Oct. 20, 1931. D. I. REITER 1,828,256

FASTENER SLIDE

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Fig. 2

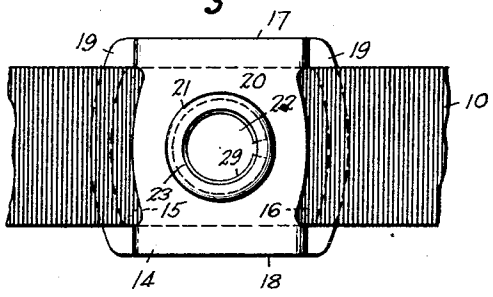


Fig. 1

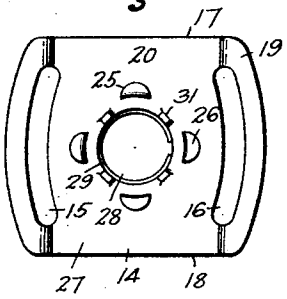


Fig. 3

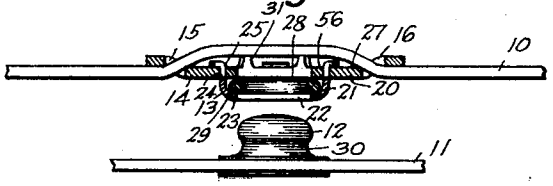


Fig. 4

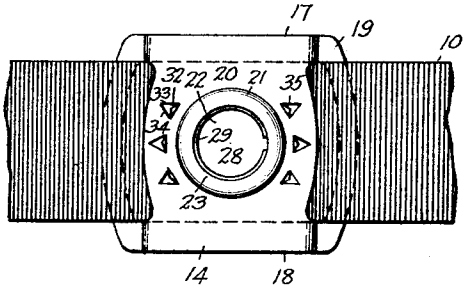


Fig. 6

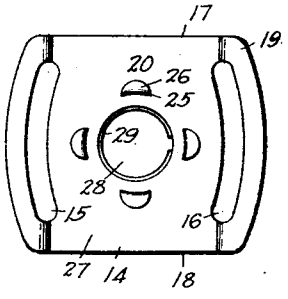
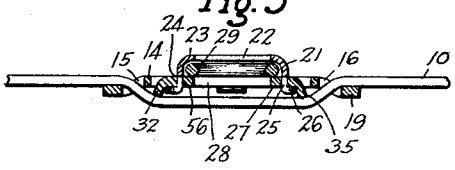


Fig. 5



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Fig. 7

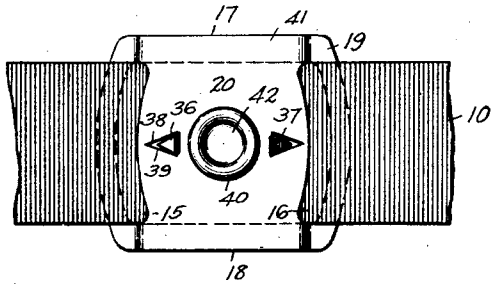


Fig. 8

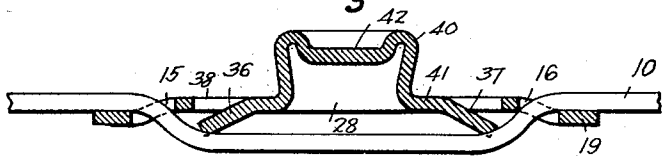


Fig. 9

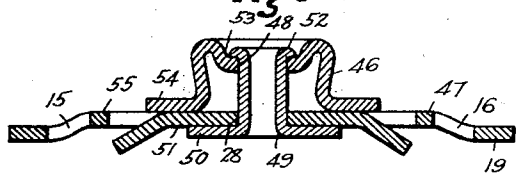
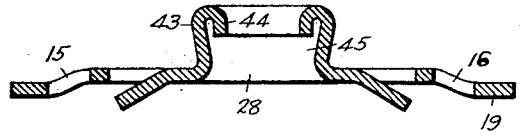


Fig. 10



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UNITED STATES PATENT OFFICE

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FASTENER SLIDE

Application filed October 18, 1930. Serial No. 489,508.

This invention relates to fastened slides and is particularly applicable to such a slide which may be moved upon a belt or the like to adjust the position of the stud or socket carried thereby, or through which a belt may be moved. My invention contemplates the provision of a simple, inexpensive and efficient male or female element of a snap fastener on said slide, and contemplates further, the provision of means for maintaining the slide in adjusted position relatively to and on a belt, strap, or the like, while offering comparatively little resistance to the movement of the slide relatively to the belt and into the desired position until the belt is tensioned in either direction.

