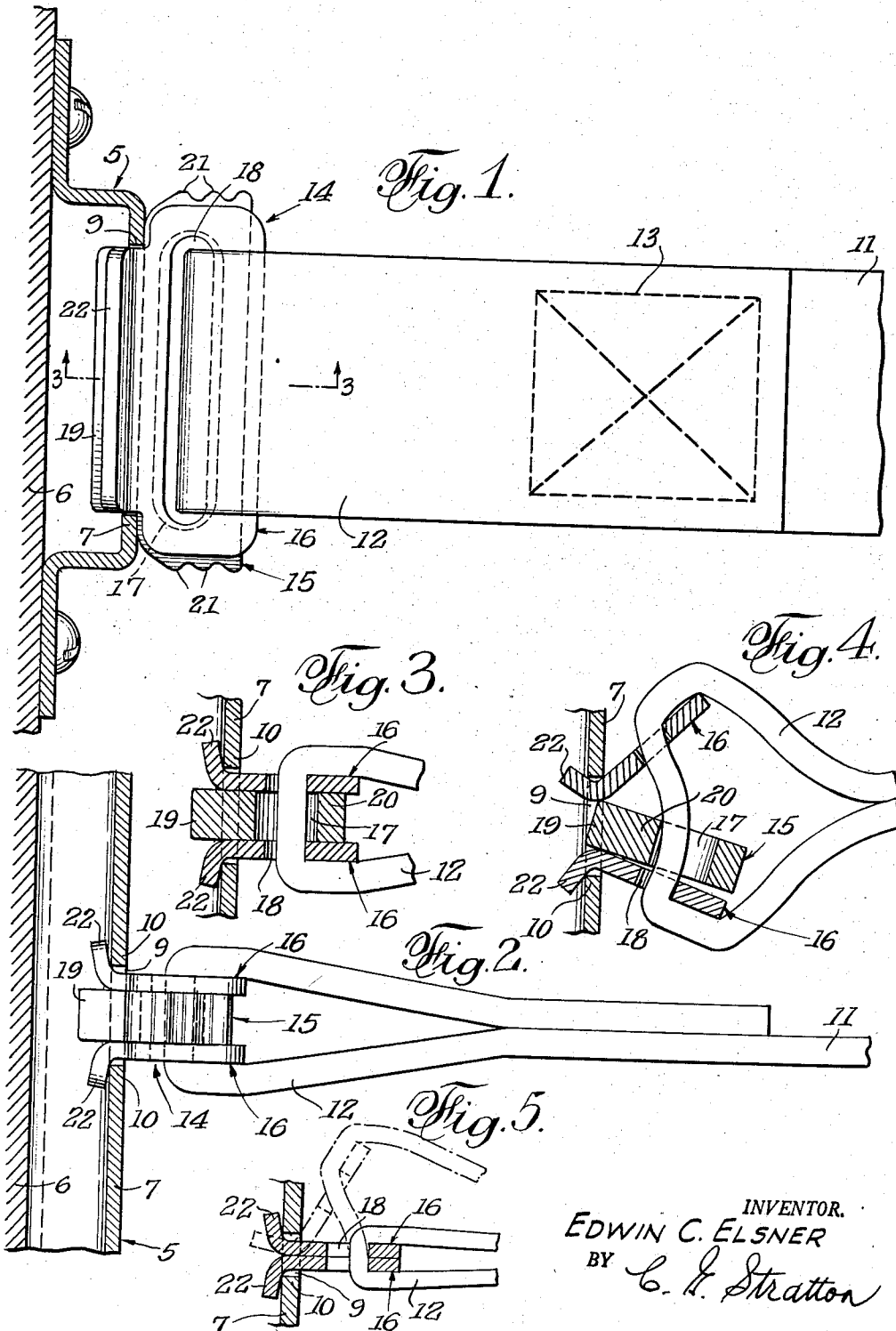


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SEPARABLE CONNECTOR

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This invention relates to a connector for the end of a strap, web or rope, or the like.

