May 18, 1948. W. H. CHURCHILL 2,441,930

STRAP-ATTACHING BUCKLE

Filed Jan. 16, 1945

Fig. 1.

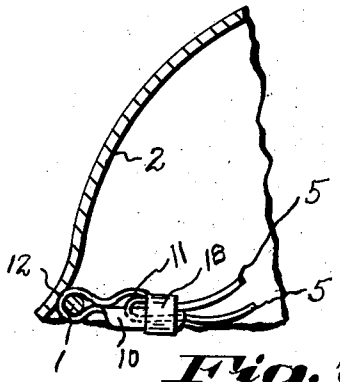


Fig. 2.

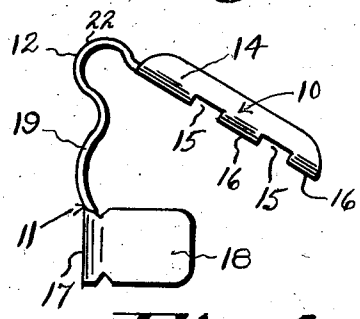


Fig. 3.

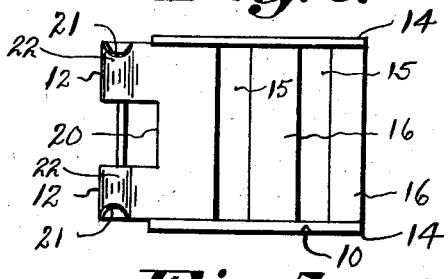


Fig. 4.

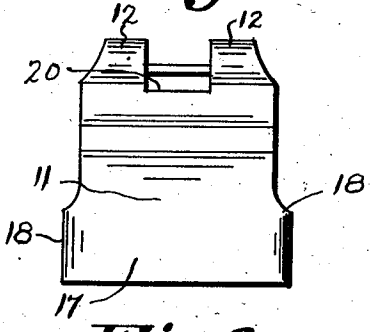


Fig. 5.

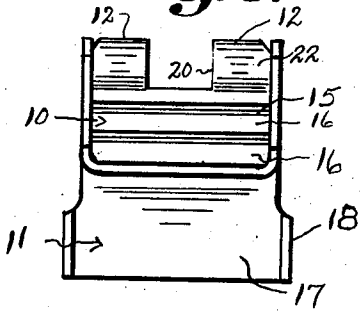


Fig. 6.

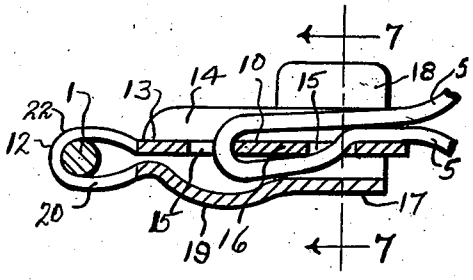


Fig. 7.

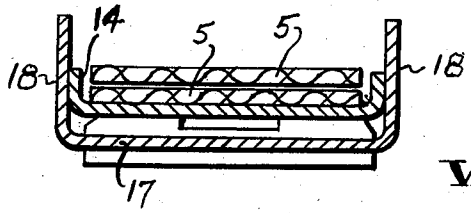
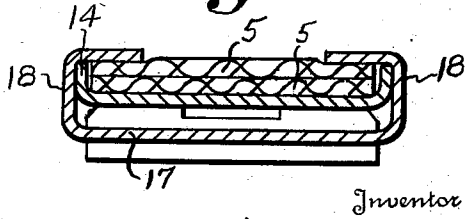


Fig. 8.



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STRAP-ATTACHING BUCKLE

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5 Claims. (Cl. 24—73)

1

The present invention relates to improvements in buckles and more particularly to buckles for attaching a flexible strip, strap or the like to a support or anchoring member.

In many installations flexible strips or straps are employed as ties or fastening means, and quite frequently one end of the strap is permanently attached to a fixed support or part of a garment. For example, with military helmets a flexible strap is employed as a retaining member, one end of which is looped around an anchor, for example a bail on the helmet, and secured thereto by suitable means as by rivets passed between opposed layers of the strap. When these straps break, replacement thereof is not readily effected, due to the necessity of permanently securing the opposite folds of a replacement strap, as by rivets or like securing means.

