Oct. 11, 1938. P. W. WHITE 2,133,066

BUCKLE

Filed Aug. 10, 1936

Fig. 1.

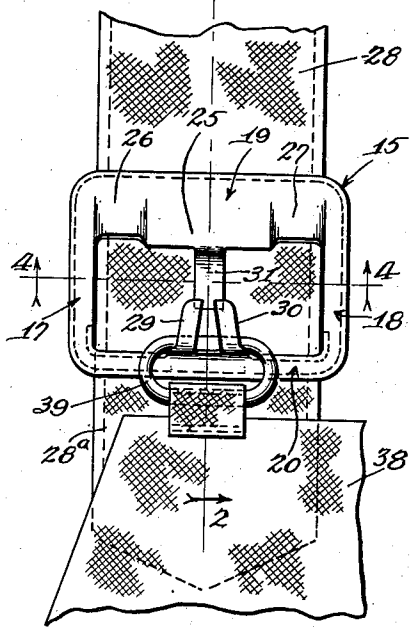


Fig. 2.

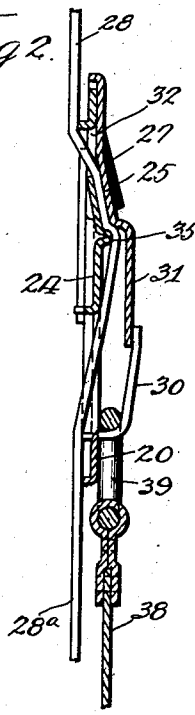


Fig. 3.

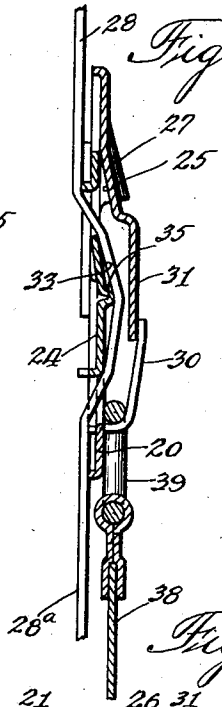


Fig. 4.

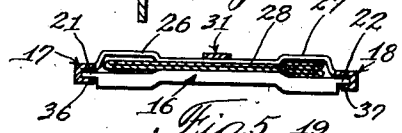


Fig. 5.

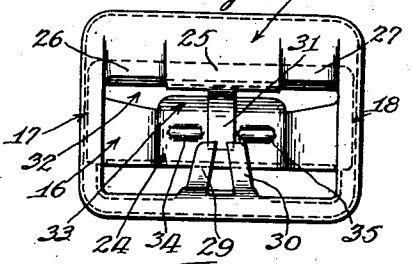


Fig. 6.

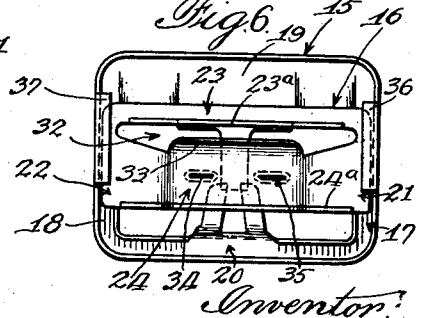


Fig. 7.

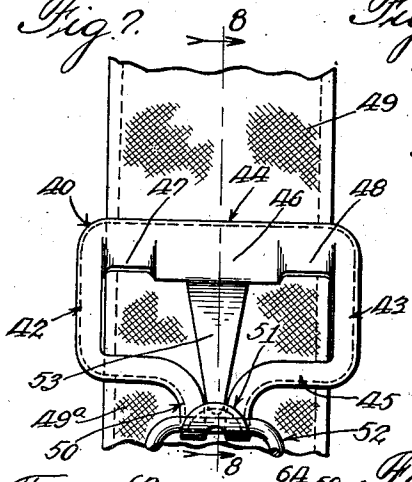


Fig. 8.

