Nov. 28, 1961 M. J. CARPINELLA 3,010,169

GARMENT DETACHABLE SNAP FASTENERS

Filed Feb. 24, 1958

Fig. 1

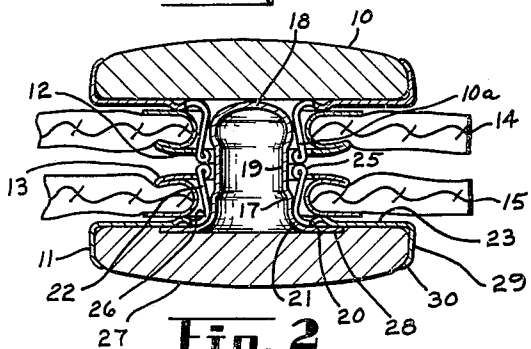


Fig. 2

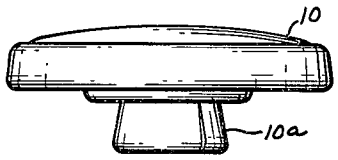


Fig. 3

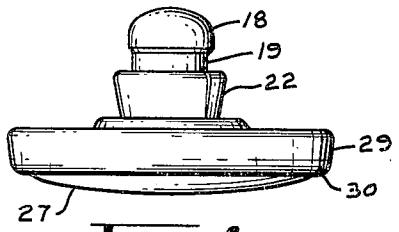


Fig. 4

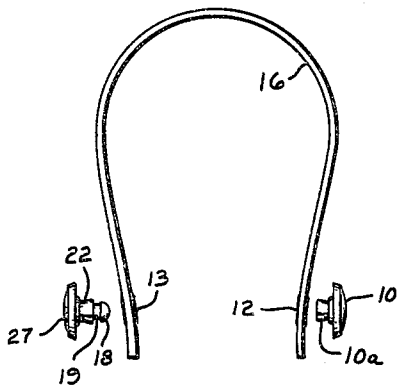


Fig. 5

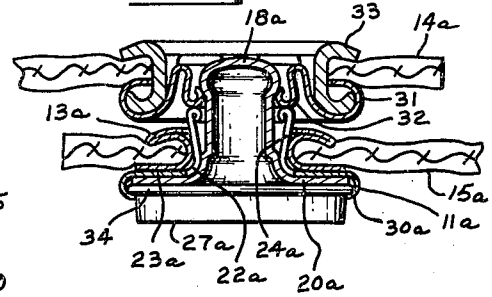


Fig. 6

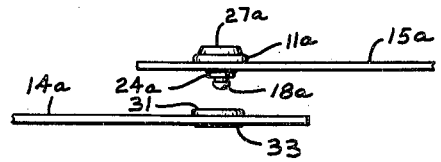
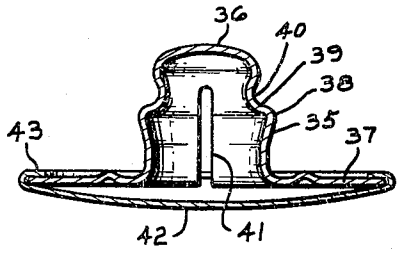


Fig. 7



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GARMENT DETACHABLE SNAP FASTENERS

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This invention relates to improvements in detachable snap fasteners of the stud and socket type to be used on garments or other articles to be laundered, such as the cuffs of men's shirts or ladies' blouses.

Heretofore, in the use of snap fasteners on garments, it has been customary to permanently attach a stud member to one part of the garment that was to be connected to the other part. This was always objectionable in that the stud member could sometimes be mutilated in laundering, and the projecting stud would always product unsightly wrinkles in the garment material around the stud element during the laundering operation.

It is, therefore, one of the objects of this invention to provide a two-part snap fastener construction wherein the two parts can be separately engaged and carried in separated portions of the garment and then detachably engaged with each other for attaching the garment parts together.