My present invention provides a new and improved buckle to adjustably receive and grip the end of a strap and provides means for ready attachment to an anchoring element or bar.

More particularly the invention aims to provide an improved adjustable strap-attaching member in the nature of a repair clip, permitting the ready and secure connection of a strap to a bail or loop-like anchor, without the necessity of permanent fastenings such as rivets, and the like.

Other aims and objects of the invention will be apparent from a consideration of the accompanying drawings and annexed specification illustrating and describing a preferred form of the invention.

In the drawings

Fig. 1 is a fragmental sectional view of a portion of a military helmet illustrating in elevation, my improved buckle and a portion of a strap attached thereto;

Fig. 2 is a side elevation of a buckle embodying one form of my invention, and illustrated in its normal unclamped position;

Fig. 3 is a top plan view of the form of buckle shown in Fig. 2;

Fig. 4 is an end elevation of the buckle as viewed from the left hand side of Fig. 2;

Fig. 5 is an end elevation of the buckle as viewed from the right hand side of Fig. 2;

Fig. 6 is an enlarged detail longitudinal sectional view of the buckle shown in Fig. 2 with a portion of a strap attached, and illustrating the relative position of the parts immediately after folding the buckle about the bail and before final clamping of the parts together;

Fig. 7 is a detail transverse sectional view of

2

the buckle as illustrated in Fig. 6, and as taken on the line 7—7 of Fig. 6; and

Fig. 8 is a transverse sectional view, similar to Fig. 7, but illustrating the position of the parts of the buckle in the final clamped position.

In the accompanying drawings I have illustrated one form of buckle of the invention for the attachment of a strap 5 to the bail 1 of a military helmet 2, though it will be understood that the invention is equally applicable to other installations in which a strap is to be looped around and secured to a post, bail or other suitable anchoring part.

In the illustrated installation, the helmet 2 may be of any approved type, for example a combat helmet of metal having a strap-receiving bail or anchor 1 suitably attached thereto or formed as a part thereof. The helmet strap 5 conveniently has a fastener member (not shown) attached to one end. In prior installations an end of the strap has been looped around the bail and secured in place by suitable means, for example rivets passed through opposed layers of the strap.

According to the invention, the end portion of the strap 5, to be anchored to the installation or support, is adjustably secured against slippage to a buckle, which is formed with a readily bendable clamping portion adapted to underlie the strap-receiving portion of the buckle and be clamped thereto and to form therewith a hinge loop for connection with the anchoring post or bail.

In one preferred form of the invention, the buckle comprises an elongated member of suitable material, for example sheet metal, presenting a slotted strap-receiving portion 10, a clamping portion 11 and a readily deformable hinge portion 12 intermediate and connecting the portions 10 and 11.

The strap-receiving portion 10 of the buckle may be of any approved type to adjustably receive and clamp without slippage a strap end. Preferably, and in the illustrated embodiment it comprises a frame body plate portion 13 having side bars 14, which may be formed as upstanding flanges integral with the plate portion 13. The plate is provided with one or more transverse strap-receiving slots 15 presenting one or more transverse bars 16. The end of the strap 5 to be anchored may thus be passed between the side bars 14 through the innermost slot 15 under the innermost cross bar 16, through the outermost slot 15 and over the outer cross bar, as illustrated in Fig. 6 to adjustably secure the strap to the buckle against slippage.

The clamping portion 11 of the buckle may be formed with a cover portion 17 to cover at least a part of the strap-receiving portion, and preferably the portion of the strap passed through and adjacent to the outermost slot 15. The cover portion 17 is preferably of slightly greater width than the strap-receiving portion and is provided with side wings 18 adapted to embrace the side flanges 14 as the portions 10 and 11 are folded together. The wings 18 are preferably of greater length than the depth or height of the side flanges so as to provide portions capable of being bent over the strap 5 into clamping engagement therewith as shown in Fig. 8.

In cases where it is desired to provide a clamping portion having a cover 17 to completely underlie the whole of the strap-receiving portion, the cover may be bowed outwardly as at 19 to accommodate the fold of the strap, as is illustrated in Figs. 1 and 6.