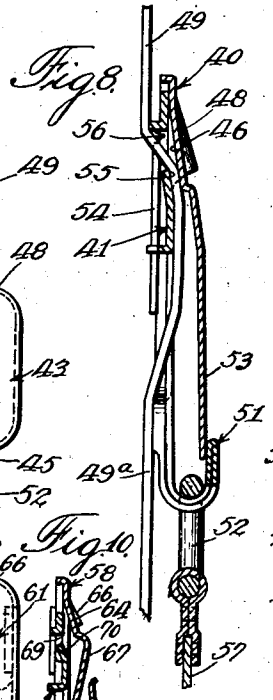


Fig. 9.

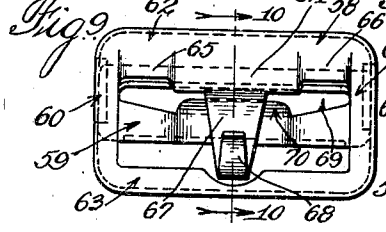


Fig. 10.

Inventor:
Paul W. White.
By: Jones, Adding ton, Ames & Seibold.
Attys.

Patented Oct. 11, 1938 2,133,066

UNITED STATES PATENT OFFICE

2,133,066

BUCKLE

Paul W. White, Chicago, Ill., assignor to Parva Products Company, Chicago, Ill., a corporation of Delaware

Application August 10, 1936, Serial No. 95,054

4 Claims. (Cl. 24—194)

This invention relates to a slide buckle and has special reference to a device adapted to be mounted on belts, straps, and the like, for support of garments or other objects on the person or for otherwise detachably securing articles together.

More particularly, this invention relates to a slide buckle comprising a pair of slidably engaged frames disposed in a face-to-face substantially parallel relation in which the frames are provided with side bars and cross bars connecting the side bars for defining openings therethrough, the frames having a strap threaded therebetween with the free end thereof extending beneath the overlying frame. The frames are provided with means for directing relative movements thereof to clamp the strap in desired adjusted positions, there being means on one of the cross bars of the overlying frame extending in the direction of the other cross bar thereof to detachably receive a supporting member and to retain the free end of the strap against displacement.

The device of the present invention is adaptable for use with various types of objects particularly on the person and may be employed with slight variations not departing from the spirit of this invention, universally where detachable connections are desired to be made. However, in the drawing and in the following description, the slide buckle will be shown and described in its association with the strap of an overall, the strap being threaded between the frames with relative movements of the frames clamping the strap in adjusted positions. One of the cross bars of the overlying frame of the buckle is provided with means extending in the direction of the other cross bar thereof for detachably receiving a ring or other supporting member of a bib of an overall and for retaining the free end of the strap against displacement. It will, of course, be readily apparent that the buckle may be variously employed and that this invention is not to be limited to the specific uses hereinafter described and illustrated.

One of the objects of this invention is to provide a buckle comprising a pair of slidably engaged frames of the type hereinabove described in which the strap threaded therethrough may be conveniently and easily adjusted in either direction.

A further object of this invention is to provide a strap-engaging buckle comprising a pair of slidably engaged frames of the character above noted in which the means for detachably receiving a supporting member is disposed on one of the cross bars and extends in a direction toward the other cross bar of the frame in order that the free end of the strap may be held against displacement.

A still further object of this invention is to provide a slide buckle comprising a pair of slidably engaged frames of the type indicated above in which the construction may be relatively inexpensive to manufacture, may be durable and simple in construction, and simple in threading and manipulation.

