

Description

This invention relates to a buckle for fastening loose ends of a belt or strap.

There have been proposed many forms of buckle designed to releasably connect loose ends of a belt, strap and the like. A typical example of such known buckle, as described for example in US—A—3,200,404, patented August 17, 1965, comprises a male or plug member and a female or receptacle member, the male member having a locking projection to be resiliently inserted into an opening in the female member, whereby the two members can be snapped into and out of engagement with each other. However, when releasing the male member from the female member, it has been necessary to manipulate the buckle with both hands because of the presence of an upper plate portion at the entrance end of the female member which would necessitate pushing the male member underneath the said plate portion with one hand while pulling it out past the same portion with the other hand.

"FR—A—1 092 064" (See Fig. 1 thereof) discloses a buckle for fastening together loose ends of a belt or the like, which comprises a male part (see part 4) and a female part (see part 3), said parts each having a belt-end retainer connected or connectible to one of the ends of the belt, said male part comprising a plug member (see part 14) and said female part comprising a receptacle member engageable with said plug member, said plug member having opposite flat side portions and a raised head portion defining therebetween a generally U-shaped groove having branches merging into a bay, to permit said raised head portion to flex resiliently, said head portion including a pair of sloped shoulders (see parts 11) which are inclined progressively upwardly and a button portion lying in a plane parallel to said flat side portions, said receptacle member having opposite side flange portions, said side flange portions having at their respective free ends a pair of inwardly projecting lugs (see parts 23, 24) which confront with each other across a gap at the front end of said receptacle member, said lugs engaging said shoulders of said head portion when said male and female parts are coupled.

However, the lugs 23 and 24 in FR—A—1 092 064 are bent substantially out of the plane of the remainder of the female part.

The present invention relates to a buckle of a type for fastening together loose ends of a belt or the like, which comprises a male part and a female part, said parts each having a belt-end retainer connected or connectible to one of the ends of the belt, said male part comprising a plug member and said female part comprising a receptacle member engageable with said plug member, said plug member having opposite flat side portions and a raised head portion defining therebetween a generally U-shaped groove having branches merging into a bay which is

adjacent the belt retainer, to permit said raised head portion to flex resiliently, said head portion including on each side a sloped shoulder which is inclined progressively upwardly and a button portion lying in a plane parallel to said flat side portions, said receptacle member having a transverse closed rear-end flange portion, opposite side flange portions integral therewith and a guide channel formed co-extensively with said flange portions, said side flange portions having at their respective free ends a pair of inwardly projecting lugs which confront with each other across a gap at the front end of said receptacle member, said lugs engaging said shoulders of said head portion when said male and female parts are coupled.

According to the present invention, the buckle is characterised in that said lugs are coplanar with said side flange portions and in that shoulders of said plug member include substantially L-shaped recesses for receiving said lugs of said receptacle member when the two parts are coupled.

The invention will be better understood from the following detailed description taken in conjunction with the accompanying drawings which illustrate by way of example a preferred embodiment which the invention may assume in practice.

Figure 1 is a plan view showing the construction of a buckle embodying the invention;

Figure 2 is a cross-sectional view taken on the line II—II of Figure 1;

Figure 3 is a plan view of a male part of the buckle of Figure 1;

Figure 4 is a cross-sectional view taken on the line IV—IV of Figure 3;

Figure 5 is a cross-sectional view taken on the line V—V of Figure 3;

Figure 6 is a cross-sectional view taken on the line VI—VI of Figure 3;

Figure 7 is a plan view of a female part of the buckle;

Figure 8 is a cross-sectional view taken on the line VIII—VIII of Figure 7; and

Figure 9 is a left-hand side elevation of Figure 7.

Referring view to the drawings and Figure 1 in particular, there is shown a buckle 10 embodying the invention which generally comprises a male or plug part 11 and a female or receptacle part 12, the two parts being releasably coupled.

