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CAPPED EYELET FOR ATTACHING
SNAP FASTENER

The present invention relates to an eyelet for a snap fastener composed of a male and a female member, and more particularly to a capped eyelet for attaching such a fastener member to a garment fabric or the like.

5 Known capped eyelets for the concerned purposes generally comprise an eyelet body with a flange, and a cap covering thereover, the flange extending outwardly from one end of a cylindrical or tubular shank. In attaching a snap fastener member to a garment fabric, 10 the eyelet body is fastened to the fastener member by deforming a free end of the shank to engage a coupling portion of the fastener member. During this attachment, an endwise force is necessarily applied to the shank toward the cap with the result that the 15 latter is dented to have a scar or scars on its outer surface. This is due to the force applied to the shank which in turn acts on the inner surface of the cap.

U. S. Patent 3,333,306 discloses, as reillustrated here in Figure 5, an eyelet having a pair

of reinforcing wings 6', 6' punched from the flange 2' and folded over to project radially inwardly in such a manner that the under surface of each folded-over wing 6' is flush with the top surface of the flange 2'. The
 5 two wings 6', 6' coact with a wall of the shank 4' to absorb the riveting force applied thereto.

Another prior art eyelet, as proposed in Japanese Utility Model Laid-Open Publication 56-174506 and reillustrated here in Figure 6, has more than two
 10 reinforcing wings 6" punched from the flange 2" and folded over to project radially inwardly in such a manner that each folded-over wing 6" is disposed in the general plane of the flange 2". The wings 6" serve to absorb the riveting force applied thereto.

15 However, with the arrangement of either U.S. Patent 3,333,306 or Japanese Utility Model Laid-Open Publication 56-174506, since the wings 6', 6" can absorb only incompletely the riveting force applied thereto, it is impossible to prevent the cap B', B" from being
 20 marked with any scar on its outer surface.

According to the present invention, there is provided a capped eyelet for attachment of a snap fastener member to a garment, comprising an eyelet body and a cap, the eyelet body having a hollow shank and a
 25 substantially circular flange extending radially outwardly from one end of said shank, said flange having a plurality of buffer wings projecting toward the cap

from a base portion of the flange in directions inclined to the general plane of the base portion of said flange, each said buffer wing having a hollow rib projecting away from the cap, the cap covering over said flange and having a convex wall and a peripheral edge clinched over a periphery of said flange, said buffer wings being resiliently deformable to absorb an endwise force applied to said shank when said capped eyelet is axially compressed for being joined with to the fastener member, said rib of each said buffer wing being engageable with said one end of said shank, upon the deformation of said buffer wings, to assist in absorbing the endwise force.

It is believed possible by means of the present invention to provide a capped eyelet which is free from being marked with any scar on the outer surface of a cap when the eyelet is axially compressed to join with a snap fastener member.

The invention will be described by way of example with reference to the accompanying drawings, wherein:-

Figure 1 is a cross-sectional view of a capped eyelet embodying the present invention;

Figure 2 is a plan view of an eyelet body of Figure 1;

Figure 3 is a cross-sectional view taken along line III-III of Figure 2;

Figure 4 is a cross-sectional view showing the capped eyelet joined with a snap fastener member; and

Figures 5 and 6 are cross-sectional views of prior art capped eyelet.

The present invention is particularly useful when embodied in a capped eyelet such as shown in Figure 1, generally indicated by the numeral 100. The capped eyelet 100 comprises an eyelet body A of metal and a cap B of metal secured thereto.

The eyelet body A includes a tubular shank 1 and a circular flange 2 extending radially outwardly from a flared base portion 3 which is contiguous to an upper or one end of the shank 1. The flange 2 is slightly upwardly curved toward its periphery 2a and has three buffer wings 6, 6, 6 (Figures 1, 2 and 3) punched from a base portion of the flange 2 and folded over the top surface thereof to project from the base portion of the flange toward the cap, there resulting three corresponding apertures 7, 7, 7 in the base portion. Each aperture 7 serves as a drain to allow water or other liquid substance (collected in the capped eyelet 100) due to washing or plating) to flow out of the eyelet 100, thus making the latter free from rust.

