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S. QUISLING

2,000,983

CLOSURE FASTENING MEANS

Filed Oct. 21, 1933

Fig. 1.

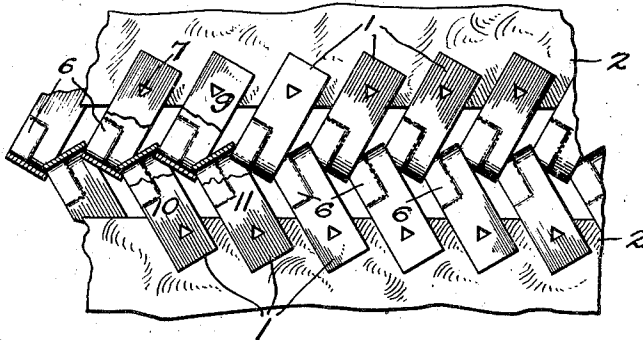


Fig. 2.

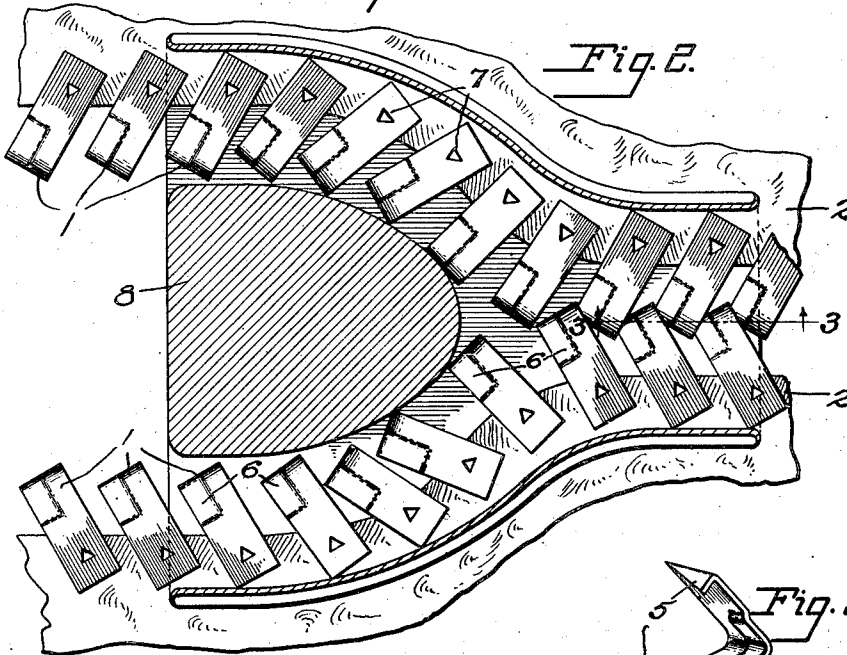


Fig. 3.

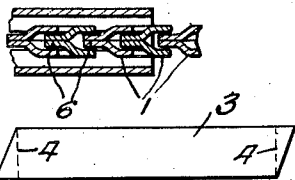


Fig. 4.

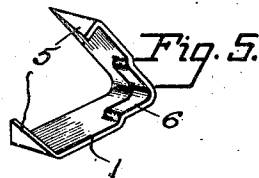
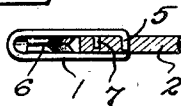
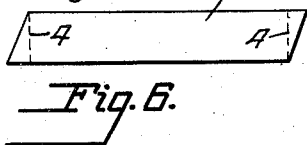


Fig. 6.



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# UNITED STATES PATENT OFFICE

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## CLOSURE FASTENING MEANS

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Application October 21, 1933, Serial No. 694,669

4 Claims. (Cl. 24—205)

This invention is directed to improvements in that form of closure means in which a series of like companion members intermesh and lock when brought together at the proper angle.

The object of this invention is to provide locking members for closures of this type which may be manufactured at a minimum of expense through the use of a simplified construction. These pieces can be made from a continuous piece of metal or other rigid ribbon being cut out, formed and attached all in two or three operations automatically within a machine on the order of a stapling machine.

The invention in its present form, contemplates the provision of locking members which, tho easy to secure upon the free edges of a flexible closure, when fastened to the closure are substantially rigid therewith.

Although a preferred embodiment of the invention is herein shown and described, it is understood that changes may be made in its precise structure without departing from the scope of what is claimed.