The male part 11 of the buckle 10, as better shown in Figures 3 to 6 inclusive, comprises a generally rectangular plate-like plug member 13 having a centrally raised head portion 14. The plug member 13 has a front end portion 15 and opposite flat side portions 16, 16' which define with the raised portion 14 a generally U-shaped cut-out groove 17 having relatively narrow parallel branches 18, 18' merging into a relatively wide bay 19 which is adjacent a belt-end retainer 20 (see below). The provision of this cut-out groove 17 permits the raised head por-

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tion 14 to flex resiliently in a manner similar to a leaf spring. The head portion 14 includes on two sides thereof respectively a pair of sloped shoulders 14a, 14a', which are inclined progressively upwardly toward the bay 19, and includes a substantially square button portion 14b with its top surface normally lying in a plane parallel to the plug portions 15, and 16, 16'. The raised head portion 14 serves to lock the male part 11 with and release the same from the female part 12 in a manner hereinafter to be described, for which purpose the shoulders 14a, 14a' are provided with substantially L-shaped recesses 14c, 14c' confronting with the bay 19. The button portion 14b projects at its one end 14d beyond the recesses 14c, 14c' into the bay 19.

The male part 11 is provided with a belt-end retainer 20 (referred to above) integrally formed with the plug member 13 and having transverse openings 29 for receiving one end of a belt-like article not shown.

Figures 7 to 9 inclusive are provided to illustrate the construction of the female part 12 of the buckle 10. The female part 12 comprises a generally rectangular receptacle member 21 having a transverse closed rear-end flange portion 22 and opposite side flange portions 23, 23' integral therewith. A guide channel 24 is formed coextensively with the flange portions 22 and 23, 23' and communicating with a substantially square center opening 25. At the free ends 23a, 23b of the respective side flange portions 23, 23', there are provided a pair of inwardly projecting lugs 23c and 23d which are co-planar with the side flange portions 23, 23' and which confront with each other across a gap 26 at the open front end 27 of the receptacle member 21. The projected end 14d of the button portion 14b is placed in the gap 26 once when the male part 11 and the female part 12 are coupled together in such a manner described hereinbelow.

Designated at 28 is a belt-end retainer for retaining thereat the other end of the belt-like object.

When coupling the male part 11 with the female part 12 as shown in Figure 1, the button portion 14b may be conveniently held in the hand of the user and manipulated so as to insert the plug member 13 into the receptacle member 21, in which instance the side plug portions 16, 16' are introduced into the side flange portions 23, 23' respectively until the front end portion 15 of the plug member 12 comes in registry with the closed-end flange portion 22 of the receptacle member 21. During this coupling movement of the plug member 13 the raised head portion 14 is fixed downwardly in contact with lugs 23c, 23d of the receptacle member 21. When the plug member 13 has been thus fully inserted into the receptacle member 21, the button 14b may be released, whereupon the lugs 23c, 23d of the receptacle 21 are held in abutting engagement with the re-

cesses 14c, 14c' of the plug 13 thereby locking the buckle 10 in place.

When removing the plug 13 from the receptacle 21, the button 14b is depressed to disengage the lugs 23c, 23d from the recesses 14c, 14c' respectively and thereafter the plug 13 is drawn out of the receptacle 21. All of this manipulation can be done simply with one hand, as there is no obstacle at the gap 26 of the receptacle 21 which would have been otherwise occupied in the case of the conventional counterparts by an upper front plate portion corresponding to that of the closed rear-end flange 22.

Although various minor modifications may be suggested by those versed in the art, it should be understood that we wish to embody within the scope of the patent warranted hereon, all such embodiments as reasonably and properly come within the scope of this contribution to the art.