Other objects and advantages will hereinafter be more particularly pointed out and for a more complete understanding of the characteristic features of this invention, reference may now be had to the following description when taken together with the accompanying drawing, in which latter:

Figure 1 is a front elevational view of one form of buckle embodying the features of this invention, the buckle being attached to a fragmentary portion of a shoulder strap for supporting a fragmentary portion of the bib of an overall;

Fig. 2 is a central longitudinal sectional view taken on the line 2—2 of Fig. 1 showing the strap in a clamped position between the slidably engaged frames of the buckle;

Fig. 3 is a view similar to Fig. 2 showing the strap in a position prior to clamping engagement of the slidably engaged frames, the strap being freely adjustable therein;

Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 1;

Fig. 5 is a front elevational view of the buckle shown in Fig. 1;

Fig. 6 is a rear elevational view of Fig. 5;

Fig. 7 is a view similar to Fig. 1 of a modified form of buckle construction embodying the features of this invention;

Fig. 8 is a central enlarged longitudinal sectional view taken on the line 8—8 of Fig. 7;

Fig. 9 is a front elevational view of a still further modified form of buckle construction embodying the features of this invention; and

Fig. 10 is a longitudinal sectional view taken on the line 10—10 of Fig. 9.

Referring now to the drawing and more particularly to Figs. 1 to 6, inclusive, thereof, the construction therein shown comprises a pair of frame members 15 and 16, the frame member 15 being preferably substantially rectangular in outline and having side bars 17 and 18 connected together by cross bars 19 and 20. The

frame member 16 is likewise preferably substantially rectangular in outline and comprises side bars 21 and 22 connected together by cross bars 23 and 24.

The cross bar 19 of the frame 15 is preferably formed to present a relatively wide strap-engaging face, an intermediate lateral portion 25 of which is inclined relative to the general plane of the frame. Portions 26 and 27 of the strap-engaging face 19, adjacent opposite sides of the inclined portion 25, are likewise inclined in the same direction as portion 25 but at a greater angle to accommodate the usual thickened edge portions of a strap 28. The side bars and cross bars of the frame 15 are preferably formed of a relatively thin sheet of material and thus are shown as being embossed, or, in other words, a peripheral flange is disposed over the buckle frame.

The other cross bar 20 of the frame 15 is provided with a pair of hook-shaped projecting portions 29 and 30 which extend initially outwardly and then in the direction of the other cross bar 19 for co-operation with a tongue 31 extending in a direction toward the hook-shaped portion to releasably close the opening to the hook-shaped member. The frame 15, being preferably formed of relatively thin sheet metal, provides a desired resiliency in the tongue portion 31, the tongue being formed preferably integrally with the cross bar 19 and extending from the inclined strap-engaging face 21 thereof. The tongue 31 overlaps at least a portion of the faces of the hook-shaped portions 29 and 30 to close the opening thereinto and is preferably cut from the material between the hook-shaped members 29 and 30, the latter being cut from material surrounding the tongue and being thereafter bent inwardly in a direction toward each other to overlie the tongue.

A strap-engaging slot 32 is formed by the spaced side bars and cross bars of the frame 16, the frame being reenforced by the provision of a flange 23a on the cross bar 23 lying adjacent one edge of the slot 32 and also by the flange 24a adjacent the corresponding edge of the cross bar 24. The edge of the cross bar 24 bounding the slot 32 is provided with an intermediate strap-engaging surface 33 which is inclined in the same direction as the inclined surface 25 of the frame 15 for co-operation therewith to grip the strap threaded through the slot 32 and therebetween in adjusted positions. It may be desirable to augment the clamping action of the co-operating inclined surfaces by the raised portions 34 and 35 in the path of travel of the relative movement of the frame members so that the inner edge of the inclined portion 25 may butt thereagainst and distort the strap as shown more particularly in Fig. 2.

The frames are directed in their relative longitudinal movements by the provision of ledges 36 and 37 which are preferably formed integrally with the side bars 17 and 18, repectively, of the frame 15, the ledges extending in a direction inwardly toward each other to form opposed channels when viewed in cross section. The strap 28 is threaded through the slot 32 of the frame 16 and thence over the cross bar 24 and beneath the tongue 31, the free end 28a lying beneath the overlying frame 15. When tension is had on the strap 28, the bib 38, having a ring-shaped supporting member 39 detachably received in the co-operating hook-shaped members 29 and 30, holds the frame 15 against movement and permits the strap to move the frame 16 relatively thereto. Such relative movement between the frame members 15 and 16 by the tensioning of the strap 28 causes a co-operation between the inclined surfaces 25 and 33 to clamp the strap, the direction of movement converging toward the inclined surface. The greater the tension on the strap, the tighter the clamping action of the frames thereon.