Another object is to provide a novel type of stud member construction having a resilient portion and a rigid portion wherein the resilient portion serves to detachably hold the stud unit in the eyelet grommet attached to one part of the garment and the rigid portion has the usual snap fastener action with a resilient socket in another part of the garment. Thus, while in ordinary use the stud will not fall away from the garment when the garment parts are unfastened, it may, nevertheless, be removed for laundering purposes.

The full nature of the present invention, and further objects and advantages thereof, will be more apparent from the following description when read in connection with the accompanying drawings, in which:

FIG. 1 is a cross-sectional view of assembled stud and socket members and eyelet grommets on the garment parts to be attached together in accordance with my invention;

FIG. 2 is a side view of the detachable socket member;

FIG. 3 is a side view of the detachable stud member;

FIG. 4 is an end view of a garment cuff showing the stud and socket members in position ready to be assembled;

FIG. 5 is a modified form of construction wherein the resilient socket is attached permanently to one part of the garment and the stud element and eyelet grommets are substantially the same as the first form;

FIG. 6 is an end view of the garment construction showing the fastener elements of FIG. 5 ready for assembly; and

FIG. 7 is a modified form of the stud member.

The invention as represented in FIG. 1 comprises in general a resilient socket member **10**, a combination rigid and resilient stud member **11** and eyelet grommets **12** and **13** which may be secured in overlapping portions **14** and **15** of a garment to be secured together such as a cuff construction **16** shown in FIG. 4. The eyelet grommets **12** and **13** and the resilient socket member **10** are substantially the same as those disclosed in my prior Patent 2,683,908 except that the center openings of the eyelet grommets and the shank of the socket member are round instead of polygonal.

The combined rigid and resilient stud member consists of a tubular post **17** having a rigid bulbous portion **18** at one end, an intermediate reduced portion **19** and an

outwardly extending radial flange **20** at its opposite end joined to said post by radius **21**, and a resilient element **22** is provided that surrounds the post **17** and consists of a flange **23** and a series of resilient fingers **24** biased upwardly and outwardly from said flange. The fingers terminate in beaded tips **25** disposed in circumferentially spaced relation around the reduced section **19** of said post with the bulbous portion **18** of said post extending beyond said finger tips a substantial distance in an outwardly axial direction. The fingers **24** connect into the flange **23** through a radius section **26** dimensioned to have a nested fit into the radius **21** of the post **17** to prevent relative lateral movement of the post and the resilient element. As shown in FIG. 1, the stud member **11** may be adorned with a decorative head **27** wherein the inner face of the head **27** is formed with a recess **28** within which is seated the flange **20** of the post **17**. The flange **23** of the resilient element **22** is co-extensive with the rear face of the head **27** and is provided with circumferential flange **29** surrounding the edge of head **27** and having its free edge spun over against the outer face thereof as at **30**, as a means for holding all three parts of the stud member together as a single unit.

In the assembly of the stud and socket members of the first form of the invention, these members may function as a detachable cuff link for holding the open end of a cuff construction together and for this purpose, the socket element may first be assembled into one of the eyelet grommets such as at **12** while the combined rigid and resilient stud member **11** is assembled into the other eyelet grommet **13** with the fingers **24** of its resilient element having snap locking engagement with said grommet. It will be observed that with my improved construction, both the socket member and the stud member are detachably engaged in their respective eyelet grommets without danger of falling out even though the open end of the cuff is still separated. To connect the open end of the cuff, it is only necessary to axially force the socket and stud member together, they being retained in substantial axial alignment, while being carried in the cuff eyelet grommets and the rigid bulbous portion **18** will be releasably engaged with the resilient fingers **10***a* of the socket member **10**.

In the form shown in FIG. 5 a laundry-proof socket of a well-known type may be permanently attached to one part **14***a* of a garment and consists of a socket member **31** having resilient fingers **32**, said member being attached to the garment part by an attaching prong ring **33**.