Claims

1. A buckle (10) for fastening together loose ends of a belt or the like, which comprises a male part (11) and a female part (12), said parts (11, 12) each having a belt-end retainer (20, 28) connected or connectible to one of the ends of the belt, said male part (11) comprising a plug member (13) and said female part comprising a receptacle member (21) engageable with said plug member (13), said plug member (13) having opposite flat side portions (16, 16') and a raised head portion (14) defining therebetween a generally U-shaped groove (17) having branches (18, 18') merging into a bay (19) which is adjacent the belt-end retainer (20), to permit said raised head portion (14) to flex resiliently, said head portion (14) including on two sides thereof respectively a pair of sloped shoulders (14a, 14a'), which are inclined progressively upwardly, and including a button portion (14b) lying in a plane parallel to said flat side portions (16, 16'), said receptacle member (21) having a transverse closed rear-end flange portion (22), opposite side flange portion (23, 23') integral therewith and a guide channel (24) formed co-extensively with said flange portions (23, 23'), said side flange portions (23, 23') having at their respective free ends a pair of inwardly projecting lugs (23c, 23d) which confront with each other across a gap (26) at the front end (27) of said receptacle member (21), said lugs (23c, 23d) engaging said shoulders (14a, 14a') of said head portion (14) when said male and female parts (11, 12) are coupled, characterised in that said lugs (23c, 23d) are co-planar with said side flange portions (23, 23') and in that shoulders (14a, 14a') of said plug member (13) include substantially L-shaped recesses (14c, 14c') for receiving said lugs 23c, 23d of said receptacle member (21) when the two parts (11, 12) are coupled.



tion 14 to flex resiliently in a manner similar to a leaf spring. The head portion 14 includes on two sides thereof respectively a pair of sloped shoulders 14a, 14a', which are inclined progressively upwardly toward the bay 19, and includes a substantially square button portion 14b with its top surface normally lying in a plane parallel to the plug portions 15, and 16, 16'. The raised head portion 14 serves to lock the male part 11 with and release the same from the female part 12 in a manner hereinafter to be described, for which purpose the shoulders 14a, 14a' are provided with substantially L-shaped recesses 14c, 14c' confronting with the bay 19. The button portion 14b projects at its one end 14d beyond the recesses 14c, 14c' into the bay 19.

The male part 11 is provided with a belt-end retainer 20 (referred to above) integrally formed with the plug member 13 and having transverse openings 29 for receiving one end of a belt-like article not shown.

Figures 7 to 9 inclusive are provided to illustrate the construction of the female part 12 of the buckle 10. The female part 12 comprises a generally rectangular receptacle member 21 having a transverse closed rear-end flange portion 22 and opposite side flange portions 23, 23' integral therewith. A guide channel 24 is formed coextensively with the flange portions 22 and 23, 23' and communicating with a substantially square center opening 25. At the free ends 23a, 23b of the respective side flange portions 23, 23', there are provided a pair of inwardly projecting lugs 23c and 23d which are co-planar with the side flange portions 23, 23' and which confront with each other across a gap 26 at the open front end 27 of the receptacle member 21. The projected end 14d of the button portion 14b is placed in the gap 26 once when the male part 11 and the female part 12 are coupled together in such a manner described hereinbelow.

Designated at 28 is a belt-end retainer for retaining thereat the other end of the belt-like object.

When coupling the male part 11 with the female part 12 as shown in Figure 1, the button portion 14b may be conveniently held in the hand of the user and manipulated so as to insert the plug member 13 into the receptacle member 21, in which instance the side plug portions 16, 16' are introduced into the side flange portions 23, 23' respectively until the front end portion 15 of the plug member 12 comes in registry with the closed-end flange portion 22 of the receptacle member 21. During this coupling movement of the plug member 13 the raised head portion 14 is fixed downwardly in contact with lugs 23c, 23d of the receptacle member 21. When the plug member 13 has been thus fully inserted into the receptacle member 21, the button 14b may be released, whereupon the lugs 23c, 23d of the receptacle 21 are held in abutting engagement with the re-

cesses 14c, 14c' of the plug 13 thereby locking the buckle 10 in place.

