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ADJUSTABLE SHOULDER STRAP AND BUCKLE ASSEMBLY

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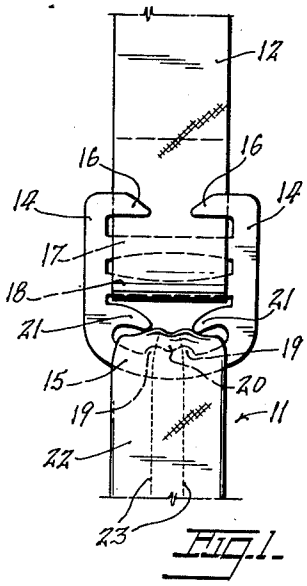


Fig. 1

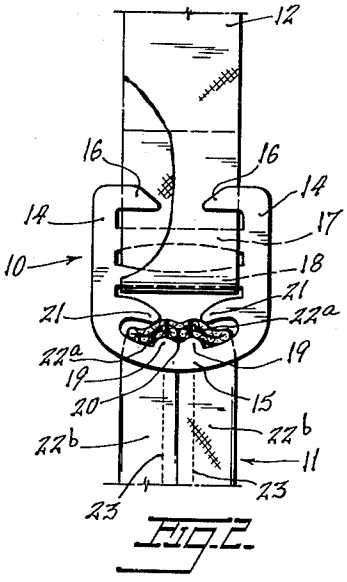


Fig. 2

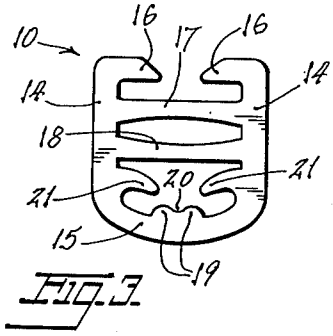


Fig. 3

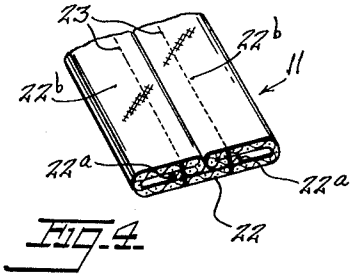


Fig. 4

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ADJUSTABLE SHOULDER STRAP AND BUCKLE ASSEMBLY

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1 Claim. (Cl. 24—200)

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This invention relates to new and useful improvements in an adjustable shoulder strap assembly for articles of lingerie.

It is commonplace to employ one-piece buckles for adjustably joining the adjacent ends of the shoulder straps of articles of lingerie so that the wearer of the garment can adjust the length of the shoulder straps to properly position the garment on the body. Such buckles usually comprise a series of cross bars extended between spaced vertically extended side arms and a lower arm extended between the side arms below the cross bars. The upper end of the lower strap of the lingerie is looped over the lower arm and the lower end of the upper strap engaged adjustably about the cross bars so that the length of the strap assembly can be adjusted by sliding the upper strap relative to the cross bars of the buckle. Such strap assemblies have been found objectionable primarily due to the fact that with continued use the lower strap works itself to the right or the left of the lower arm with the upper strap working itself reversely to the right or the left of the cross bars so that the buckle assumes a diagonal position with relation to the straps. In that position, the straps become bunched in diagonally opposed corners of the buckle making it difficult if not entirely impossible to further adjust the position of the upper strap and resulting in undesirable binding and possible weakening of the straps resulting in eventual breaking thereof.

The present invention has as its primary purpose the formation of a novel shoulder strap assembly having a relationship between the bottom arm of the buckle and the lower strap whereby the lower strap is retained from moving to the right or left side of the bottom arm maintaining the buckle in its upright position in which the upper strap will also maintain a fixed adjusted position relative to the cross bars of the buckle.

Still further, the present invention proposes forming the buckle to have a downwardly arched bottom arm having upwardly extended projections along its upper edge leaving a recess between the projections and a pair of downwardly and inwardly inclined lower bar portions with the lower strap constructed to be passed over the bottom arm to be retained by the projections and lower bar portions against lateral shifting relative to the bottom arm.

Another object of the present invention proposes forming the lower strap with a central longitudinally extended thickened portion which when the strap is engaged over the bottom arm depends

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into the recess to retain the strap against lateral movement to either end of the bottom arm.

