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C. LOMBARDI

2,473,209

BUCKLE

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Fig. 1.

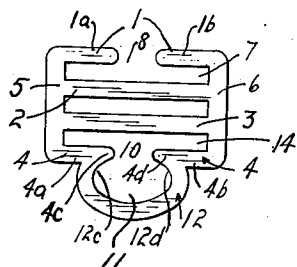


Fig. 2.

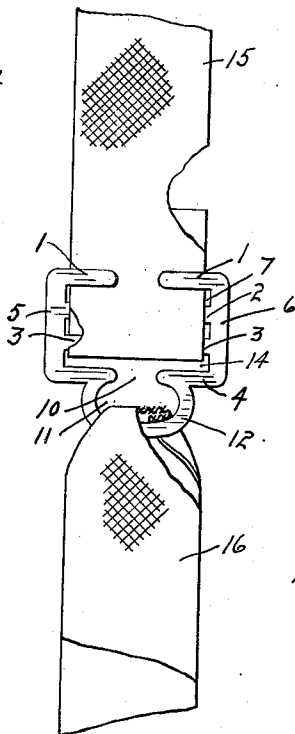


Fig. 3.

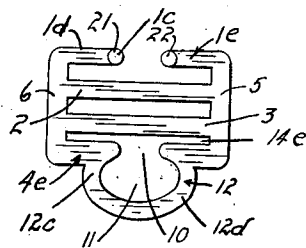


Fig. 4.

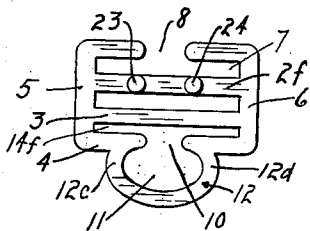


Fig. 5.

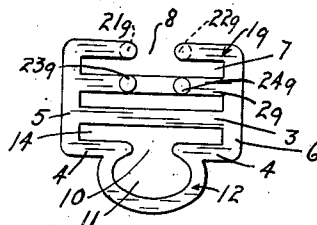


Fig. 6.

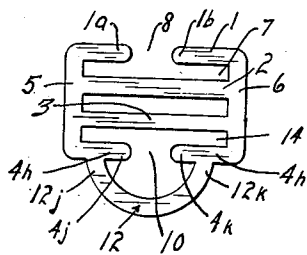
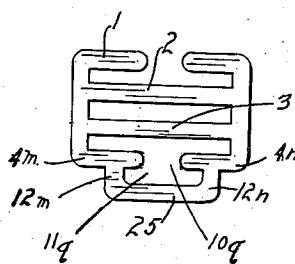


Fig. 7.



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BUCKLE

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5 Claims. (Cl. 24-73)

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This invention relates to buckles, and particularly to slide or take-up buckles for lingerie straps and the like.

The common buckles used for adjusting the straps of slips, brassières, and other types of lingerie comprises a series of crossbars connected by a pair of end-bars. The crossbar which is normally uppermost in use has a central portion cut away to receive the longer end of the main strap, and the lowermost crossbar commonly serves as the bearing-bar for the shorter strap which is commonly attached to the front of the article of lingerie. This type of buckle is eminently satisfactory in a number of respects, but great difficulty is experienced, particularly after some use, in the shorter or lower strap working to the right (or the left) and the main or upper strap working to the left (or the right) so that the buckle works into a diagonal position, with the straps gathered in the corners of the buckle instead of fitting freely centrally thereof. This results not only in undesirable binding action which affects the ease of manipulation and the wearing qualities of the strap, but also makes it much easier for the upper strap, which is now gathered entirely to one side of the cut in the upper bar, to slip out thru this cut and come loose altogether.

Various proposals have been made to avoid this difficulty. Among these are the formation of the upper edge of the lower bar with saw-teeth or other protuberances to prevent the shifting of the lower strap. This has the obvious disadvantage of a tendency to tear the lower strap or quickly wear it out. Another is the curving of the lower bar downwardly so that, in effect, it is a curved continuation of the two end bars. This, however, tends to encourage the lower strap to slide to the right or left and when in this position to draw the buckle into a diagonal position with the disadvantages mentioned above. These difficulties are involved even in an arrangement wherein the curve is bent inwardly and upwardly somewhat at two points each spaced about one-third of the distance from the end of the curve. Another proposal is to append to the lower bar a circular tab with a central hole or eyelet thru which the lower strap is threaded. This is sometimes satisfactory when the lower strap is narrower than the upper strap, but it is undesirable from both the standpoints of strength and esthetic appeal. If a wide strap is used there are difficulties in threading, and also in flexibility in action since there is no possibility of any portion of the strap extending upwardly even under unusual stresses.

