Feb. 19, 1952 S. GRISHMAN 2,586,159

ADJUSTABLE STRAP BUCKLE

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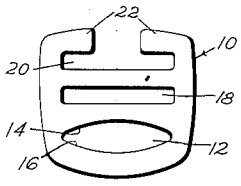


FIG. 1



FIG. 2

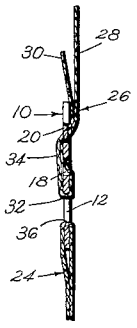


FIG. 4

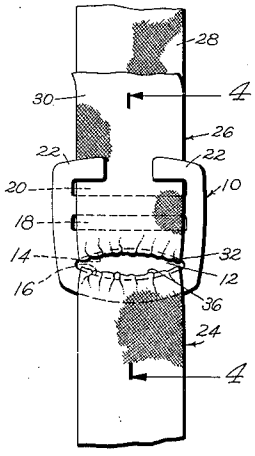


FIG. 3

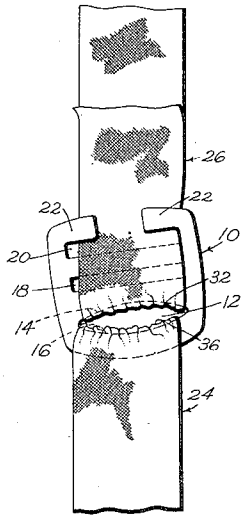


FIG. 5

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ADJUSTABLE STRAP BUCKLE

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1 Claim. (Cl. 24—200)

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This invention relates generally to buckles and more particularly to buckles for adjustable straps.

In the past, the buckle aperture, in which the two portions of an adjustable strap were bent back in confronting relationship, was defined by generally rectilinear edges or boundaries. Consequently, the confronting bent portions of the strap were generally straight edges. When the strap was subjected to a pulling force or tension the confronting strap portions tended to creep to the opposite ends of the buckle aperture and crowded at their bends around the edges of the generally rectangular aperture, into a folded condition near one or the other of the opposite ends, respectively, of these apertures. This resulated in excessive wear of the folded portions of the straps, causing tears and breaks therein. Moreover, an additional disadvantage resided in the fact that the disengaged parts of the strap, at its confronting portions in the prior buckle apertures, presented a particularly unsightly appearance.

Therefore, one of the objects of this invention is to avoid the disadvantages and deficiencies inherent in prior buckles for adjustable straps.

Another object is to produce a buckle that will maintain the confronting strap-edge portions in substantially correct alignment regardless of the tension applied to the strap.

A further object is to produce a buckle of simple construction which will materially increase the life of the straps associated therewith.

In order that my invention may be more fully understood, it will now be described, by way of example, with reference to the accompanying drawing in which:

Fig. 1 shows an improved buckle of the present invention;

Fig. 2 is an end view of the buckle shown in Fig. 1;

Fig. 3 is a front view of a buckle and strap of the invention, in assembled relationship;

Fig. 4 is a section taken along line 4—4 of Fig. 3; and

Fig. 5 shows a buckle and strap of the invention, with an unevenly distributed pulling force applied to the strap.

Referring now to Figure 1, in accordance with my invention buckle 10, which may be formed of metal, plastic, or any other suitable material is provided with an arcuate aperture 12 bounded by curved confronting buckle surfaces 14 and 16, locking aperture 18 and guide aperture 20. Inturned prongs 22, having confronting end portions, are provided at the top of the buckle and

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define a boundary of aperture 20. The strap may be formed of fabric, leather, plastic, or any other suitable material, and comprises upper portion 26 and lower portion 24. The strap is of the adjustable type, for example, a shoulder strap for an undergarment. As is well known in the art, one end 28 of upper portion 26 is secured to part of an undergarment (not shown), or other object. The other end 30 is free for adjustably positioning the upper strap portion in the buckle. When threaded into buckle 10, upper strap portion 26 is looped through aperture 12 and bent back to form an edge portion 32 encompassing buckle surface 14. As shown in Fig. 4, portion 26, beginning at end 28, passes from the rear of the buckle through aperture 20, to the front thereof, then through aperture 18 to the rear of edge portion 32, and through aperture 12, to the front of the buckle. Continuing from edge 32 strap portion 26 overlaps itself at 34 and continues in overlapped condition as it passes to the rear of the buckle through aperture 20. Prongs 22 serve to guide end 30 to the rear of the buckle. The manner in which buckle 10 is adjusted along the strap and locked, whereby the strap is made "shorter," as the buckle is positioned closer to fixed end 28, and is made "longer," as the buckle is positioned nearer free end 30, is well known in the art. Lower strap portion 24 is looped through aperture 12 to form edge portion 36 encompassing interior buckle surface 16. The lower strap portion is affixed to a portion of a garment (not shown) or other object, as is well known in the art.

It will be noted that folded strap edges 32 and 36 are in confronting relation in the buckle and assume the shape of confronting arcuate surfaces or edges 14 and 16. Although the edges 14 and 16 are illustrated as having an equal degree of curvature, it will be understood that it is within the scope of the invention to provide a buckle in which only the edge 14 is curved, the curvature being concave. It will also be understood that the degree of curvature of surface or edge 14 may vary.

In operation, when normal pulling pressure or tension is exerted on the strap, the resulting force will tend to be evenly distributed over the longitudinal extent of arcuate surfaces 14 and 16 to maintain confronting strap edges 32 and 36 in correct alignment, thereby preventing crowding of the strap at the ends of aperture 12. In the event of the application of an abnormal or unevenly distributed pulling pressure to the strap, such that the buckle becomes displaced, as in Fig. 5, the tendency of curved surfaces 14 and 16 to

evenly distribute the force resulting from the unevenly applied pressure, will prevent undue crowding at the aperture ends. It will be noted that under these circumstances, strap portions 32 and 36 will remain in substantially satisfactory original alignment, as in Fig. 5, so that only a very slight crowding or folding of these portions will occur.

Although the buckle and strap have been described in connection with clothing, it is not intended to limit the use and application thereof, thereto. It will be understood that the invention is applicable wherever adjustable straps are used.

I claim as my invention:

A buckle for an adjustable strap connection, said buckle having two laterally spaced bars intermediate the opposite ends thereof for engaging the folded portion of an adjustable loop of said strap connection, said buckle having at one end thereof a third bar for engaging another folded strap portion of the strap connection, said third bar and one of said two bars having confronting edges defining an opening to receive said two strap portions, said opening-defining edges being concave with their curvatures disposed oppositely with reference to each other so that the folded strap portions which are received in said opening engage said concave edges of the bars and have concave folded edges at their respective fold lines conforming to the curvature of said bar edges, respectively, so that they remain substantially co-extensive with said edges in various laterally displaced positions of the two strap portions, the opposite end of said buckle having spaced confronting parts which, together with one of said first mentioned bars are adapted to hold said loop adjustably in position, said spaced confronting parts defining an aperture to facilitate the insertion of the strap loop in the buckle.

SIMON GRISHMAN.

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