The resilient tongue 31, which is preferably formed integrally with the inclined strap-engaging face 25, co-operates with the hook-shaped portions 29 and 30 to releasably close the opening to the hook to prevent displacement of the supporting or ring member 39 of the bib of an overall and also prevents creeping of the free end 28a of the strap 28.

Referring now more particularly to Figs. 7 and 8, a further embodiment of this invention is shown wherein the buckle comprises a pair of frame members 40 and 41, the frame member 40 being preferably substantially rectangular in form and having side bars 42 and 43 connected together by cross bars 44 and 45. The cross bar 44 of the frame member 40 is provided with an intermediate strap-engaging portion 46 which is inclined relatively to the plane of the frame. The portions 47 and 48 of the cross bar 44 lying adjacent the ends of the inclined portion 46 are likewise inclined but at a greater angle in order to accommodate the thickened edge portions of a strap 49. The other cross bar 45 is provided with a depending loop 50 having a hook portion 51 for detachably receiving a supporting member or ring 52, the opening to the hook-shaped member being releasably closed by a tongue 53 preferably formed integrally with the inclined portion 46 of the cross bar 44 and extending therefrom in the direction of the loop to be formed preferably out of the material between the loop.

The frame 41 is formed in substantially the same manner as the frame 16 of the previously described modification except that in the present described form the optional projections 34 and 35 of the frame 16 are omitted. The side bars of the frame 41 are guided in the channels formed by the ledges 54 extending inwardly in a direction toward each other from the side bars 42 and 43 to direct a relative longitudinal movement of the frames. One of the cross bars of the frame 41 is provided with a strap-engaging face 55 which is inclined in the same direction as the inclined face 46 of the frame 40 to co-operate therewith to clamp the strap 49 therebetween, the strap 49 extending through a strap receiving slot 56 in the frame 41 and over the inclined strap-engaging face 55, with the free end 49a thereof extending beneath the overlying frame 40.

A tension on the strap 49 moves the frame 41 in a longitudinal direction against the resistance of the bib 57 attached by means of the ring 52 to the hook-shaped member 51. The resistance of the bib 57 fixes the frame 40 against movement, necessitating a movement of the frame 41 in a direction to converge on the inclined face whereby a clamping engagement of the strap is had between the co-operating strap-engaging inclined surfaces 46 and 55. The tongue 53 releasably closes the opening into the hook-shaped loop 51 to prevent displacement of the ring 52 and also prevents creeping of the free end 49a of the strap 49 upwardly out of the slidably engaged frames.

Referring now more particularly to Figs. 9 and 10, the buckle therein shown comprises a pair of frame members 58 and 59, the frame member 58

being preferably substantially rectangular in form and having spaced side bars 60 and 61 connected together by spaced cross bars 62 and 63. The cross bar 63 is merely for the purpose of adding rigidity to the frame 58 and may be dispensed with entirely should it be desired to economize on material. The cross bar 62 is provided with an intermediate strap-engaging portion 64 which is inclined relatively to the plane of the frame 58, portions 65 and 66 of the cross bar 62 lying adjacent the edges of the inclined surface 64 and being likewise inclined but to a greater angle to accommodate the usual thickened edges of the strap. A tongue 67 is preferably formed integrally with the cross bar 62 and extends from the centrally inclined portion 64 in a direction toward the other cross bar 63, a hook member 68 being formed on the end of the tongue for detachably receiving a supporting member or ring.

