

Dec. 15, 1936.

F. R. REUTTER

2,064,447

SLIDE BUCKLE

Filed Dec. 13, 1935

Fig. 1.

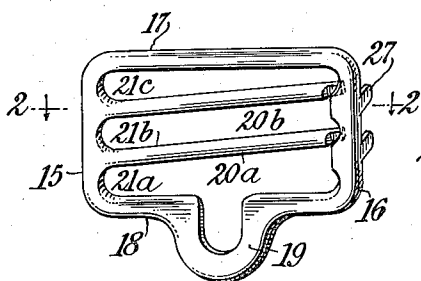


Fig. 3.

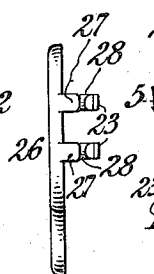


Fig. 4.

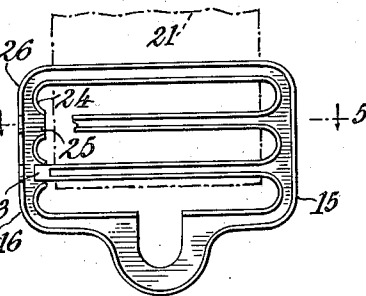


Fig. 2.



Fig. 5.

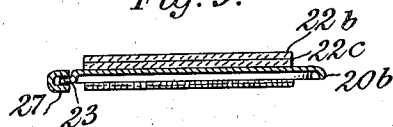


Fig. 6.

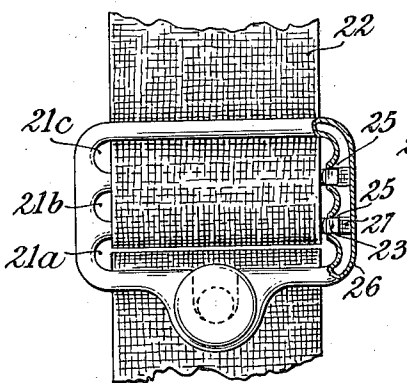


Fig. 7.

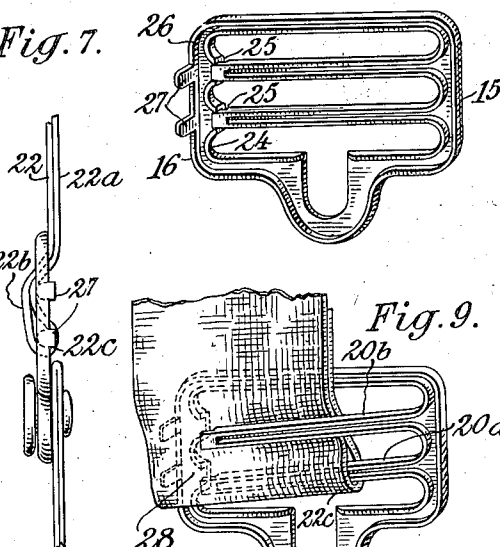
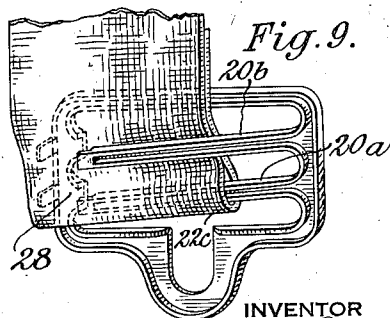


Fig. 9.



INVENTOR
Frederick R. Reutter
BY
Irwin, Myers & Mauley
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,064,447

SLIDE BUCKLE

Frederick R. Reutter, Waterbury, Conn., assignor
to Scovill Manufacturing Company, Waterbury,
Conn., a corporation of Connecticut

Application December 13, 1935, Serial No. 54,214

6 Claims. (Cl. 24—200)

This invention relates to buckle frames which are adapted to frictionally engage a strap member so that the effective length of the latter may be adjusted to meet individual conditions.

5 The general form of the buckle is not new, and generally comprises a frame having a plurality of substantially parallel cross bars forming slots through which a strap may be threaded by passing it under the first bar, over the next
10 two, then under and over the bars, in such manner that one part of the strap overlies another part thereof and a cross bar, to provide frictional engagement therebetween. Now, as can readily be understood, this threading is essentially a hand operation; and requires an appreciable amount of time even where the operator
15 is quite dexterous.