The combined resilient and rigid stud member **11***a* is substantially the same as the one shown in FIG. 1 except for the manner in which the stud member is attached to the decorative head **27***a*. In this construction, the stud flange **20***a* is coextensive with the rear face of the head **27***a* and the flange **23***a* of the resilient element **22***a* is clinched about a circumferential bead **34** on said head as at **30***a*. Aside from the above difference, the stud member has the resilient fingers **24***a* for detachable engagement with an eyelet grommet **13***a* in the other part **15***a* of the garment. In this form wherein the socket is permanently attached to one overlapping portion of a garment, and an eyelet grommet is attached to another portion, my fastener is well adapted for use on nurses' garments or the like. When the stud member **11***a* is thus assembled, in the eyelet grommet **13***a*, it will not fall out from the garment even though not attached to the socket in the over-lying portion of the garment. To hold the garment parts **14***a* and **15***a* together, it is only necessary to axially force the rigid head **18***a* of the stud into the resilient fingers **32** of the socket member **31**.

FIG. 7 discloses a modified form of the stud wherein the resilient part and the rigid part of the stud are made from a single blank instead of two separate parts as dis-

closed in the first form. In this construction, the stud member consists of a tubular post 35 having a rigid bulbous-shaped head 36 at one end and a radial flange 37 at its opposite end. The post 35 is formed with an intermediate enlarged portion 38, joined to the head 36 by a shoulder 39 and contracted neck 40. A series of longitudinal slots 41 are provided in the post 35, said slots extending from the contracted neck 40, through the shoulder 39, enlarged post portion 38 and through the flange 37 intercepting its periphery. The slots 41 are for the purpose of permitting the enlarged portion 38 of the stud to resiliently give when the post is being inserted into the eyelet grommet. The stud member is completed by having a cap 42 that covers the outer face of the flange 37 and may be attached thereto by having its edge spun over about the flange periphery as at 43. While the slots 41 are here shown as extending through the entire width of the stud flange for convenience of manufacture, it is possible to make the stud with the slots 41 extending only a short distance into the flange and still obtain the required resilient action to the enlarged portion 38 of the stud member.

Changes may be made in the described structures without departing from the spirit of the invention, the scope of which should be determined from the following claims.

I claim:

1. In a garment construction, the combination with two parts to be detachably secured together wherein an eyelet grommet is attached to one part, of a separable snap fastener of the stud and socket type comprising a socket member carried by the other part, and a combined rigid and resilient stud member containing as a single unit a post having a rigid bulbous portion and a resilient portion consisting of a series of resilient fingers biased outwardly from said post and terminating in beaded ends arranged in a circle of larger diameter than the rigid portion, said rigid portion extending beyond said beaded ends of said fingers in an axial direction, said flexible fingers of said stud member having detachable snap action engagement with said eyelet grommet and said rigid stud portion having detachable snap action engagement with said socket member for holding said two garment parts together.

2. In a garment construction, the combination with two parts to be detachably secured together wherein an eyelet grommet is attached to each of said parts, of a separable snap fastener of the stud and socket type comprising a socket member having releasable snap action engagement with one of said grommets, and a combined rigid and resilient stud member containing as a single unit a post having a rigid bulbous portion and a resilient portion consisting of a series of resilient fingers biased outwardly from said post and terminating in beaded ends arranged in a circle of larger diameter than the rigid portion, said rigid portion extending beyond said beaded ends of said fingers in an axial direction, said stud resilient portion having detachable snap action engagement with the other of said grommets and said rigid portion having detachable snap action engagement with the socket member in said first grommet for holding said two garment parts together.

3. A snap fastener stud element for detachable connection to an eyelet grommet and a resilient socket element, said stud element comprising a tubular post having a rigid bulbous portion at one end and a radially extending flange at its opposite end, and a resilient element surrounding said post and having a series of flexible fingers biased outwardly relative to said post, said fingers terminating in beaded ends located inwardly of the bulbous portion of said stud, said element having a radial flange seated upon said post flange, and means for anchoring said two flanges together to hold said post and resilient element together as a unit.

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