The various objects of my invention will be clear from the description which follows, and from the drawings, in which

Fig. 1 is a top plan view of one form of my improved fastener slide.

Fig. 2 is a bottom plan view of the same as it appears in position on a belt or strap and showing the outstanding prongs thereon.

Fig. 3 is a vertical section of the slide as it appears in position on a belt, the slide being shown in connection with a cooperating snap fastener element.

Fig. 4 is a bottom plan view, similar to Fig. 2, of a modified form of my improved slide.

Fig. 5 is a vertical section thereof.

Fig. 6 is a top plan view, similar to Fig. 1, of another modified form of my improved slide wherein the various prongs are omitted.

Fig. 7 is a bottom plan view of another modified form of my improved slide, showing a stud element thereon instead of a socket element.

Fig. 8 is a vertical section of the same.

Fig. 9 is a similar section of another modified form of my improved slide, showing a separate stud element secured thereto, and

Figure 10 is a similar view of another modified form of slide showing another form of stud element.

In that practical embodiment of my invention which I have illustrated by way of example, my improved slide is adapted to be adjusted in position upon a suitable bolt or strap 10, such as may be used on articles of apparel, as for example, hats, caps, gloves, garters and the like wherein adjustment of the effective length of a strap or flexible fastening means may be desirable. The slide may be formed with a suitable socket element such as the resilient socket illustrated in Figs. 1 to 5 inclusive, or the slide may be formed with a suitable stud element thereon, such as is shown in Figs. 7 to 10 inclusive. In either case, the fastener element of the slide is designed to cooperate with another fastener element, such as may be secured to an end 11 of the belt 10, or to another strap or belt to which the belt 10 is to be adjustably fastened. As shown in Fig. 3, the belt or strap end 11 is provided with a suitable stud 12 designed to cooperate with the socket 13 of the slide member 14.

Said slide member is preferably formed of a single piece of sheet metal, and is provided with a pair of spaced, transverse slots 15 and 16, each arranged near one end of the slide member. Said slots are of sufficient width to have the strap or belt 10 passed therethrough in such a manner that the belt may be pulled through the slide member 14 or said slide member may be moved along a belt and adjusted to the required position thereon. As illustrated in the various figures, the slots 15 and 16 are shown as having arcuate or curved walls, though it will be understood that said walls may be straight and substantially perpendicular, if desired, to the edges 17 and 18 of the slide member, a structure well known in the art and hence which need not be further described or shown. The terminal end portions 19 of the slide member 14 beyond the slots, may be raised out of the plane of the central portion 20 of the slide member, if desired, though said end portions

may lie in the same plane as the portion 20 without affecting the efficiency of my improved slide.

The socket 13 comprises the ring holder 21, provided with a central aperture 22 therein for the passage of the stud 12, and having a terminal wall 23 surrounding the aperture 22 and in spaced relation to the under surface of the portion 20 of the slide member. Upstanding from that edge 24 of the ring holder 21 which is adjacent the under surface of the slide member, are the prongs 25, which are passed through spaced circularly aligned slots or apertures 56 made in the portion 20 of the slide member. The prongs 25 are turned over as at 26 upon the upper surface 27 of the portion 20, to secure and maintain the ring holder 21 in the proper position independently of the central aperture 28 of the slide member. The apertures 56 are arranged preferably concentrically about the central aperture 28 in the slide member 14, whereby the aperture 22 of the ring holder is arranged substantially coaxially of the aperture 28. It will be understood, however, that the aperture 28 may be omitted, provided that a suitable flat and low stud be used in connection with the socket. Inserted between the wall 23 and the under surface of the portion 20 of the slide member is the open spring ring 29. The normal innermost diameter of said ring is slightly less than the diameters of the apertures 28 and 22 whereby said ring slightly overhangs said apertures. It will be seen that as the stud 12 passes through the aperture 22, the spring ring yields under the pressure of said stud, the ring 29 contracting after the stud has passed thereby to engage the neck 30 of the stud and to hold said stud against accidental retraction from the socket.

In order to resist displacement of the slide on the belt 10 after it has been arranged in the proper position thereon, and the belt pulled in either direction, I provide a series of prongs 31, preferably struck out from the portion 20 of the slide member.