The hinge portion 12 connecting the strap-receiving portion 10 and the clamping portion 11 is preferably arcuate shaped as shown in Fig. 2, to provide a loop or hinge adapted to surround a pin, post, bail or other suitable anchor 1. The hinge portion 12 is weakened, as by cutting out an opening 20 centrally thereof and/or also side notches 21 to sufficiently weaken the bight as to localize bending in the central portion thereof.

From the above it will be apparent that the invention provides a very simple attaching buckle for securing a strap to an anchor. The buckle is intially of the form shown in Fig. 2, in which condition the strap end may be applied thereto in the manner shown in Fig. 7. This permits adjustment of the strap length as desired, and slippage is prevented because the end portion of the strap is gripped between another portion of the strap and the outermost cross bar 16, whenever tension or pull is applied to the strap.

The buckle may be fitted around the post or bail 1 constituting the anchor with the anchor within the loop portion 22 of the hinge 12. The clamping portion 11 may then be pressed against the assembled strap and strap-receiving portion 10 as shown in Figs. 6 and 7 and thereafter the wings 18 may be bent inwardly over the side flanges 14 into gripping engagement with the strap 5 as shown in Fig. 8. In this way the strap is securely clamped to the strap-receiving portion 10 between the cover 17 and inwardly folded wing ends.

The invention provides a new and improved strap-attaching clip or buckle, insuring long life to a strap because the metal loop of the buckle surrounding the bail removes wear from a bight portion of the strap. Furthermore, in the event of breakage of the strap, a new one may readily be replaced on the buckle, simply by opening the buckle and applying a new strap to the strap-receiving portion, and thereafter reclosing the buckle.

It is to be understood that the invention is not restricted to the particular form of the invention shown and described, as the scope of the invention is best defined in the appended claims.

I claim:

1. A strap-attaching buckle comprising an elongated strap-receiving portion formed with transverse slots providing transverse bars about which a strap may be folded and adjustably attached, a clamping portion adapted to engage at least one fold of a strap attached to the strap-receiving portion, said clamping portion for receiving a portion of said strap, and an intermediate bight portion connecting said strap-receiving and clamping portion and providing a loop for loosely encompassing a part to which the buckle is to be attached.

2. A strap-attaching buckle comprising an elongated strap-receiving portion formed with transverse slots providing transverse bars about which a strap may be folded and adjustably attached, said strap-receiving portion having spaced outwardly extending flanges for receiving the strap therebetween, a clamping portion adapted to engage opposite folds of a strap attached to the strap-receiving portion, and an intermediate bight portion connecting said strap-receiving and clamping portion and providing a loop for loosely encompassing a part to which the buckle is to be attached.

3. A strap-attaching buckle comprising an elongated strap-receiving portion formed with transverse slots providing transverse bars about which a strap may be folded and adjustably attached, a clamping portion adapted to engage at least one fold of a strap attached to the strap-receiving portion in regions adjacent the outer slot and bar, and an intermediate bight portion connecting said strap-receiving and clamping portion and providing a loop for loosely encompassing a part to which the buckle is to be attached.

4. A buckle for attaching a strap to an anchor member comprising an elongated metal member having an intermediate hinge portion, one end portion of said member being transversely slotted and providing a strap-receiving portion to which a strap may be adjustably connected and the other end member adapted to be folded relatively to said strap-receiving portion and engaged therewith to clamp a strap thereto, said intermediate hinge portion providing a loop beyond the strap-receiving portion to encompass an anchor member.

5. A buckle for attaching a strap to an anchor member, comprising an elongated metal member having an intermediate hinge portion and opposed angularly disposed strap-receiving and clamping end portions, said strap-receiving portion having a plurality of spaced cross bars around which the end of a strap may be woven to adjustably connect a strap thereto, said clamping portion being foldable into overlapping engagement with said strap-receiving portion, and angular extensions on said clamping portions, said portions being bendable over the strap-receiving portion whereby portions of the clamping portion may be disposed on opposite sides of the strap-receiving portion for engaging a strap to be attached thereto.

WILMER H. CHURCHILL.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
94,042	Sturges	Aug. 24, 1869
303,103	Anderson	Aug. 5, 1884
500,637	Warner	July 4, 1893
507,002	Harris	Oct. 17, 1893
1,636,121	Brauns et al.	July 19, 1927
1,732,904	Miller	Oct. 22, 1929