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3,249,978

GARTER FASTENER

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Fig. 1.

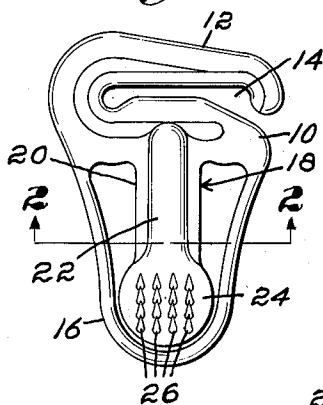


Fig. 2.

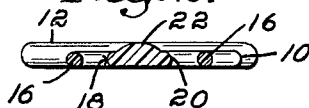


Fig. 3.

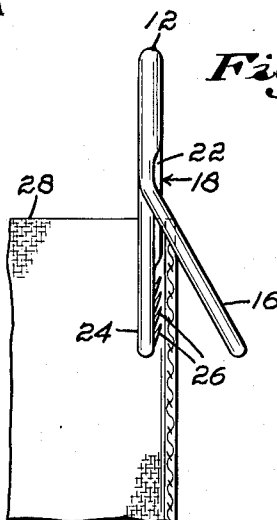


Fig. 4.

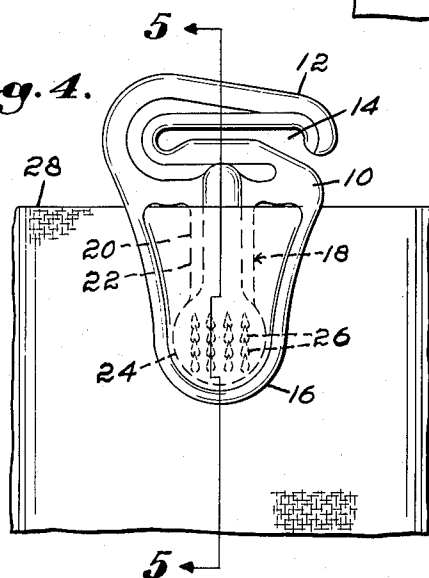


Fig. 5.

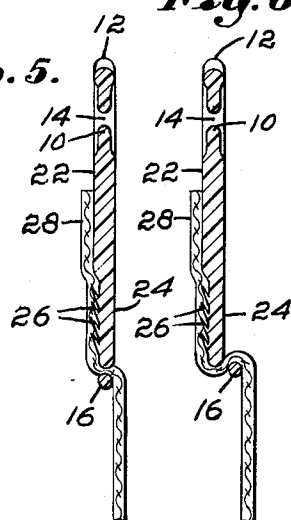


Fig. 6.

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1

3,249,978

GARTER FASTENER

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1 Claim. (Cl. 24-246)

The present invention relates to fastening devices and more specifically to fastening devices for use with a garment or the like.

An object of the present invention is to provide a garment fastener which utilizes co-operative engagement between a tensioning element and an attaching element.

A further object of the present invention is to provide a fastening device to hold an article of clothing, such as hose to a support through the use of a series of smooth sided projections and a co-operative tensioning element.

Other objects of the invention will, in part, be obvious and will, in part, appear hereinafter.

In the drawings:

FIG. 1 is a top plan view of the applicant's fastener;

FIG. 2 is a section taken on line 2-2 of FIG. 1;

FIG. 3 is a side elevation with the tensioning loop raised and the stocking shown in section brought up over the protuberance but not touching;

FIG. 4 is a top plan showing the fastener device of FIG. 1 engaged to a section of material, the projections dotted in;

FIG. 5 is a section taken on line 5-5 of FIG. 4; and

FIG. 6 is a section showing a second possible position of the loop portion.

Referring to the drawing, there is shown a fastening device comprising a base portion 10, a support engaging portion 12, integral with said base portion 10, in the form of a loop open at one side edge to form a slot 14, a tension loop portion 16 extending from the opposite side of said support engaging portion 12 and an attaching portion 18 extending from the base portion 10 and lying within the area defined by the tension loop portion 16 as shown in FIG. 1. The applicant has formed his fastening device of a plastic material having resiliency and elastic memory for a purpose which will be explained hereinafter. It is possible to close the entrance of the slot 14 for certain applications or, if required the slot may be moved to intersect the upper part of the support engaging portion 12 so that two arms extend spaced from each other as is frequently found in devices of this type.

