

Description

The present invention relates to a metal button including a button body and a tack member engageable therewith for attaching the button to a garment fabric, and more particularly a button body including a coverless head plate such as known from GB-A-583255.

A known metal button used for jeans, for example, usually bears indicia on its head surface, i.e. its head cover. The head cover is often made of a die-cast metal, because it presents more conspicuous and clear view of the indicia.

Japanese Utility Model Laid-Open Publication No. 59-25208 discloses a metal button of this type as illustrated in Figure 5 of the accompanying drawings. The disclosed button comprises a button body A' and a tack member B' for attaching the button to a garment fabric F. The button body A' includes a cap 60, a button back 70 and an anvil plate 80 disposed therebetween. The cap 60 is made of a die-cast metal such as zinc and the button back is made of a brass or steel plate. The cap 60 has a marginal wall 61 peripherally bent downwardly over an annular flange 71 of the button back 70. The disclosed button has a drawback in its mechanical strength. The cap 60 of the die-cast metal tends to have a crack or other damage on its bent portion 62 when it undergoes external forces in a daily use of the button, because the bent portion 62 has residual stresses created by bending the marginal wall 61 during the assembling of the button body A'. The bent portion 62 is therefore susceptible to rupture and split open to reveal a sharp edge of the flange 71, or makes the cover 60 sometimes become separated from the button back 70.

According to the present invention, there is provided a button for attachment to a garment fabric, comprising: a button body including a button back having a hollow hub projecting centrally therefrom, and an annular flange extending radially outwardly from an uppermost end of said hollow hub and terminating in a raised peripheral wall, a tack member having a head and a shank projecting centrally integrally from said head for being pierced through the garment fabric to be inserted into said hollow hub of said button back for thereby attaching said button body to the garment fabric; and said button body further including a molded head plate, said head plate being disposed on said annular flange and intimately engaged at its peripheral end by said raised peripheral wall of the button back, said annular brace extending on both an outer surface of said raised wall and a peripheral margin of said head plate throughout their peripheries for thereby holding said head plate and said button back together, said head plate having a front surface exposed.

The present invention seeks to provide a metal button for a garment fabric which is provided with increased structural strength and hence prolonged service life.

The present invention further seeks to provide a metal button including a molded head plate which is exposed to constant view.

Many other advantages and features of the present invention will become manifest to those versed in the art upon making reference to the detailed description and the accompanying sheets of drawings in which preferred structural embodiments incorporating the principles of the present invention are shown by way of illustrative example.

Figure 1 is a vertical cross-sectional view of a button embodying the present invention, showing a tack member thereof in side elevation;

Figure 2 is a plan view of the button;

Figure 3 is a vertical cross-sectional view of a part modification of the button;

Figure 4 is a vertical cross-sectional view similar to Figure 1, showing a modified button body with the tack member joined therewith; and

Figure 5 is a vertical cross-sectional view of a prior button.

As shown in Figures 1 and 2, a button includes a button body A and a tack member B adapted to join with the button body for attaching the button to a garment fabric F. The button body A includes a button back 2, a circular head plate 3 and an annular brace 1 for holding the button back 2 and the head plate together. The tack member has a head 5 and a shank 4 projecting centrally and perpendicularly from the head 5.

The button back 2 is made of a brass or steel plate. The button back 2 has an annular flange 21 formed with an annular wavy portion 25 having concentric recesses and lands, and a hollow hub formed with a double tube projecting concentrically downwardly from an inner edge of the wavy portion 25. The double tube has a pair of concentric inner and outer tubes joined at their lower ends by an annular turn 22. The inner tube has at its upper end an outwardly curved annular flange 24. The annular wavy portion 25 of the annular flange 21 extends substantially radially outwardly and terminates in an annular raised wall or rim 26.

The head plate 3 is molded of a proper material such as zinc or steel and has a thickness substantially greater than those of the button back 2 and the annular brace 1. The relatively thick head plate 3 has an annular groove 31 extending on an upper or front surface 34 of the plate 3 along its periphery, and an annular land portion 33 disposed outwardly adjacent to the groove. The head plate 3 has non-illustrated indicia such as ornamental designs which is formed on the upper surface during the molding of the head plate. A slot 32 is formed in a bottom of the groove 31 at one angular position thereof (Figure 2) for a purpose described below. The head plate 3 of such construction is positioned on the annular flange 21 of the button back 2 so that the head plate 3 is peripherally engaged by the raised wall 26 of the flange. The head plate 3 may be made of an injection molded plastic resin.