The frame 59 is similar to the frame 41 of the just previously described embodiment, having side bars and connecting cross bars defining a slot 69 for receiving a strap. A strap-engaging face 70 is provided on one of the cross bars adjacent the strap-receiving opening 69 which is inclined in the same direction as the inclined strap-engaging face 64 to co-operate therewith and to clampingly engage the strap. The strap is threaded through the strap-receiving slot 69 and thence between the strap-engaging faces 64 and 70 to extend beneath the overlying frame 58. The tongue 67 and integrally formed hook-shaped portion 68 co-operate to prevent creeping of the strap threaded between the frames, the hook 68 receiving the ring or supporting member of the bib of an overall, or the like.

While several embodiments of this invention are herein shown and described, it is to be understood that various modifications thereof may be apparent to those skilled in the art without departing from the spirit and scope of this invention and, therefore, the same is only to be limited by the scope of the prior art and the appended claims.

I claim:

1. A slide buckle comprising a pair of slidably engaged frames disposed in a face-to-face substantially parallel relation, said frames each having side bars and cross bars connecting said side bars for defining openings therethrough for receiving a strap threaded therebetween with the free end thereof extending beneath the overlying frame, means on said frames for directing relative movements thereof to clamp said strap in adjusted positions, a hook-shaped member on one of the cross bars of one of said frames, and a tongue on one of the cross bars of the overlying frame extending in the direction of the other cross bar thereof for overlapping and for releasably closing the opening of said hook-shaped member on the latter cross bar interiorly of the frame to detachably receive a supporting member and to retain the free end of said strap against displacement.

2. A slide buckle comprising a pair of slidably engaged frames disposed in a face-to-face substantially parallel relation, said frames each having side bars, and cross bars connecting said side bars for defining openings therethrough for receiving a strap threaded therebetween with the free end thereof extending beneath the overlying frame, means on said frames for directing relative movements thereof to clamp said strap in adjusted positions, a hook-shaped member on one of the cross bars of one of said frames, and a tongue formed integrally with one of the cross bars of the overlying frame and extending in the direction of the other cross bar thereof to overlap said hook-shaped member comprising spaced projecting members formed integrally with the latter cross bar to detachably receive a supporting member and to retain the free end of said strap against displacement, a portion of said tongue being provided by the material between said projecting members of the hook-shaped member.

3. A slide buckle comprising a pair of slidably engaged frames, one of said frames having spaced side bars and a cross bar connecting said side bars, said cross bar presenting a strap-engaging face, and the other of said frames comprising side bars for co-operation with said first mentioned frame to be guided in a longitudinal movement thereby, and cross bars connecting said side bars for forming a strap-receiving slot, one of said cross bars co-operating with said strap-engaging face to clamp a strap threaded therebetween and through said strap-receiving slot in adjusted positions, a hook-shaped tongue formed integrally with the cross bar of said first mentioned frame extending therefrom over a substantial portion of the interior of the frame to detachably receive a supporting member, and a co-operating tongue formed integrally with an opposed cross bar on said first mentioned frame for overlapping said hook-shaped tongue on the interior of the frame to overlie and to retain the free end of said strap against displacement.

4. A slide buckle comprising a pair of slidably engaged frames, one of said frames having side bars and cross bars connecting said side bars, ledges on said side bars extending inwardly toward each other to form opposed channels when viewed in cross section, one of said cross bars presenting an intermediate strap-engaging face inclined relative to the plane of said frame with portions of said cross bar adjacent thereto inclined at a greater angle, and the other of said frames comprising side bars engaging said opposed channels of the first mentioned frame to be guided in a longitudinal movement thereby, and cross bars connecting said side bars for forming a strap-receiving slot, one of said cross bars co-operating with the inclined face of said first mentioned frame to clamp a strap threaded therebetween and through said strap-receiving slot in adjusted positions with the free end extending beneath said first mentioned frame, and means formed integrally with one of the cross bars of the first mentioned frame for co-operation with means formed integrally on the other cross bar thereof to detachably receive a supporting member and to retain the free end of said strap against displacement.

PAUL W. WHITE.