In other words, the support engaging portion 12 may be of several configurations capable of engaging a garment (not shown).

The attaching portion 18 comprises a base part 20 having the configuration of a pendulum, that is a rectangular portion to which a circular portion is integrally associated as shown in FIGS. 1 and 4. A rib 22 protrudes from a surface of the rectangular portion of the attaching portion 18 and also at one end extends onto the base portion 10 and at its other end merges into the circular portion 24. A series of projections 26 are formed on the surface of the circular portion 24 on the same side of the fastener as the rib 22. The fastener device itself is formed of a plastic material and the projections are smooth sided and substantially rigid and taper from their bases to relatively sharp tips. The projections 26 preferably extend outwardly and upwardly from the plane of the circular portion 24 at an angle of 30 to 80 degrees. They are preferably closely spaced in parallel rows in which they all extend in the same direction and the rows are close enough together so that the tips of projections in one row extend above the sides, or partially overlap the projections in an adjacent row.

2

The tension loop portion 16 is connected adjacent opposite ends of the base portion 10 and the free terminal end thereof is shaped to conform approximately to the external configuration of the circular portion 24. The tension loop portion 16 is in fairly close proximity and spaced from the circular portion 24 and then angled away to its integral connection on each end of the base portion 10 as shown in FIG. 1.

To engage a stocking 28 to a supporting structure, such as a girdle or the like (not shown) a tab extending from the girdle or the like is engaged in the usual manner with the support engaging portion 12. The tension loop portion 16 is then bent at approximately its points of juncture with the base portion 10 away from the attaching portion 18 and the end of the stocking is brought up over the projections 26 and under the tension loop portion 16. When the end of the stocking has reached beyond the projections 26, the tension loop portion 16 is released thereby engaging the fibers of the stocking with the projections 26. The stocking 28 is also brought up over a portion of the rib 22. When the tension loop portion 16 is released, a force is exerted downwardly against the projections 26 on the stocking 28 and the rib 22 assists in the engagement since its upper surface is either on a level with point of the projection or slightly below forcing the stocking 28 into an over-under relationship.

The elastic memory of the material will bring the tensioning loop portion 16 back to the same plane as the base part 20 or slightly in back of that plane as shown in FIG. 6.

The spaced relationship between the loop portion 16 and the base part 20 may be such as to create a snapping or interference action when the material of the stocking is placed between the two members. This action is not absolutely necessary in ordinary holding requirements and would depend to some extent on the thickness of the material and the elastic memory of the material used. Heavier stocking material would more than likely require the mentioned locking action. This action could be enhanced by forming the loop and the base part at a specific point without clearance so that they remain in sideways abutting relationship. That is, in abutting relationship on the same plane.

It would, of course, be possible to place the projections 26 on the surface of the tension loop portion 16. In this case, they would still face in the same general direction as when they are placed on the circular portion 24. Of course, where the projections 26 are placed on the loop portion 16, they would not be placed on the circular portion 24. The action of the loop and the projections would still be similar except in this case the tensioning device could be brought down below or in other words opposite from that utilized by the first device. Obviously, the projections 26 could be angled in an opposite direction from that originally disclosed, that is, the projections would be directed away from the base portion 10.

While there has been illustrated and described a preferred embodiment of the invention, it should be understood that the invention is best described by the following claim.

I claim:

A one-piece fastening device comprising a base portion, a support engaging portion integral with and extending from one edge of said base portion, a tensioning loop portion having an arced portion, said arced portion having a pair of legs extending therefrom, each of said legs being integral with said base portion, an attachment portion integral with and extending from said base portion between the points of juncture of said legs and said base portion, said attachment portion including a terminal end spaced from said tensioning loop portion and a centrally disposed reinforcing rib extending longitudinally

3

along a substantial length of said attachment portion from the said base portion toward the terminal end thereof and projecting laterally outwardly from one surface thereof, and a series of smooth-sided projections integral with and extending from one surface of at least one of said attachment portion and said tensioning loop portion, proximate the terminal end of said attachment portion, each of said projections projecting from its base at an acute angle thereto and tapering from its base to a relatively sharp tip projecting laterally from said attachment portion to at least the same extent as said reinforcing rib, said tensioning loop portion being adapted to cooperate with said attachment portion to hold a part in engagement with said fastening device.

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4

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