As a further object, the present invention proposes arranging the lower bar portions so that their bottom ends will bear against the top of the lower strap, where it passes over the bottom arm, on either side of the central thickened portion in a manner to cooperate with the projections in maintaining the thickened portion from moving out of the recess.

It is a further object of the present invention to construct a shoulder strap assembly of the type described which is simple and durable, which is effective for its intended purposes and which can be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claim in which the various novel features of the invention are more particularly set forth.

On the accompanying drawing forming a material part of the present disclosure:

Fig. 1 is an elevational view of the strap assembly of the present invention shown with a portion of the upper strap broken away.

Fig. 2 is an elevational view similar to Fig. 1, but with the front portion of the lower strap broken away.

Fig. 3 is an elevational view of the buckle per se.

Fig. 4 is a sectional perspective view of a portion of the lower strap of the present invention.

The strap assembly for lingerie, according to the present invention, includes a one-piece buckle 10 for insertion between the upper end of a lower strap 11 and the bottom end of an upper strap 12. The straps 11 and 12 are preferably the end aligned portions of the shoulder strap of an article of lingerie—as a slip, brassière or the like.

The buckle 10 is stamped from a rigid piece of metal or the like and includes a pair of spaced vertically extended side arms 14. The bottom ends of the side arms 14 are joined by a bottom arm 15 which is slightly downwardly arched. An intermediate portion of the lower strap 11 is passed over the top edge of the bottom arm 15, as shown in Figs. 1 and 2, and has its free ends secured to the top edge of the article of lingerie, not shown.

The top of the buckle 10 is substantially closed by a pair of inwardly extended end aligned upper bar portions 16. The upper bar portions 16 are extended inward from the top ends of the side

arms 14 of the buckle. Vertically spaced transverse bars 17 and 18 are extended between the inner sides of the side arms 14 below the upper bar portions 16.

The upper edge of the bottom arm 15 of the buckle 10 is formed intermediate of its ends with a pair of spaced upwardly extended convex projections 19.

Between the projections 19, the bottom arm 15 has a slight recess 20. Below the lowermost cross bar 18, the inner sides of the side arms 14 of the buckle 10 are formed with downwardly and inwardly extended lower bar portions 21. The bottom ends of the lower bar portions 21 are spaced slightly above the outer sides of the projections 19, as best shown in Fig. 3.

The lower strap 11 is of a particular formation that it is retained by the projections 19 and the lower bar portions 21 against movement toward either end of the bottom arm 15. The specific formation of the lower strap 11 can be best understood from Fig. 4. Specifically, the lower strap 11 is formed of an elongated strip of cloth material 22 of a width more than twice but less than three times the final width of the lower strap 11. Preferably, the strip of cloth material 22 is of a width approximately two and one-half times the final width of the lower strap 11 and is a piece of the same material as that used for making the particular piece of lingerie to which the strap assembly is to be secured. Conventional shoulder strap ribbon is not used for making the lower strap 11. The length of the strip of cloth material 22 is controlled by the preferences of the manufacturer.

In forming the lower strap 11 from the strip of cloth material 22, longitudinal side edge portions 22^a are folded inward along one side of the strip of cloth material. The longitudinal side edge portions 22^a are of a width less than one-half the final width of the lower strap 11 and preferably of a width about one-fourth the final width of the lower strap 11.

Portions 22^b of the strip of cloth material 22, inward of the side edge portions 22^a, are then folded inward with the side edge portions against the said one side of the strip of cloth material so that the side edge portions 22^a become sandwiched between the portions 22^b and the main length of the strip of cloth material 22. The latter portions 22^b are of a width corresponding to one-half the final width of the lower strap 11 so that the folds between the side edge portions 22^a and the portions 22^b abut one another along the longitudinal center of the lower strap locating the side edge portions 22^a on opposite sides of the longitudinal center.

From a careful consideration of Fig. 4, it will be noted that the lower strap 11 is of three-ply thickness along its longitudinal center providing the lower strap with a centrally located longitudinally extended thickened portion. With the side edge portions 22^a being of a width about one-fourth the final width of the lower strap 11, it will be appreciated that the thickened portion of the lower strap will be of a width approximately one-half the width of the lower strap and located centrally of the longitudinal side edges thereof.