The invention is particularly characterized by simplicity and low cost of manufacture, and it is an object of the invention to provide a separable connector that comprises three simple elements that are connected only by a strap, web or rope and which interact to form a positive connector when said strap, web or rope is under tension, and yet may be readily manipulated for separation from an anchor member to which connected.

Another object of the invention is to provide a connector strung on the loop of a strap, web or rope and comprised of three interdependent, but separate and simple, elements in side-by-side relation, which, when the strap, web or rope is under tension, has firm and positive connection with an anchor member and, when the strap, web or rope is slackened off, is adapted for easy manipulation to effect separation from said anchor member.

The invention also has for its objects to provide such means that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description. However, the drawings merely show and the following description merely describes, preferred embodiments of the present invention, which are given by way of illustration or example only.

In the drawings, like reference characters designate similar parts in the several views.

Fig. 1 is a side elevational view of a separable connector according to the present invention, the same being connected to an anchor member which is shown in cross-section.

Fig. 2 is an edge view thereof with the anchor member in longitudinal section.

Fig. 3 is a cross-sectional view as taken on the line 3-3 of Fig. 1.

Fig. 4 is a similar view showing the connector in the process of being separated from the anchor member.

Fig. 5 is a view similar to Fig. 3 of a modification.

The drawing shows an anchor member 5 fastened upon a wall or floor 6 or other base or support. In the present instance, the member 5 is formed to have a wall 7 spaced from the wall 6 and adapted to separably connect to the present connector 14. To this end, the wall 7 is provided with an elongated slot or opening 9, the width thereof being defined between slot-defining lips 10. It will be understood that wall 7 is preferably of metal or other material capable of withstanding considerable pull or stress in a direction away from the base wall 6.

The drawing also illustrates the end of a strap 11, said end being shown in the form of a closed loop 12 created by stitching, at 13, a portion of the strap that is doubled back on itself. In any case, the strap 11 is provided

with a closed loop. The strap is preferably made of pliable material of which woven webbing is exemplary. Webbing made of some of the stronger but softer and more pliable synthetic fibres, such as nylon, is preferred to enable deforming the loop 12 to various shapes. It will be understood that the strap 11 may comprise a cord or rope and that the term strap, as hereinafter used, is intended to include webbing, cord, rope, and similar flexible elongated members.

The loop 12 carries the present connector 14 which, by engagement with the member 5, connects the strap 11 to the wall 6.

The connector 14, shown in Figs. 1-4, comprises a middle element 15 and two similar flanking elements 16, the same being arranged in side-by-side relationship and having an overall thickness somewhat less than the width of the slot 9. In practice, the middle element 15 is substantially thicker than the elements 16 and it will be evident that element 15 serves as a spacer that so separates elements 16 as to bring them into close adjacency to the lips 10 of the slot 9.

Element 15 is provided with a slot 17 and elements 16 each with a slot 18 through which the loop 12 passes, thereby retaining said elements in the mentioned side-by-side relationship. In other words, said loop 12 constitutes a common connecting means for the three elements of the connector 14. In practice, the slot 17 is wider than are the slots 18, the same being particularly shown in Figs. 3 and 4.

Element 15 is provided with an extension 19 of a length to freely enter between the ends of slot 9, said element 15 having a body 20 in which slot 17 is formed and which slot 17 is wider than the length of extension 19. The opposite ends of said body are formed to have finger-gripping portions 21 that minimize finger slippage when engaged by the fingers of the hand and pulled in a direction to draw the extension out of said slot 9.

Each element 16 is provided with a lateral flange 22, the flanges of both said elements extending in opposite directions. Said flanges are formed as bent portions of the elements 16 and the dimension between the longitudinal outer edges thereof, with element 15 between the elements 16, being substantially greater than the width of anchor member slot 9. It will be clear, therefore, with strap 11 under tension, as in Fig. 2, that elements 15 and 16 are held in the mentioned side-by-side arrangement, and the flanges 22 are in hooking engagement with the slot lips 10. Thus, the end of strap 11 is firmly connected to member 5 and, therefore, to wall 6.