With such an arrangement it is evident that the buckle may readily be moved lengthwise of the strap to adjust the effective length of the latter. However, at any adjusted position, tension applied to the strap tends to force the overlying portion thereof against the underlying portion and the cross bar, thereby to hold the parts in their adjusted positions.
20

Such buckles are most frequently used as a means for attaching the end of a shoulder strap to the bib portion of an overall garment, or for attaching one end of a belt to the other end thereof. In the manufacture of such garments, or belts, the buckles, of course, are applied at the factory; and in even a relatively small factory the number of buckles used is enormous. Since, as was previously shown, the threading requires some considerable amount of time, the total time required to perform this one operation is of some considerable importance.
25

The principal object of the present invention is to simplify the manner of attaching such a buckle to a strap, and thereby to reduce the time required to perform this operation, by providing a buckle in which the cross bars thereof may be sprung away from the frame to form an opening through which the strap may be passed edgewise into the buckle; and the bars then sprung back and locked into place so that the strap occupies the same relation to the buckle, in its final form, as it would if it had been threaded therein as above described.
30

It is another object of the invention to provide such a buckle in which the cross bars are formed integrally with one of the side members, and have tips formed on their free ends which overlie the other side member, the latter being provided with upturned lugs which may be set
35

over the tips firmly to secure them to the adjacent side member.

Other objects and various features of the invention making for economy in manufacture and use will be more apparent from the following description to be read in connection with the accompanying drawing in which
5

Figure 1 is a perspective view of a buckle of the present invention showing the cross bars thereof sprung away from the remaining parts
10 of the buckle frame;

Fig. 2 is a sectional view of the buckle of Fig. 1 taken on the line 2—2 thereof, and shows the opening which is formed by springing the cross bar away from the frame.
15

Fig. 3 is an end elevational view of the buckle of Fig. 1;

Fig. 4 is an elevational view of the rear face of the buckle of Fig. 1 showing the formation of the tipped free ends of the cross bars and the notches in the adjacent side member into which these tips will fit, one of the bars being broken away better to show the latter feature; and further showing the buckle engaged with a strap, the latter being in dotted lines;
20

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 4 and illustrates the attachment of the free ends of the cross bars to the adjacent side member.
25

Fig. 6 is a front elevational view of a buckle attached to a strap member, and the strap and buckle engaged with a button on another strap, certain parts of the buckle being broken away better to show the interior construction thereof.
30

Fig. 7 is a similar view taken from a side thereof.
35

Fig. 8 is a perspective view of the rear face of the buckle showing the cross bars pressed to their forwardmost position before the lugs on the side member are set over the ends thereof.
40

Fig. 9 is a similar view of a buckle in which the cross bars have been sprung back from the frame and illustrates the manner in which a strap is inserted therein.

The buckle of the present invention generally comprises a pair of spaced side members 15 and 16 which are interconnected at their opposite ends by integrally formed end members, one of which, 17, is substantially straight, and the other, 18, has a button attaching loop 19, of any well known character, formed therein; and a pair of cross bars 20a and 20b which extend in a direction generally parallel to the straight end member from one of the side members to the other to form a plurality of substantially paral-
55

1el slots 21 a, b and c. Preferably, the frame is struck from a piece of sheet metal and the edges thereof are turned over so that the front face of the buckle is of generally smooth appearance, and each of the members above described is of U-shaped cross sectional form.

In its usual form such a buckle is engaged with a strap 22 by passing an end 22a of the latter under the end member 17 and upwardly through the slot 21c, then over the cross bars and downwardly through the slot 21a, then reversely and upwardly through 21b, over bar 20b, and finally downwardly, and again, through slot 21c. In performing this operation, as can readily be understood from Fig. 7, the portion 22b, which is first passed over the bar 20b, interferes very markedly with the subsequent repassing of the strap over the same bar; and this factor increases the time required properly to thread the strap to the buckle.

In the preferred form of the invention the cross bars 20a and 20b are formed integrally with the side member 15, and their free ends are extended to overlie a portion of the adjacent, or free, side member 16. Preferably, the free ends of the bars are flattened and drawn to provide tips 23 which, as can be seen most particularly in Figs. 2 and 3, are struck back from the front face of the bars and constitute, in effect, extensions of the rear edges thereof. In other words, the overlapping tips are formed by pressing the end portions of the bars, after the latter have been sheared from the side member 16, in such manner as to draw the material for the tips from the adjacent portions of the bars. Further, as can be seen from Figs. 4 and 8, the inner edge 24 of the side member 16 is notched as at 25, there being one notch for each of the cross bars, and each notch being positioned opposite the juncture of a cross bar with the side member 15; and the outer edge 26 of the side member 15 is provided with a corresponding number of up-turned lugs 27. This preferred construction permits the cross bars to be sprung back from the plane of the front face of the buckle to form openings 28 (Fig. 2) between the free ends thereof and the side member 16. Now, when it is desired to attach such a buckle to a strap, the latter is first folded upon itself, as is shown in Fig. 9, and is then introduced edgewise through the openings 28, with the double thickness thereof overlying, or in front of the bar 20b, and the loop portion 22c encasing the bar 20a. When the strap is completely within the buckle, in the position illustrated in Figs. 4, 5 and 6, the cross bars of the latter may then be forced forwardly to close the openings 28; and the set back of the tips and the notches in the side member permit the continuance of this forward movement until the bars are substantially within the imaginary plane of the front face of the buckle, as shown in Fig. 5. Further, in this position, the tips are engaged by the sides of the notches 25 whereby any subsequent lateral movement of the bars is prevented. After the foregoing steps have been completed the up-turned lugs 27 may then be turned, or set, over the tips 23 to secure the cross bars firmly to the side member. In its final form, as can be seen in Figs. 6 and 7, the buckle occupies exactly the same relation to the strap as it would if the latter had been threaded to the former in the manner hereinbefore described.