When removing the plug 13 from the receptacle 21, the button 14b is depressed to disengage the lugs 23c, 23d from the recesses 14c, 14c' respectively and thereafter the plug 13 is drawn out of the receptacle 21. All of this manipulation can be done simply with one hand, as there is no obstacle at the gap 26 of the receptacle 21 which would have been otherwise occupied in the case of the conventional counterparts by an upper front plate portion corresponding to that of the closed rear-end flange 22.

Although various minor modifications may be suggested by those versed in the art, it should be understood that we wish to embody within the scope of the patent warranted hereon, all such embodiments as reasonably and properly come within the scope of this contribution to the art.

Claims

1. A buckle (10) for fastening together loose ends of a belt or the like, which comprises a male part (11) and a female part (12), said parts (11, 12) each having a belt-end retainer (20, 28) connected or connectible to one of the ends of the belt, said male part (11) comprising a plug member (13) and said female part comprising a receptacle member (21) engageable with said plug member (13), said plug member (13) having opposite flat side portions (16, 16') and a raised head portion (14) defining therebetween a generally U-shaped groove (17) having branches (18, 18') merging into a bay (19) which is adjacent the belt-end retainer (20), to permit said raised head portion (14) to flex resiliently, said head portion (14) including on two sides thereof respectively a pair of sloped shoulders (14a, 14a'), which are inclined progressively upwardly, and including a button portion (14b) lying in a plane parallel to said flat side portions (16, 16'), said receptacle member (21) having a transverse closed rear-end flange portion (22), opposite side flange portion (23, 23') integral therewith and a guide channel (24) formed co-extensively with said flange portions (23, 23'), said side flange portions (23, 23') having at their respective free ends a pair of inwardly projecting lugs (23c, 23d) which confront with each other across a gap (26) at the front end (27) of said receptacle member (21), said lugs (23c, 23d) engaging said shoulders (14a, 14a') of said head portion (14) when said male and female parts (11, 12) are coupled, characterised in that said lugs (23c, 23d) are co-planar with said side flange portions (23, 23') and in that shoulders (14a, 14a') of said plug member (13) include substantially L-shaped recesses (14c, 14c') for receiving said lugs 23c, 23d of said receptacle member (21) when the two parts (11, 12) are coupled.



2. A buckle (10) as claimed in claim 1, wherein said button portion (14b) projects at its one end (14d) beyond said recesses (14c, 14c') into said bay (19), said gap (26) receiving therein said one end (14d) of said button portion (14b) when said two parts (11, 12) are coupled.

Patentansprüche

1. Schnalle (10) zum Verbinden der losen Enden eines Gürtels oder dgl. mit einem männlichen und einem weiblichen Teil (11 und 12), wobei diese Teile jeweils eine Gürtel-Befestigung (20, 28) aufweisen, die mit einem der Enden des Gürtels verbunden oder verbindbar ist, wobei das männliche Teil (11) aus einem Einsteckteil (13) besteht und das weibliche Teil (12) aus einem Aufnahmeteil (21) besteht, das mit dem Einsteckteil (13) in Eingriff bringbar ist, wobei das Einsteckteil (13) einander gegenüberliegenden ebene Seitenbereiche (16, 16') und einen erhabenen Kopfbereich (14) aufweist, die zwischen sich eine im allgemeinen U-förmige Rinne (17) mit in eine der Gürtel-Befestigung (20) benachbarte Erweiterung (19) einmündenden Ästen (18, 18') begrenzen, damit der erhabene Kopfbereich (14) elastisch nachgeben kann, wobei der Kopfbereich (14) auf seinen beiden Seiten zwei nach oben ansteigende Schultern (14a, 14a') und einen Griffbereich (14b) aufweist, der in einer zu den ebenen Seitenbereichen (16, 16') parallelen Ebene liegt, wobei das Aufnahmeteil (21) am hinteren Ende einen geschlossenen Querflansch (22), mit dem Querflansch (22) integrierte, einander gegenüberliegenden Seitenflansche (23, 23') und einen sich über die Länge der Seitenflansche erstreckenden Führungskanal (24) aufweist, wobei die Seitenflansche (23, 23') an ihren freien Enden zwei nach innen vorspringende Ansätze (23c, 23d) aufweisen, die an einem am vorderen Ende (27) des Aufnahmeteils (21) angeordneten Spalt (26) einander gegenüberliegen, und wobei die Ansätze (23c, 23d) mit den Schultern (14a, 14a') des Kopfbereichs (14) in Eingriff gelangen, wenn das männliche und das weibliche Teile (11 und 12) zusammengefügt werden, dadurch gekennzeichnet, daß die Ansätze (14a, 14a') mit den Seitenflanschen (23, 23') flächenbündig sind und daß die Schultern (14a, 14a') des Einsteckteils (13) im wesentlichen L-förmige Ausnehmungen (14c, 14c') aufweisen, welche die Ansätze (23c, 23d) des Aufnahmeteils (21) aufnehmen, wenn die beiden Teile (11, 12) zusammengefügt werden.