The annular brace 1 is made of a brass or steel plate and extends surrounding peripheries of the

head plate 3 and the button back 2. As better shown in the vertical cross section of Figure 1, the brace 1 has upper and lower portions 12, 13 joined integrally to each other at a bent portion 14. The lower portion 13 extends downwardly from the bent portion 14 on and along an outer surface of the raised wall 26 of the button back 2 and reaches to a position under a lower part of the raised wall 26. The upper portion 12 extends horizontally and inwardly of the head plate beyond the annular land portion 33 thereof and terminates in the annular groove 31 to define edge a downwardly directed annular 13. The annular brace 1 also has a narrow extended portion 11 projecting downwardly from the downwardly directed edge 13 into the slot 32, and a tab 15 extending horizontally and inwardly of the button back from a lower edge of the lower portion 13 of the brace. The tab is disposed in registry with the narrow extended portion 11. The narrow extended portion 11 is loosely fit in the slot 32 and serves for preventing the head plate 3 from rotating with respect to the button back 2. In this particular embodiment, an upper surface of the annular brace, i.e. of the upper portion 12 is flush with the upper face of the head plate 3.

For attachment of the button to the garment fabric F, the shank 4 of the tack member B is forced to penetrate the fabric F to be inserted into the inner tube of the hollow tube 23 of the button body A. When the shank 4 is fully inserted into the hollow hub 23, the distal end of the shank is pressed against a lower or reverse surface 35 of the head plate 3, thereby causing the distal end to be deformed into a radially outwardly bulged portion 42 in a well known manner. The head plate therefore serves also as a conventional anvil plate. The bulged portion 42 and a shank stock 41 are tightly engaged by the flange 24 and the inner tube wall, respectively, thereby preventing a separation of the tack member B from the button body A.

With the foregoing arrangement, the annular brace 1 holds together the button back 2 and the head plate 3 in a reliable manner. Since the brace 1 is made of the brass or steel plate which has high ductility, the bent portion 14 of the brace is less likely to have mechanical damages such as a crack or breakage when it undergoes external undue forces imposed thereon in a daily use thereof. The head plate can expose to view its front surface 34 bearing characters or the like thereon. Clear indicia can be formed on the front surface 34 because the head plate 3 is thick enough to allow for formation of a relief thereon. In case the indicia which the head plate bears needs to be kept in a specified direction, the head plate can be deliberately retained in the desired direction by a retaining mechanism composed of the narrow extended portion and the slot receiving the same.

Figure 3 shows a modified annular brace 1' which is similar to the brace 1 of Figure 1 except that the brace 1' has no counterparts corresponding to the narrow extended portion 11 and the tab 15.

Figure 4 shows a modified button body A' which is similar to the button body A of Figure 1. The

modified button body A' includes a head plate 3' having an annular stepped portion 35 of a reduced thickness at its peripheral margin. The upper portion 12 of the brace 1' extends radially inwardly from its bent portion 14 on and along a horizontal surface of the stepped portion 35 and terminates in short of a substantially vertical surface of the same. A slot 32' is formed at one angular portion of the annular stepped portion for receiving a downwardly extended narrow portion 11' projecting from an inner edge of the brace 1'. In this embodiment, an upper surface of the brace 1' is disposed at a level lower than that of the obverse face 34 of the head plate 3. This arrangement is advantageous in keeping the brace, particularly the upper portion thereof from being trapped by an edge of the button hole of the garment when the button is unhooked.