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With the foregoing and other considerations in view of the present invention contemplates the provision of lower-strap-receiving means which combines the advantages of the modifications of the lower bar mentioned above but eliminates the disadvantages. In accordance with the invention the lower bar is centrally split, and there extends downwardly and outwardly therefrom a curved bar which provides an opening which is wider than the break in the lower bar but narrower than the channel above the bar. The opening is connected with the channel by the break so that the strap may be slid between the two. The opening, in which the lower strap may be normally retained and its pull centered, may be in the shape of a broken ellipse, a broken circle, or other suitable curved shape. The width of the opening should be not substantially more than two-thirds the distance between the side bars nor substantially less than one-third this distance. It is desirably twice as wide as the distance between the inner ends of the split lower bar. It should also be centered.

Another difficulty that has been present in lingerie take-up buckles is that the upper strap tends to work loose when subjected to a continuous pulling action. In order to avoid this it has been proposed to deform one or more of the crossbars to extend downwardly the ends of the split upper bar, and to make other modifications. These have, however, all had one or more drawbacks such, for example, as binding action so great as to interfere with easy adjustment and tendencies to tear and undue wear.

In accordance with the present invention in certain of its more specific aspects there are provided outwardly and/or inwardly extending nubs which tend to prevent the upper strap from slipping loose without the objectionable characteristics just noted.

The invention accordingly comprises an article of manufacture possessing the features, properties, and the relation of elements which will be exemplified in the article hereinafter described and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings, in which:

Figure 1 is a front view of one form of buckle embodying the invention;

Fig. 2 is a similar view showing the buckle in use;

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Fig. 3 is a rear view of a modified form;
Fig. 4 is a front view of another modification;
Fig. 5 is a front view of still another modification;

Fig. 6 is a front view showing a modified form of centering retainer opening; and

Fig. 7 is a similar view of an additional modification.

The buckle exemplified in Fig. 1 comprises crossbars 1, 2, 3, and 4 and side bars 5 and 6. The upper bar 1, below which is a channel 7, is split into portions 1a and 1b to provide therebetween a central slot 8, and the lower bar 4 is split into portions 4a and 4b to provide therebetween a central slot 10 leading to an opening 11 formed by a curved bar 12 which connects the inner ends 4c and 4d of the lower bar. As will be seen the ends 12c and 12d of the lower bar 12 extend outwardly and downwardly from the ends 4c and 4d of the bar 4, and the bar 12 curves around to provide a lower portion which permits free lateral sliding of a strap in the opening 11, with increasing resistance as the strap mounts the sides of the bar 12, and major resistance as it approaches the portions 12c and 12d and 4c and 4d. This resistance, however, ceases when thru some unusual condition the pull approaches a right angle and in this situation the lower strap may slip thru the slot 10 into the channel 14 between the bars 3 and 4.

As will be seen from Fig. 2 the upper strap 15 is threaded under the bar 1, over the bars 2 and 3, beneath and behind the bar 3, in front of the bar 2, and again behind the bar 3. The strip 15 is readily removable therefrom for adjustment by being slipped thru the channel 7. The lower strap 16 is threaded into channel 14 between the bars 3 and 4, whence it can be easily crowded to one side so as to slide thru the slot 10 and into the opening 11 in which it is held centered by the curved bar 12. Because of this centering action there is no tendency for the buckle to be drawn into a diagonal position in which the upper strap can slide to the right or the left end of the channel 7 between the bars 1 and 2. At the same time the lower strap will be prevented from sliding up into the channel 14 by the ends 4c and 4d, and can only slide thru the slot 10 when it is desired to unthread it or when it is subjected to such unusual pull that strains will be relieved rather than increased by such action.