As illustrated in Figs. 1 and 3, the prongs 31 are arranged about and adjacent to the wall of the aperture 28, whereby as the belt 10 is tensioned after it has been passed through the slots 15 and 16, said belt is drawn downwardly against the prongs. The ends of the prongs thereby grip the belt and resist displacement of the slide relatively thereto. As illustrated in Figs. 4 and 5, prongs serving substantially the same purpose, may be arranged otherwise than about the wall of the aperture 28.

In the modification now being described, I prefer to provide one or more prongs 32, 35 upstanding from the portion 20 of the slide member 14, and extending beyond that face of said member opposite to the face beyond which the ring holder extends. The prongs 32 are arranged between the slot 15 and the aperture 28 while the prongs 35 are arranged between the slot 16 and said aperture. Said prongs are formed from the material of the portion 20 by making cuts as 33 and 34 which meet each other, and then upraising the material between the cuts. The prongs 32 are inclined toward the slot 15, while the prongs 35 are inclined in the other direction, toward the slot 16. As shown in Fig. 5, on the tensioning of the belt, said prongs 32 and 35 serve to engage and grip the belt and thereby prevent the slide from becoming displaced after it has been arranged in adjusted position on the belt 10. It will further be seen that the walls of the slots 15 and 16 are smooth and uninterrupted. Therefore, as the belt is pulled through either of the slots 15 and 16 to form a loop preparatory to moving the slide and belt relatively to each other the walls of the slots offer substantially no resistance to the movement of the belt. On further movement of the intermediate belt portion past the prongs 32, to enlarge the loop, said prongs offer comparatively little resistance to the relative movement of the belt and slide. Resistance to such movement first occurs when the loop of the intermediate portion of the belt has been substantially flattened, as when the belt is tensioned by pulling it in either direction to draw it against the prongs. While I have shown a plurality of prongs 32 and a similar plurality of prongs 35, it will be understood that only one or more of such prongs may be used as may be desired and as illustrated in Fig. 7.

In Figs. 7 and 8, I have shown a single pair of prongs as 36 and 37, arranged substantially along the axis or center line of the slide member 41 and pressed up from the central portion 20 of said slide member between the intersecting cuts 38 and 39. In the slide member 41, I have further shown a suitable stud as 40 to replace the socket 13. Said stud 40 is preferably arranged at the center of the slide member 41 and is preferably integral therewith, being pressed out from the material of the portion 20 to form the central slide aperture 28 As shown in Fig. 8, tensioning of the belt by a pull in either direction causes the ends of the prongs 36 and 37 to engage and grip the belt to prevent movement of the slide thereon. The stud 40 is preferably made with a recessed central portion 42 to reduce the height of the stud to a minimum, it being understood that as shown in Fig. 10, the central portion 42 may be entirely omitted to provide spaced walls as 43 and 44 on the end of the stud. In that case, the member 45 may be used either as a stud or as a socket. When used as a stud, the wall 43 is the operative portion thereof, and if used as a socket, the wall 44 is the operative portion. As shown in Fig. 9, the stud 46 may be made of a separate piece of material independent of the slide member 47, being provided with a

central aperture as 48 through which the eyelet 49 is passed. Said eyelet is provided with a flange 50 engaging the surface 51 of the slide member 47, and holds the stud 46 to the slide member by the end 52 of the eyelet, which is upset or riveted upon the wall portion 53 of the stud surrounding the aperture 48. The stud is thereby secured to the slide, the flanges 54 thereon engaging the surface 55 of the slide member.

It will be seen that by arranging the prongs 31, 33, 35, 36 and 37 at points in spaced relation to the slots 15 and 16, the belt or strap 10 may be readily passed through either of said slots in either direction without being impeded or engaged by said prongs. It will further be seen that the prongs are effective to prevent relative movement of the slide and the belt once the slide has been adjusted to its proper position and the belt tensioned, and that the slide may be adjusted on the belt without interference by the prongs by merely looping or loosening that intermediate portion of the belt between the slots 15 and 16. It will further be seen that I have provided simple and effective fastening means adapted for economical quantity production, for use in connection with a slide and that such means may take the form of a socket or a stud element of a snap fastener.

While I have shown and described certain specific embodiments of my invention, it will be understood that I do not intend to limit myself thereto but intend to claim my invention as broadly as may be permitted by the state of the prior art and the terms of the appended claims.

