July 2, 1957 E. KÜCHLER 2,797,465

GARTER FASTENER

Filed April 9, 1954

FIG. 1

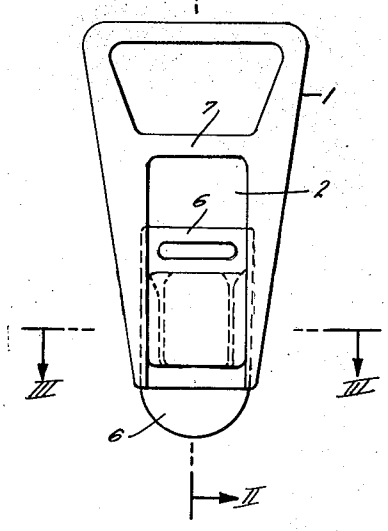


FIG. 2

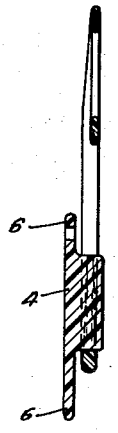


FIG. 3

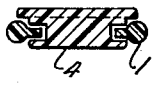


FIG. 6

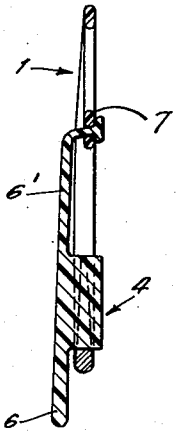


FIG. 5

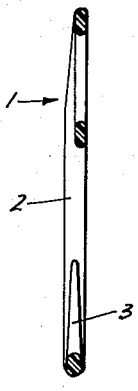
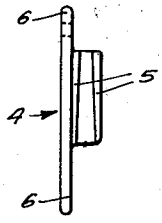


FIG. 4



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GARTER FASTENER

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3 Claims. (Cl. 24—247)

The present invention relates to a fastener for garters, suspenders, and the like, consisting of a framelike member and a button adapted to be inserted and to slide therein, one or both members having surfaces cooperating to wedge against each other to produce a clamping action for gripping a piece of thin wearing material between these members.

Fasteners of this general type have been known for many years. Generally, however, their fastening action is produced by the framelike member wedging the fabric between the upper surface of the button strap and the lower surface of the frame member, or between such upper surface and the lower surface of the button itself. In either event, therefore, the fastening action of these prior fasteners was produced to a substantial degree by the friction upon the upper surface of the button carrying strap. Due to such design, even the most advanced types of fasteners of this kind have the disadvantage that they easily damage the thin fabric which they are supposed to support since at least one of the two members is made of relatively non-elastic material. Also, such prior fasteners have the disadvantage that the soft, elastic button, usually of rubber, easily deteriorates and eventually tears off.

It is therefore the object of the present invention to overcome these disadvantages of the prior art and to design a garter fastener in which the two fastener elements automatically lock together and securely hold the stocking or other garment; in which both elements are made of relatively soft, resilient material and will not come apart when in use; will not deteriorate by the moisture of the skin; and, last not least, will not harm the most sensitive fabric fastened thereon.

A feature of the invention for attaining these objects resides—rather than in utilizing the upper surface of the fastener strap for the fastening or wedging action—in providing the outer sides of the button member with grooves whtich cooperate with corresponding springlike portions at the inner edges of the frame member in a conventional manner, except for the fact that, according to the invention, the grooves and springlike portions are parallel to each other but of wedgelike configuration in a vertical direction. Thus, by the cooperation of two separate clamping portions, i. e. the parallel surfaces and the spring action between them, on the one hand, and the wedgelike surfaces on the other hand, the forces occurring can easily be taken up by the arms of the frame member so that a considerably more elastic material can be used than was possible with previous garter fasteners. The interacting wedge shape of the spring-like portions and grooves, which, however, extend parallel to each other, ensures a garment, such as stockings, of being permanently gripped without permitting the arms of the frame member to be forced outwardly and the button part to slip therethrough.

Further objects, features, and advantages of the invention will appear from the following detailed description

of one embodiment thereof and the accompanying drawings, in which

Fig. 1 shows a front view of the supporting and clamping elements of a garter fastener in operative position;

Fig. 2 shows a section taken along line II—II of Fig. 1;

Fig. 3 is a section taken along line III—III of Fig. 1;

Fig. 4 is a side view of the clamping or fastening element alone;

Fig. 5 is a section similar to Fig. 2 but only of the fastening element; and

Fig. 6 is a section similar to Fig. 2 showing a modification of the garter fastener.