Claims

1. A button for attachment to a garment fabric (F), comprising: a button body (A) including a button back (2) having a hollow hub (23) projecting centrally therefrom, and an annular flange (21) extending radially outwardly from an uppermost end of said hollow hub and terminating in a raised peripheral wall (26), a tack member (B) having a head (5) and a shank (4) projecting centrally integrally from said head (5) for being pierced through the garment fabric (F) to be inserted into said hollow hub (23) of said button back (2) for thereby attaching said button body (A) to the garment fabric (F); and said button body (A) further including a molded head plate (3), said head plate (3) being disposed on said annular flange (21) and intimately engaged at its peripheral end by said raised peripheral wall (26) of the button back (2), characterised in that it comprises an annular brace (1, 1') made of a metal plate, said annular brace (1) extending on both an outer surface of said raised wall (26) and a peripheral margin of said head plates (3) throughout their peripheries for thereby holding said head plate (3) and said button back (2) together, said head plate (3) having a front surface (34) exposed.

2. A button according to claim 1, said head plate (3) having an annular groove (31) extending on the front surface thereof inwardly adjacent to the peripheral end of said head plate (3), said annular brace having a downwardly directed annular edge (13) disposed in said annular groove (31).

3. A button according to claim 2, said head plate having a slot (32) at a bottom of said annular groove (31), said annular brace (1) having a narrow extended portion (11) projecting downwardly from said annular edge (13) and received in said slot (32).

4. A button according to claim 1, said head plate (3) having at the peripheral margin in annular stepped portion (35), said annular brace (1') having an upper horizontal portion (12) extending on said stepped portion (35) to thereby hold said head plate (3) and said button back (2) together, said upper horizontal portion (12) of said brace (1')



being disposed at a level lower than that of the front surface (34) of said head plate.

5. A button according to claim 1, said head plate being made of a die-cast metal.

6. A button according to claim 4, said head plate (3) having a slot (32') in said stepped portion (35), said annular brace (1') having narrow extended portion (11') projecting downwardly from an inner edge of said upper horizontal portion (12) of said brace (1') into said slot (32') in said stepped portion (35).

Patentansprüche

1. Knopf zur Befestigung an einem Kleiderstoff (F), umfassend: einen Knopfkörper (A) mit einer Knopfunterstützung (2), die eine mittig abstehende hohle Nabe (23) und einen ringförmigen Flansch (21) aufweist, der von einem oberen Ende der hohlen Nabe radial nach außen ragt und in einer nach oben weisenden Umfangswand (26) endet, einen Niet (B), der einen Kopf (5) und einen Schaft (4) aufweist, der von dem Kopf (5) einstückig mittig absteht zum Hindurchstechen durch den Kleiderstoff (F) zum Einsetzen in die hohle Nabe (23) der Knopfunterstützung (2), um dadurch den Knopfkörper (A) an dem Kleiderstoff (F) zu befestigen; wobei der Knopfkörper (A) ferner eine gegossene Kopfplatte (3) aufweist, wobei diese Kopfplatte (3) auf dem ringförmigen Flansch (21) angeordnet und an ihrem Umfangsende von der nach oben weisenden Umfangswand (26) der Knopfunterstützung (2) eng umgriffen ist, dadurch gekennzeichnet, daß er eine aus Metallblech gebildete ringförmige Verstärkung (1, 1') umfaßt, wobei sich diese ringförmige Verstärkung (1) sowohl an einer Außenseite der nach oben weisenden Wand (26) als auch an einem Umfangsrand der Kopfplatte (3) um deren gesamten Umfang herum erstreckt, um dadurch die Kopfplatte (3) und die Knopfunterstützung (2) zusammenzuhalten, wobei die Kopfplatte (3) eine freiliegende Vorderseite (34) hat.

2. Knopf nach Anspruch 1, wobei die Kopfplatte (3) eine Ringnut (31) hat, die sich an ihrer Vorderseite neben dem Umfangsende der Kopfplatte (3) nach innen erstreckt, wobei die ringförmige Verstärkung einen nach unten weisenden ringförmigen Rand (13) hat, der in dieser Ringnut (31) angeordnet ist.

3. Knopf nach Anspruch 2, wobei die Kopfplatte am Grund der Ringnut (31) einen Schlitz (32) hat, wobei die ringförmige Verstärkung (1) einen schmalen verlängerten Bereich (11) hat, der von dem ringförmigen Rand (13) nach unten ragt und in diesen Schlitz (32) eingreift.