Referring to the drawing:

Figure 1 is a plan view, with parts being shown in section, of a device constructed in accordance with the invention;

Figure 2 is a similar view, showing a slide and the method in which the locking members are caused to mesh or to separate;

Figure 3 is a section on the line 3—3 of Figure 2;

Figure 4 is a sectional view showing the method of securing the locking members to the free edges of a closure;

Figure 5 is a perspective view of one of the locking members before it is secured to a closure; and,

Figure 6 shows the blank from which the locking members are formed.

Referring to the drawing in detail, locking members 1 are shown secured to the free edges of a flexible closure 2. In the formation of the locking members predetermined lengths are cut from a roll of ribbon like rigid tape, the cuts being made diagonally across the face of the material and the cut off blank, shown at 3 Figure 6, having its opposite sides parallel. The ends are then bent up upon the lines 4, and the remaining portion, which is rectangular in shape, is bent upon itself forming a U shaped clip having inwardly disposed prongs 5. A portion of the clip at the bottom of the U is pressed inwardly, as at 6, to such an extent that the portion 6 of one clip may readily enter within the opposite side of any companion clip.

The locking members or clips 1 are secured by means of the prongs 5 and a stamped out prong 7, to the edges of the closure, equidistant from one another and at an angle, other than perpendicular to the edge of the closure. Clips upon one edge of the closure are oppositely disposed in angular relation to the clips upon the other edge. Altho practically any angle other than the perpendicular may be used, it will be readily seen that the greater the angle from the perpendicular the greater the locking strength of the clips will be.

When the clips are interlocked, the pressed in portion 6, of a clip, shown at 9 in Figure 1, has entered into the opposite side of a clip 10, secured upon the other free edge of the closure, while the portions 6 of a clip 11, adjacent to clip 10 has entered the free side of 9. It will be seen that the side of each clip bears upon the closed end of each opposite clip. As each clip is secured at three points to the edge of the closure by means of the prongs 5 and 7, to prevent angular movement in relation to the closure edge, and the distance between the clips is much less than the width of a clip, a pull in opposite directions upon the closure will only tend to bind the clips more tightly together.

A slide 8 of conventional design and well known in the art, is used to interlock and separate the clips by twisting the free edges of the closure so as to cause the outward free ends of adjacent clips to separate sufficiently to receive or release a clip secured to the opposite side of the closure.

Having thus described the invention, what I claim is:

1. A fastener of the class described comprising a pair of flexible stringers, and cooperating rows of interlocking members on the adjacent edges of said stringers, each member comprising a piece of sheet material folded double and having parallel side edges and square corners adjacent the folded end, the folded end at one corner being closed and at the opposite corner being open to receive the closed corner of a similar member, the ends of said folded piece serving as means for attaching the member to the stringer, said member being positioned at an acute angle to the stringer edge so that said open corner projects farther from the stringer than the closed corner to permit interlocking engagement of the open and closed corners of the opposite rows of members.

2. A fastener of the class described comprising a pair of flexible stringers and cooperating rows of interlocking members of the adjacent

edges of said stringers, each member comprising an elongated piece of sheet material having its longer edges parallel, said piece being folded upon itself at about its mid-portion, the folded end at one corner being closed and at the opposite corner being open to receive the closed corner of a similar member, the end opposite the folded end overlapping the edge of the stringer and secured thereto, each member being positioned at an acute angle to the stringer so that the open corner projects farther from the stringer than the closed corner to permit interlocking engagement of the open and closed corners of the opposite rows of members.

15 3. A fastener of the class described comprising a pair of flexible tapes, cooperating rows of interlocking members on the edges of said tapes, each member comprising an elongated piece of sheet metal folded upon itself and having parallel uninterrupted edges throughout its length, the folded sides adjacent one of the corners at the folded end being indented close together and on the opposite side being spaced apart to provide a recess at least as wide as the thickness

of the first corner, said members being arranged and secured on the stringer at an acute angle to the edge of the stringer and uniformly spaced apart whereby the open and closed corners of the fastener members may interlock.

4. A fastener of the class described comprising a pair of flexible stringers, and cooperating rows of interlocking members on the adjacent edges of said stringers, each member comprising a flat elongated piece of sheet material with its longer edges parallel, bent upon itself to provide arms for securing the member on the stringers, and a portion adjacent the bend projecting from the stringer and providing two corners at the bend, the material of said arms adjacent one of said corners being spaced apart to form a recess and at the other corner being bent together to form a thin projecting corner adapted to fit into a recess of a similar member, each member being secured in place at an acute angle to the edge of the stringer such that said projection and recess are in alignment with the other recesses and projections of the series.

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