Should the tension on the strap ease off, the connection will be maintained. Only upon such slacking of the strap as will enable the loop 12 to be spread in the manner suggested in Fig. 4, can the connector be separated from the anchor member 5. By gripping the ends 21 of the element 15 and pulling in a direction away from the member 5, said element can be so withdrawn from the slot 9 as to enable the flange 22 of one of the elements 16 to be withdrawn from said slot. A winging movement of such element 16 is involved and the same may be accomplished only if the loop 12 is so slack as to be capable of being spread as in Fig. 4. With one element 16 so withdrawn, the other two elements of the connector will readily fall from the slot 9. Reestablishing the connection is accomplished in the reverse manner, Fig. 4 serving to illustrate the mode thereof, as well as the mode of separation.

It will be realized that the connection will function in the above manner regardless of the degree of length of the elements 15 and 16 and whether the strap 11 is a rope or other such member.

As shown in Fig. 5, an efficient connector may comprise only the elements 16. Since the loop 12 is deform-

able, as indicated by the dot-dash lines, to enable rocking of said elements to the spread dot-dash position of Fig. 5, the flanges 22 of said elements may be withdrawn from the slot or opening 9 when there is slack in the strap, as above mentioned.

While the foregoing has illustrated and described what are now contemplated to be the best modes of carrying out my invention, the constructions are, of course, subject to modification without departing from the spirit and scope of the invention. It is, therefore, not desired to restrict the invention to the particular forms of construction illustrated and described, but to cover all modifications that may fall within the scope of the appended claims.

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

1. A connector adapted to fit into an opening of an anchor member and carried by the end of a strap, the latter being provided with a deformable end loop, said connector comprising three separate elements strung on said loop and having a total thickness less than the width of said opening, the middle element constituting a spacer for the other two elements, said two elements each being provided with a flange part and said parts being oppositely and outwardly directed to define a total dimension that is greater than the width of the opening, whereby, with the three elements of the connector inserted into the opening, the mentioned flanges are directed to engage against opening defining lips of the anchor member upon tension being placed on the strap in a direction away from the anchor member.

2. A connector according to claim 1 in which the spacer element is substantially thicker than the flange-provided elements and is formed with an extension for insertion in said opening and a slot through which the strap loop is passed, said slot being substantially wider than the length of said extension and the spacer element being movable relative to the other elements in a direction to withdraw the same from the opening in the anchor member during deformation of the strap loop and while the mentioned flanges are engaged with the mentioned opening-defining lips.

3. A connector according to claim 2 in which the spacer element is longer than the other elements and the opposite ends thereof constituting finger-engaging portions enabling the mentioned withdrawing movement of the spacer element.

4. A connector adapted to fit into an opening of an anchor member and carried by the end of a strap, the latter being provided with a deformable end loop, said connector comprising three separate elements strung on said loop and having a total thickness less than the width of said opening, the middle element constituting a spacer for the other two elements, said two elements each being provided with a flange part and said parts being oppositely and outwardly directed to define a total dimension that is greater than the width of the opening, the loop engaging the flange-provided elements and being directed toward the spacer element when tension is imposed on the strap, whereby, with the three elements of the connector inserted into the opening, the mentioned flanges are directed to engage against opening-defining lips of the anchor member upon tension being placed on the strap in a direction away from the anchor member.

5. A connector adapted to fit into an opening of an anchor member and carried by the end of a strip, the latter being provided with a deformable end loop, said connector comprising three elements strung on said loop and having a total thickness less than the width of said opening, the middle element constituting a spacer for the other two elements, said two elements each being provided with a flange part and said parts being oppositely and outwardly directed to define a total dimension that is greater than the width of the opening, the loop engaging the flange-provided elements and being directed toward the spacer element when tension is imposed on the strap, the three elements being provided with slots through which said loop is passed, the slot in the spacer element being wider than the other two to enable relative movement of the spacer element with respect to the flange-provided elements, whereby, with the three elements of the connector inserted into the opening, the mentioned flanges are directed to engage against opening-defining lips of the anchor member upon tension being placed on the strap in a direction away from the anchor member.

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