As shown in Figure 2, the three buffer wings 6, 6, 6 are arranged about the axis X of the eyelet body A at uniform angular distances. Each buffer wing 6 is of a generally pentagonal shape having two inner edges 6b, 6b disposed at an angle of 120° to each other and extending radially of the circular flange 2. As shown in Figures

1 and 3, each buffer wing 6 projects in a direction inclined to the general plane of the base portion of the flange 2. Each buffer wing 6 has a hollow rib 6a projecting from the under surface of the wing 6 for a purpose described below.

Figure 1 shows the capped eyelet 100 before having been joined with a snap fastener member C (Figure 4). In such initial form, the flange 2 has a radius of curvature smaller than that of a convex top wall 10 of the cap B.

In assembling the capped eyelet 100, the cap B is joined with the eyelet body A by forcing the peripheral portion 11 inwardly to provide an annular curled edge tightly engaging the periphery 2a of the flange 2. In the thus assembled eyelet 100 (Figure 1), the upper surface of each buffer wing 6 is spaced from the under surface of the top wall of the cap B.

In use, the shank 1 of the assembled capped eyelet 100 of Figure 1 is forced through a garment fabric F into a hole S of a snap fastener C, and the shank 1 is then axially compressed against the buffer wings 6, 6, 6 and hence the top wall 10 of the cap B to become deformed at its free end portion into an annular curled edge 4 so as to tightly engage the peripheral edge portion of the hole S of the snap fastener member

C, as shown in Figure 4. Thus the snap fastener member C has been attached to the garment fabric F. In this embodiment, the snap fastener member C comprises a female body adapted to receive a male body of a mating
5 snap fastener member (not shown). Alternatively, the snap fastener member C may comprises a male body adapted to be coupled with a female fastener member.

During this attachment, the endwise or axial force acts on the shank 1 so as to push the three
10 buffer wings 6, 6, 6 against the inner surface of the top wall 10 of the cap B. The buffer wings 6 are resiliently deformed or bent toward the flange 2, while the flange 2 is resiliently deformed until it assumes a generally flat or horizontal posture (Figure 4) in
15 which the radius of curvature of the flange 2 is larger than that of the top wall 10 of the cap B. As a result, an excessive amount of the force applied to the shank 1 is absorbed so as not to cause any scar or mark on the outer surface of the top wall 10 of the cap B.
20 At that time, the ribs 6a of the buffer wings 6 are engageable with the upper end of the shank 1 and serve to assist in absorbing the force applied to the shank 1. Thus the capped eyelet 100 has an improved shock-absorbing means which enables the snap fastener member
25 C to be attached to the garment fabric F firmly and accurately without marring the face of the cap B.

In the illustrated embodiment, the rib 6a of

each buffer wing 6 is of a generally oval shape, as shown in Figure 2. The rib 6a may have an alternative shape such as circle, rectangle or rhombus. Further, each buffer wing 6 may have more than one rib 6a.

**Claims:**

1. A capped eyelet for attachment of a snap fastener member to a garment, comprising an eyelet body and a cap, the eyelet body having a hollow shank and a substantially circular flange extending radially outwardly from one end of said shank, said flange having a plurality of buffer wings projecting toward the cap from a base portion of the flange in directions inclined to the general plane of the base portion of said flange, each said buffer wing having a hollow rib projecting away from the cap, the cap covering over said flange and having a convex wall and a peripheral edge clinched over a periphery of said flange, said buffer wings being resiliently deformable to absorb an endwise force applied to said shank when said capped eyelet is axially compressed for being joined with to the fastener member, said rib of each said buffer wing being engageable with said one end of said shank, upon the deformation of said buffer wings, to assist in absorbing the endwise force.

2. A capped eyelet according to claim 1, the number of said buffer wings being three, such three buffer wings being arranged about the axis of said eyelet body at uniform angular distances.

3. A capped eyelet according to claim 2, each of said three buffer wings being of a generally



pentagonal shape having two inner edges disposed at an angle of 120°~~to~~ each other and extending radially of said flange.

4. A capped eyelet according to any one of claims 1 to 3, said rib of each said buffer wing having a generally
5 oval shape.
 5. A capped eyelet according to any one of claims 1 to 3, said rib of each said buffer wing having a circular shape.
 6. A capped eyelet according to any¹one of claims 1 to 3, said rib of each said buffer wing having a rectangular
10 shape.
 7. A capped eyelet substantially as described with reference to and as illustrated in Figures 1 to 3 of the accompanying drawings.
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