In shipping such buckles from the factory to the point of use it is desirable to bend the cross bars to their final resting position, as is shown

in Fig. 8. If this is not done then the buckles tend to become entangled, one with another, in transit, or the cross bars may be bent; and the subsequent untangling or straightening, involves unnecessary expense. The construction above described lends itself particularly well to such shipment, because the integral formation of the bars with one of the side members, and the interlocking of the tips and notches, tends to hold the parts in the desired relation even though the lugs are not set.

It is believed to be evident that the buckle of the present invention may be attached to a strap in a very short space of time. Thus, the operations of springing the cross bars, folding and inserting the strap, respringing and setting the bars, can be done in a much shorter time than it takes to describe them; and in a much shorter time than would be required to thread the strap as hereinbefore described.

Since certain changes, which are within the skill of an ordinary mechanic, may be made in the preferred construction without in any way departing from the true scope of the invention, it is intended that the foregoing shall be construed in an illustrative rather than a limiting sense.

What I claim is:

1. A buckle frame comprising a pair of spaced side members, and a plurality of cross bars extending from one of the side members to the other to form a plurality of slots through which a strap may be passed, said frame being characterized in that some of said cross bars are detached at one of their ends from one of the side members so that they may be sprung away therefrom to form openings through which a strap may be passed edgewise into the frame, and then sprung back into contact with the side member to close the openings, and the free side member is provided with means for securing the detached ends of the cross bars thereto.

2. A buckle frame comprising a pair of spaced side members, and a plurality of cross bars extending from one of the side members to the other to form a plurality of slots through which a strap may be passed, said frame being characterized in that some of said cross bars are detached at one of their ends from one of the side members so that they may be sprung away therefrom to form openings through which a strap may be passed edgewise into the frame, and then sprung back into contact with the side member to close the openings, and the free side member is provided with a plurality of lugs which may be turned down over the ends of the detached bars to secure them thereto.

3. A buckle frame comprising a pair of spaced side members joined together at their opposite ends by integrally formed end members one of which is substantially straight and the other of which has a button engaging loop formed therein, and a pair of cross bars extending from one side member to the other in a direction substantially parallel to the straight end member so as to form a plurality of slots through which a strap may be passed, said frame being characterized in that the cross bars are formed integrally with one of the side members and have free ends which overlie the other side member, and the other side member is provided with up-turned lugs which may be set over the free ends of the cross bars to secure the latter to the former.

4. A buckle frame according to claim 3 in which the free ends of the cross bars overlie the underside of the other side member, and said other side member has a pair of notches formed therein into which the free ends may fit to prevent lateral movement thereof, and a corresponding number of upturned lugs which may be set over said free ends to secure them to the side member.

5. A buckle frame comprising a pair of spaced side members joined together at their opposite ends by integrally formed end members one of which is substantially straight and the other of which has a button engaging loop therein, and a pair of cross bars extending from one side member to the other in a direction substantially parallel to the straight end member, said frame being struck from sheet metal with the edge thereof turned rearwardly so that each

member is of U-shaped cross sectional form, said frame being further characterized in that the cross bars are formed integrally with one of the side members and have tips on their free ends which overlie the rear face of the adjacent side member, and the adjacent side member has notches formed in the inner edge thereof into which the tips may fit and lugs formed on the outer edge thereof which may be set over the tips to secure the cross bar to the side member.

6. A buckle according to claim 5 in which the free ends of each of the cross bars is flattened to form a tip which is set back from the front face and forms an extension of the rear edges thereof whereby the tip may fit into its corresponding notch in the side member and the front face of the cross bar may lie in the plane of the front faces of the side members.

FREDERICK R. REUTTER.