The strip of cloth material 22 is maintained in its folded condition by parallel lines of stitches 23 engaged through the three-ply thickness of the strip on opposite sides of the abutting fold lines of the side edge portions 22^a and the portions 22^b.

As can be determined from Figs. 1 and 2, the effective length of the bottom arm 15 of the one-piece buckle 10 is just slightly less than the width of the lower strap 11 so that the lower strap passes over that bottom arm with some slight bunching. However, that bunching is taken up by the deformation of the lower strap 11 by the N-shaped projections 19 so that all of the effective width of the lower strap is in frictional contact with the top edge of the bottom arm 15.

Deformation of the lower strap 11 by the projections 19 reduces the effective width of the lower strap 11, where it passes over the bottom arm, to the length of that bottom arm.

With the lower strap 11 passing over the bottom arm 15 of the buckle 10, the central thickened portion of the lower strap formed by the side edge portions 22^a depends into the recess 20 between the projections 19, as best shown in Fig. 2, to retain the lower strap against lateral movement on the bottom arm. The lower ends of the lower bar portions 21 are spaced from the outer sides of the projections 19 a distance slightly less than the thickness of the thickened central portion of the lower strap 11. Thus, those bottom ends of the lower bar portions 21 bear against the top face of the lower strap 11, where it passes over the bottom arm 15, on opposite sides of the central thickened portion of the strap. It will be appreciated, that the projections 19 and the lower ends of the lower bar portions 21 combine in a novel manner to retain the central thickened portion of the lower strap 11 from moving in either direction out of the recess 20. With the thickened portion of the lower strap 11 retained against movement out of the recess 20 it is impossible for the lower strap to assume a bunched position at either end of the bottom arm 15 and so the buckle 10 is maintained in the end aligned vertically extended position shown in Figs. 1 and 2.

As shown especially in Fig. 1, the lower end of the upper strap 12 is first passed behind the upper bar portions 16 then beneath the bottom edge of the lower cross bar 18, then upward between the adjacent edges of the cross bars 17 and 18. The free end of the upper strap 12 is then passed upward in front of the cross bar 17 and out behind the rear face of the portion of the upper strap which passes behind the upper bar portions 16.

With that arrangement, the effective length of the upper strap 12 can be adjusted to adjust the total length of the shoulder strap assembly to support the article of lingerie at the desired position on the body. The upper strap 12 is formed of a single ply of the usual shoulder strap ribbon or can be made of a single ply of the material used for forming the article of lingerie, if desired.

With the buckle 10 retained in its vertical position by the bottom strap 11, as described supra, it will be appreciated that the upper strap 12 will be retained against lateral shifting relative to the cross bars 17 and 18 assuming a bunched position at one side or the other of the buckle.

From the foregoing description, it is apparent that the present invention proposes the construction of an improved shoulder strap assembly in which engagement of the specially constructed lower strap 11 with the bottom arm 15 of the buckle 10 functions to maintain the buckle in the proper upright position in which lateral shifting of the upper strap 12 will be precluded. Therefore, all binding of the straps 11 and 12 with

the buckle is eliminated so that the upper strap 12 is free for linear adjustment relative to the buckle 10 to vary the operative length of the shoulder strap assembly.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claim.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

In combination with a one-piece buckle having side arms and a connecting bottom arm, a pair of lower bar portions spaced above the said bottom arm, each of said portions extending inwardly from one of the said side arms toward the other lower bar portion, a pair of projections interconnected by a recess to form an N-shaped projection extending upwardly from said connecting bottom arm spaced from the lower bar

portion, the adjacent, free ends of said lower bar portions overlying said projections, and a strap of a single piece of material; said strap consisting of a main lower length, an upper length folded over said lower length and terminating at the center thereof, said upper length being folded under to form a side edge portion centrally positioned between said upper and lower lengths, and terminating short of the midpoint thereof, said upper, center and lower lengths being parallel to each other, said strap being inserted in said buckle and gripped between said bar portions and projections to permit ready adjustment.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,140,164	Moffatt	Dec. 13, 1938
2,303,004	Stein	Nov. 24, 1942
2,473,209	Lombardi	June 14, 1949