I claim:

1. In a combined slide and snap fastener element, a slide member of sheet material, having a pair of spaced transverse slots therein, said slots having smooth, uninterrupted walls for the free passage of a belt therethrough, a snap fastener element on the slide member between said slots adapted to engage a cooperating fastener element, said snap fastener element having an engaging portion upstanding above the upper face of the slide member, the slide member being provided with an aperture arranged coaxially of the fastener element, and belt-engageable prongs integral with and bent from the sheet material of the slide member and projecting below the other face of the slide member, said prongs being arranged between the slots and the aperture of the slide member and in spaced relation to the walls of the slots, and said prongs being bent laterally from that area of the sheet material of the slide member disposed between the inner walls of the slots and thereby leaving openings in said area.

2. In a combined slide and fastener, a sheet metal slide member having spaced slots therein each adjacent one end of the slide member, and having a substantialy central aperture therein between the slots, prongs integral with and projecting from and of the same thickness as the slide member and arranged between the aperture and the slots and in spaced relation to the walls of the slots, and a fastener element on the slide member arranged coaxially of the aperture and having an annular portion in spaced relation to the adjacent face of the slide, each of said prongs being arranged between a pair of intersecting cuts in a portion of the area of the slide member, and being bent from the sheet metal between the cuts laterally of said member.

3. In a combined slide and snap fastener element, a sheet metal slide member having a pair of similar spaced, transverse belt-receiving slots therein, the walls of said slots being uninterrupted, a snap fastener element adapted to cooperate with another snap fastener element projecting in one direction from one face of the slide member substantially midway between said slots, and having an annular continuous wall outstanding from the slide member, said slide member having a substantially central aperture therein arranged coaxially of the fastener element, and at least two sets of prongs integral with the slide member and projecting therefrom substantially in the other direction, each set of said prongs being arranged between the inner wall of one of the slots and that portion of the wall surrounding the aperture and adjacent said slot, and said annular wall of the fastener element being arranged outwardly of the aperture and out of surface engagement with the wall surrounding the aperture to retain the effective diameter of the aperture the same as the full and unreduced diameter of said aperture wall.

4. In a fastener slide, a slide member having spaced transverse slots therein and having a substantially central aperture therein, a fastener element having a continuous annular laterally outstanding wall arranged substantially coaxially of and outwardly beyond, and out of engagement with the wall of said aperture, and arranged throughout its length entirely on one side of the slide member and prongs bent from between cuts made in the material of the slide member adjacent the aperture and in spaced relation to the walls of the slots and on the other side of said slide member whereby a belt may be passed freely through the slots out of engagement with said prongs but being drawn into engagement with said prongs on the tensioning of the belt in either direction.

5. In a slide, a slide member having a pair of spaced transverse slots therein each adjacent one end of the slide member, a fastener element on said slide member between the slots and having an annular wall of substantial height projecting beyond one face of the

slide member, and prongs projecting beyond the other face of the slide member and in spaced relation to the walls of the slots and bent from the material of the slide member about intersecting cuts in said slide member to form openings in the slide member at the places from which the prongs have been bent.

6. In a fastener slide, a slide member having spaced transverse slots therein and having a substantially central aperture therein, a fastener element projecting from one face of the slide member and having a continuous annular wall arranged substantially coaxially of and outwardly beyond the wall surrounding the aperture and prongs spaced from the aperture and spaced from the walls of the slots for engaging a belt passed through the slots on the movement of the belt in either direction, said prongs being angularly inclined to the faces of the slide member and projecting beyond the other face of the slide member and each of said prongs being inclined toward the slot to which it is nearer and bent from the material of the slide member to form openings in the slide member at the places from which the prongs have been bent.

7. In a combined slide and snap fastener element, a slide member having a pair of spaced transverse slots therein, the walls of said slots being uninterrupted, said member having smaller circularly aligned slots arranged inwardly of the transverse slots and having a substantially central aperture therein arranged inwardly of the circularly aligned slots, a socket element of a snap fastener projecting from one face of said slide member in one direction and comprising a ring-holding member spaced from said face of the slide member and having prongs passing through the circularly aligned slots and turned over on to the other face of the slide member and a spring ring interposed between the ring-holding member and said first-mentioned face of the slide member and inwardly overhanging each of said apertures, and prongs projecting beyond said other face of the slide member, and arranged between the slots and the aperture, and spaced from the slots.

8. In a socket slide, a pair of spaced transverse slots, a socket element between said slots comprising a ring-holding member having an apertured terminal wall thereon spaced from the adjacent face of the slide member and having spaced extensions passed through the slide and turned over on to the other face of the slide member to hold the ring-holding member to the slide member, an open ring interposed between the terminal wall of the ring-holding member and the adjacent face of the slide member and inwardly overhanging the aperture, and prongs extending from the other face of the slide member and arranged in spaced relation to and inwardly of the slots.