2. Schnalle nach Anspruch 1, dadurch gekennzeichnet, daß der Griffbereich (14b) an seinem einen Enden (14d) über die Ausnehmungen (14c, 14c') hinaus in die Erweiterung (19) hineinragt, wobei der Spalt (26) dieses eine Ende (14d) des Griffbereichs (14b) aufnimmt,

wenn die beiden Teile (11, 12) zusammengefügt werden.

Revendications

1. Boucle (10) pour fixer l'une à l'autre les extrémités libres d'une ceinture ou d'un article analogue, cette boucle comprenant une pièce mâle (11) et une pièce femelle (12), ces pièces comportant chacune une pièce (20, 28) de retenue assujettie ou pouvant être assujettie à l'une des extrémités de la ceinture, la pièce mâle (11) comprenant un élément (13) d'insertion et la pièce femelle (12) comprenant un élément (21) de réception dans lequel peut s'engager l'élément (13) d'insertion, ce dernier élément comportant des parties latérales opposées plates (16, 16') et une tête surélevée (14) délimitant entre elles une rainure (17) ayant la forme générale d'un U dont les branches (18, 18'), se terminent par un creux (19) qui est contigu à la pièce (20) de retenue de l'extrémité de la ceinture pour permettre une flexion élastique de la tête surélevée (14), cette tête (14) comprenant respectivement sur deux de ses côtés une paire d'épaulements (14a, 14a') en pente qui s'inclinent progressivement vers le haut, et comprenant une partie (14b) formant bouton qui se trouve dans un plan parallèle aux parties latérales plates (16, 16'), l'élément (21) de réception comportant une partie (22) d'extrémité arrière transversale fermée formant rebord, des parties latérales opposées (23, 23') formant rebord et faisant corps avec la partie (22) et un canal (24) de guidage de même étendue que les parties (23, 23') formant rebord, ces parties (23, 23') formant rebord comportant à leurs extrémités libres respectives une paire d'oreilles (23c, 23d) faisant saillie vers l'intérieur et situées en regard l'une de l'autre de part et d'autre d'un intervalle (26) se trouvant à l'extrémité avant (27) de l'élément (21) de réception, ces oreilles (23c, 23d) portant contre les épaulements (14a, 14a') de la tête (14) lorsque les pièces mâle et femelle (11, 12) sont accouplées, cette boucle (10) étant caractérisée en ce que les oreilles (23c, 23d) sont situées dans le même plan que les parties latérales (23, 23') formant rebord et en ce que les épaulements (14a, 14a') de l'élément (13) d'insertion comprennent des évidements (14c, 14c') sensiblement en forme de L pour recevoir les oreilles (23c, 23d) de l'élément (21) de réception lorsque les deux pièces (11, 12) sont accouplées.

2. Boucle (10) suivant la revendication 1, dans laquelle la partie (14b) formant bouton se prolonge à son extrémité (14d) au delà des évidements (14c, 14c') jusque dans le creux 19, l'intervalle (26) recevant l'extrémité (14d) de la partie (14b) formant bouton lorsque les deux pièces (11, 12) sont accouplées.