4. Knopf nach Anspruch 1, wobei die Kopfplatte (3) am Umfangsrand einen ringförmigen abgestuften Bereich (35) hat, wobei die ringförmige Verstärkung (1') einen oberen horizontalen Bereich (12) hat, der sich auf diesem abgestuften Bereich (35) erstreckt, um dadurch die Kopfplatte (3) und die Knopfunterstützung (2) zusammenzuhalten, wobei der obere horizontale Bereich (12) der Verstärkung (1') auf einem tieferen Niveau

angeordnet ist als die Vorderseite (34) der Kopfplatte.

5. Knopf nach Anspruch 1, wobei die Kopfplatte ein Gußteil aus Metall ist.

6. Knopf nach Anspruch 4, wobei die Kopfplatte (3) in dem abgestuften Bereich (35) einen Schlitz (32') aufweist, wobei die ringförmige Verstärkung (1') einen schmalen verlängerten Bereich (11') hat, der von einem inneren Rand des oberen horizontalen Bereichs (12) der Verstärkung (1') nach unten in den Schlitz (32') in dem abgestuften Bereich (35) hineinragt.

Revendications

1. Bouton pour être fixé au tissu (F) d'un vêtement, comprenant: un corps (A) de bouton comprenant un dos (2) de bouton comportant un moyeu creux (23) faisant saillie centralement de ce dos, et un rebord annulaire (21) s'étendant radialement vers l'extérieur depuis l'extrémité supérieure du moyeu creux et se terminant par une paroi périphérique surélevée (26), un clou (B) comportant une tête (5) et une tige (4) faisant saillie centralement de ladite tête (5) dont elle fait partie intégrante pour être enfoncée à travers le tissu (F) du vêtement, de manière à être introduite dans le moyeu creux (23) du dos (2) de bouton, afin de fixer ainsi le corps (A) du bouton au tissu (F) du vêtement; et le corps (A) du bouton comprenant, en outre, une plaque de tête moulée (3), ladite plaque de tête (3) étant disposée sur le rebord annulaire (21) et se trouvant en contact intime, à son extrémité périphérique, avec la paroi périphérique surélevée (26) de dos (2) du bouton, caractérisé en ce qu'il comprend un élément annulaire d'assemblage (1, 1') formé d'une plaque métallique, cet élément annulaire d'assemblage (1) s'étendant à la fois sur la surface extérieure de la paroi surélevée (26) et sur une partie marginale périphérique de la plaque de tête (3) sur la totalité de leurs périphéries pour maintenir ainsi assemblés la plaque de tête (3) et le dos (2) de bouton, ladite plaque (3) de tête comportant une face avant (33) exposée à la vue.

2. Bouton selon la revendication 1, ladite plaque (3) de tête comportant une rainure circulaire (31) s'étendant sur la surface avant de cette dernière, vers l'intérieur et de façon adjacente à l'extrémité périphérique de ladite plaque (3) de tête, l'élément d'assemblage annulaire comportant un bord annulaire (13) dirigé vers le bas et disposé dans la rainure circulaire (31).

3. Bouton selon la revendication 2, ladite plaque de tête comportant une fente (32) au fond de la rainure circulaire (31), l'élément d'assemblage annulaire (1) comportant une partie étroite prolongée (11) faisant saillie vers le bas depuis ledit bord annulaire (13) et reçue dans la fente (32).

4. Bouton selon la revendication 1, ladite plaque (3) de tête comportant dans sa partie marginale périphérique une partie épaulée annulaire (35), l'élément d'assemblage annulaire (1') comportant une partie horizontale supérieure (12) s'étendant sur ladite partie épaulée (35) de manière à mainte-



nir ainsi la plaque (3) de tête et le dos (2) de bouton assemblés mutuellement, la partie horizontale supérieure (12) de l'élément d'assemblage (1') se trouvant à un niveau plus bas que celui de la surface avant (34) de la plaque de tête.

5. Bouton selon la revendication 1, ladite plaque de tête étant formée d'un métal moulé sous pression.

6. Bouton selon la revendication 4, ladite plaque (3) de tête comportant une fente (32') dans la partie épaulée (35), l'élément d'assemblage annulaire (1') comportant une partie étroite prolongée (11') faisant saillie vers le bas depuis le bord intérieure de la partie horizontale supérieure (12) dudit élément d'assemblage (1') jusque dans la fente (32') de la partie épaulée (35).

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