Referring to the drawings, the fasener element 1 has a lower part 2 of framelike design which is adapted to receive a square button 4 so as to slide therein. For this purpose, the inner edges of the lower half of the frame 2 are provided with parallel raillike projections 3 which act as springs, and are adapted to slide within parallel grooves 5 of the square button 4 each of the grooves 5 being formed by a pair of flanges 5'. The upper and lower surfaces of both the rails 3 and the grooves 5 are converging in upward direction so that, if a garment (not shown) is clamped between the parts 1 and 4, and a tension is applied thereto in downward direction, such tension will automatically increase the interlocking effect of these wedgeshaped surfaces and the fastening action as well on the respective garment. For easier manipulation, the button strap 4 may be provided with upper and lower tabs 6, and the upper tab may be extended and secured to the cross bar 7 of the element 1 to form a hanger 6' to prevent the button strap 4 from being lost when not in use as shown in Fig. 6. Also, the thickness of the fastener element 1 may gradually increase in downward direction to strengthen the lower part 2 thereof which, in cooperation with the button 4, has to bear the downward strain applied thereto by the respective garment.

Although in the embodiment shown in the drawings, the resilient projections 3 are provided on the fastener element 1 and the cooperating grooves 5 on the button 4, the same effect will also be obtained if the position of these interlocking portions be reversed and the grooves be provided in the element 1 and the projections on the button 4.

The same result will also be obtained if the position of the two fastener elements 1 and 4 be reversed by making the button part the main fastener element which is secured to the garter, and the frame member to be slidable thereon.

Even though the new fastener may be made of any kind of material, highly elastic plastics are preferred since they are less liable to wear out or tear a sensitive fabric such as a sheer stocking than any other kind.

Having thus described my invention in detail, what I claim is:

1. A garter fastener comprising, in combination, a frame member having upper and lower portions and formed with an elongated cutout extending between said upper and lower portions to provide said frame member with a pair of side portions separated from each other by said cutout; and a fastening button extending in an operating position thereof through said cutout between said side portions and being movable along said side portions of said frame member, said side portions of said frame member having, respectively, inner side edges directed toward each other and said button having outer side edges directed in said operating position towards said inner side edges, respectively, to provide a pair of inner side edges respectively directed toward a pair of outer side edges, one of said pair of side edges respectively having elongated resilient projections located opposite each other in said cutout and extending substantially parallel to each other along said side portions of said frame

member and the other of said pair of side edges being formed respectively with elongated grooves substantially parallel to each other in which said projections are respectively located when said button is in said cutout adjacent said lower portion of said frame member, said projections and said grooves each having one end larger than its opposite end and being wedge-shaped between said ends, said projections being substantially in one plane, gradually increasing in thickness in a direction normal to said plane and being respectively wedged in said grooves when said button is adjacent said lower portion of said frame member.

2. A garter fastener comprising, in combination, a frame member having upper and lower portions and formed with an elongated cutout extending between said upper and lower portions to provide said frame member with a pair of side portions separated from each other by said cutout; and a fastening button extending in an operating position thereof through said cutout between said side portions and being movable along said side portions of said frame member, said side portions of said frame member having, respectively, inner side edges directed toward each other and said button having outer side edges directed in said operating position towards said inner side edges, respectively, said frame member having a pair of elongated resilient projections substantially parallel to each other and extending respectively from said inner side edges of said frame member along the bottom part thereof into said cutout, and each of said outer side edges of said button being formed with an elongated groove, said grooves being substantially parallel to each other, and said projections being respectively located in said grooves when said button is in said cutout adjacent said lower portion of said frame member, said projections and said grooves each having a bottom end larger than its opposite end and being wedge-shaped between said ends, said projections being substantially in one plane, gradually increasing in thickness in a direction

normal to said plane and being respectively wedged in said grooves when said button is adjacent said lower portion of said frame member.

3. A garter fastener comprising, in combination, a frame member having a bottom portion and being formed with an elongated cutout extending upwardly from said bottom portion; and a clamping member movable in longitudinal direction of said cutout and extending in an operating position through said cutout, said members being formed from flexible plastic material, one of said members having a pair of substantially parallel projections located substantially in one plane and respectively on opposite sides of said cutout and the other of said members being formed with a pair of substantially parallel grooves each formed by a pair of flanges, said projections being when said clamping member is in said operating position respectively located in said grooves, each of said projections having one end which is in a direction normal to said plane thicker than its opposite end and gradually increasing in thickness between said ends so that said projections are wedge-shaped in longitudinal direction and each of said grooves having one end larger than its opposite end and being wedge-shaped in longitudinal direction, said projections being respectively wedged in said grooves when said clamping member is adjacent said bottom portion of said frame member, whereby said flanges forming said grooves are flexed in a direction substantially normal to said plane.

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