In order to hold the upper strap 15 against slipping, but without undue binding or tearing action, there are desirably provided, as exemplified in Fig. 3, rounded nubs 21 and 22 protruding rearwardly from the inner surface of the portions 1d and 1e of the upper split bar 1c. These nubs desirably and as shown are provided at the inner ends of the split bar 1c. An additional variation also exemplified in this figure is an increase in the vertical cross-sectional extent of the split bar 4e, and the decrease in the width of the slot 14e.

There are also desirably provided one or more rounded nubs on the front surface of that bar which is just below the split upper bar. As shown in Fig. 4 two such nubs 23 and 24 are provided on the crossbar 2f. In this exemplification the width of the slot 14f is similar to that of the slot 14e, but the vertical cross-sectional extent of the split bar 4 is as shown in Fig. 1.

Preferably nubs are provided on both of the two uppermost bars as shown in Fig. 5. Nubs 21g and 22g extend rearwardly from the split

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upper bar 1g and nubs 23g and 24g extend forwardly from the bar 2g. These nubs are smooth-surfaced and desirably have a greater lateral extent than protruding extent.

It is not essential that the bar providing the opening for the centering of the lower strap be curved inwardly at its upper ends. It can in some instances extend directly downwardly or even inwardly and downwardly provided it is attached to the lower bar at points outwardly of the inner ends of the lower bar. Such an arrangement is shown in Fig. 6, wherein the portions 12j and 12k extend downwardly and slightly inwardly from points 4j and 4k which are spaced outwardly of the inner ends of the split lower bar 4h.

The form shown in Fig. 7 has a somewhat differently-shaped strap-centering means. In this arrangement, the portions 12m and 12n extend straight downwardly from points intermediate the outer and inner ends of the bar-ports 4m and 4n, and are joined by a straight base bar 25 to enclose (except for the opening 10g) the space 11g.

Since certain changes may be made in the above article and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A buckle construction for joining upper and lower straps and comprising a pair of side bars and a series of spaced transverse bars, a transverse bar at at least one end being divided to provide a generally central slot which opens in a direction generally parallel with the side bars and which has a substantially permanent non-expandable width, and enclosure means extending outwardly from the portion of said last-mentioned bar at points spaced from said slot and spaced from said side bars and converging to provide an opening which spreads out laterally from said slot along the parts of said last-mentioned bar which lie at each side of said slot, said opening having a maximum extent of at least twice the width of said slot in a direction parallel to said width and not substantially more than two-thirds nor less than one-third the distance between the side bars at said slot in said direction and having a greater extent in said direction than in a direction perpendicular to said direction.

2. A buckle as set forth in claim 1 wherein the enclosure means diverges from said slot in smooth curves.

3. A buckle as set forth in claim 1 wherein the enclosure means extends outwardly at a sharp angle from said last-mentioned bar.

4. A buckle construction for joining upper and lower straps and comprising a pair of side bars and a series of spaced transverse bars, the transverse bars at the ends of said series being centrally divided to provide slots which open in a direction generally parallel with the side bars and which have a substantially permanent non-expandable width, and enclosure means extending outwardly from the portion of one of said last-mentioned bars at points spaced from one of said slots and spaced from said side bars and converging to provide an opening which spreads out laterally from said one of said slots along the parts of said one of said last-mentioned bars which lie at each side of said one of said slots,

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said opening having a maximum extent of at least twice the width of said one of said slots in a direction parallel to said width, but less than the distance between the side bars, and nubs on the other of said end bars at each side of its slot.

5. A buckle construction for joining upper and lower straps and comprising a pair of side bars and a series of spaced transverse bars, the transverse bars at the ends of said series being centrally divided to provide slots which open in a direction generally parallel with the side bars and which have a substantially permanent non-expandible width, and enclosure means extending outwardly from the portion of one of said last-mentioned bars at points spaced from one of said slots and spaced from said side bars and converging to provide an opening which spreads out laterally from said one of said slots along the parts of said one of said last-mentioned bars which lie at each side of said one of said slots, said opening having a maximum extent of at least twice the width of said one of said slots in

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a direction parallel to said width, but less than the distance between the side bars, nubs on the other of said ends bars at each side of its slot, and aligned smooth nubs on the adjacent transverse bar.

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