9. In a socket slide, a slide member provided with spaced belt-receiving slots, and a substantially central aperture between the slots, a spring socket for engaging a cooperating stud secured to the slide member of the aperture, said socket comprising an apertured member of a piece of material separate from the slide member, spaced projections on said socket passing through similarly spaced slots in and secured to the slide member independently of the aperture of the slide member and a spring ring held by said apertured member directly between one face of the slide member and said apertured member, and inwardly overhanging the apertures of the apertured member and of the slide member, and belt-engaging prongs on and bent from the material of the slide member.

10. In a combined slide and snap fastener element, a slide member having a pair of spaced transverse slots therein adjacent the ends thereof and having a substantially central aperture and circularly aligned slots between the aperture and said transverse slots, a socket for cooperation and separable engagement with a stud arranged coaxially of said aperture, said socket comprising a ring-holding member having an apertured terminal wall at one end thereof and having spaced depending extensions at the other end thereof passed through the circularly aligned slots and turned over, and a spring ring interposed between the terminal wall of the ring-holding member and the adjacent face of the slide member and inwardly overhanging the apertures of the slide member and the ring-holding member, and adapted to expand and contract on the passage of a cooperating stud through the apertured end of the ring-holding member.

11. In a socket slide, a slide member having spaced transverse belt-receiving slots therein, and having spaced circularly aligned apertures between the slots, a one-piece apertured socket member between the slots, having a continuous circular wall, extensions depending from said wall and passed through said circularly aligned slots and turned over, and a resilient ring within the socket member and extending slightly inwardly of the aperture thereof to engage a circular stud passed through said aperture.

12. In a socket slide having spaced belt-receiving slots therein, a socket member between said slots having an annular apertured continuous terminal wall substantially parallel to the face of the slide, and a cylindrical wall completely open at its end adjacent the slide and having extensions passed through the slide member and turned over, and a spring ring interposed between and retained in place by direct engagement with the terminal wall of the socket member and

the adjacent face of the slide and inwardly overhanging the wall of the aperture said ring being arranged at the open end of said cylindrical wall whereby a circular stud passed through said aperture is engaged and removably held by said ring and passes into said open end.

13. In a socket slide, a slide member having a pair of spaced transverse slots therein, and having a substantially central aperture and circularly aligned slots between the aperture and said transverse slots, an annular resilient stud engaging member arranged about the central aperture on one face of the slide member, aperture means adapted to receive a stud passed through the aperture thereof, for holding said resilient member in place on the slide member, and means forming part of said apertured stud-receiving means, passing through the circularly aligned slots for securing said stud-receiving means to the slide member.

14. In a fastener slide, a slide member having spaced transverse slots therein, a fastener element between the slots, said element having an annular inwardly and downwardly turned free end portion and an outer wall concentric with said portion, the outer wall being shaped to form a stud and said annular portion being open to form a socket for the reception of a cooperating stud, a prong integral with the slide member and arranged on one side of said fastener element, and between and in spaced relation to, said side of the fastener element and the walls of the adjacent slot, and inclined toward said adjacent slot, and a similar prong on the other side of said fastener element similarly arranged and inclined toward the other slot.

15. In a socket slide, a slide member having a pair of spaced transverse slots therein and having spaced circularly aligned slots between the transverse slots, a snap fastener socket element secured to the slide member between said slots and comprising an apertured member provided with an annular wall outstanding from one face of the slide member and adapted to receive a stud on the passage of the stud through the aperture thereof, an annular resilient stud-engaging member arranged interiorly of the apertured member and adjacent said face of the slide member, extensions on said apertured member passing through the circularly aligned slots and bent on to the other face of the slide member, and prongs bent laterally from the material of the slide member and outstanding from and beyond the other face of the slide member.

16. In a combined slide and snap fastener element, a slide member having a pair of spaced transverse slots therein and having a substantially central aperture and circularly aligned slots between the aperture and said transverse slots, a socket for cooperation and separable engagement with a stud arranged coaxially of said aperture, said socket comprising a ring-holding member having an apertured terminal wall at one end thereof and having spaced depending extensions at the other end thereof passed through the circularly aligned slots and turned over, a resilient ring interposed between the terminal wall of the ring-holding member and the adjacent face of the slide member and inwardly overhanging the apertures of the slide member and the ring-holding member, and belt-engaging prongs integral with the slide member and projecting therefrom.

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