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FASTENING DEVICE FOR WEARING APPAREL

Filed Feb. 19, 1965

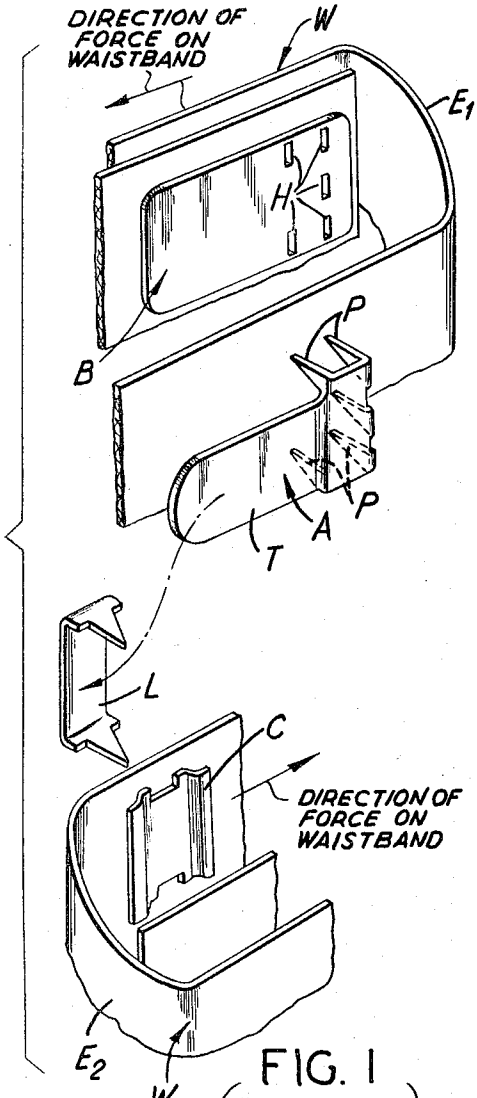


FIG. 1
(PRIOR ART)

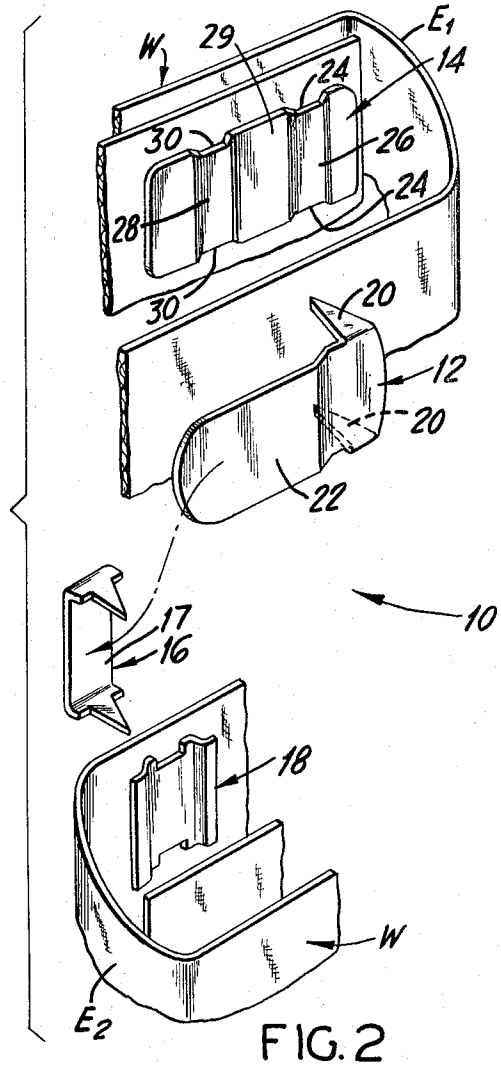


FIG. 2

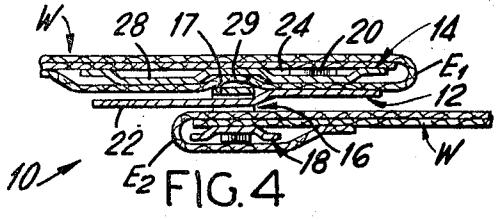


FIG. 4

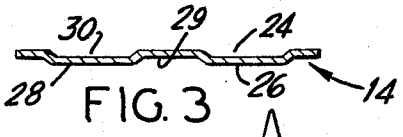


FIG. 3

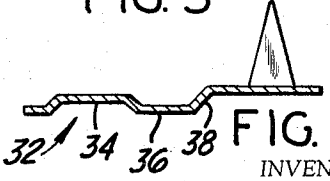


FIG. 5

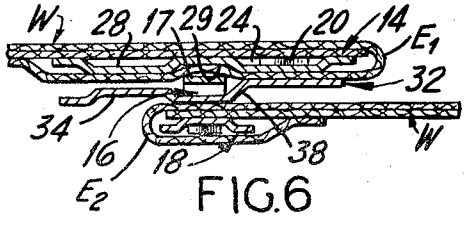


FIG. 6

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FASTENING DEVICE FOR WEARING APPAREL

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This invention relates generally to fastening devices for wearing apparel and more particularly to improvements in that type of fastener having a tongue detachably engageable with a loop member.

One type of fastener used commonly today, particularly on the waistband of trousers, is comprised of outer and inner, spacedly opposed plates secured to each other and to one portion of the waistband and a bridgelike loop portion secured to the other portion of the waistband by means of its own back plate. The inwardly facing outer plate disposed on the inside surface of one end of the waistband is intended to serve as a tongue and is adapted to releasably engage the loop portion. The outer plate is further provided with a plurality of prongs on the base portion thereof, the prongs being adapted to pierce the fabric. The prongs pass through suitably placed holes at one end of the inner plate and are then crimped. The inner plate is concealed within the fabric. In this manner, the inner plate is spaced from the offset tongue of the outer plate. The loop portion faces outwardly and is positioned on the outer surface of the opposite end of the waistband.

Various versions of this typical prior art device are available and are quite popular. They provide a relatively thin closure that is unlikely to become crushed and inoperative during crimping at assembly or subsequent pressing of the garment. However, it has been found that unless the two portions of the waistband are under continual tension, that is, being pulled in opposite directions, there is a tendency for the flat tongue to inadvertently come loose from the loop. This could be a fairly common occurrence for individuals who have lost weight since the pants were fitted and whose trousers fit loosely around the waist.

In addition to the undesirable result encountered by the user, the prior art devices suffer a shortcoming of particular importance to the apparel manufacturer. The fastener plates are usually fed and crimped to the fabric by an automatic or semi-automatic machine. However, due to the asymmetry of the prior art fasteners, or at least the inner plate thereof, it was necessary to orient the parts before insertion in the feeding machine. Sometimes the operator had to stop production in order to orient an improperly fed part after it was delivered from the hopper.

The present invention is directed towards overcoming the aforementioned shortcomings in order to improve the prior art devices. Depressions are provided in one or both plate portions so that there is a slight interference fit between the tongue portion and the loop portion. The fastener is thereby securely held regardless of the magnitude of opposed forces on the two ends of the waistband. In addition, the plates are made symmetrical thus avoiding the need for the operator to momentarily stop production for orientation purposes. All this is accomplished without adding to the size, weight, or cost of the devices.

Accordingly, it is an object of the invention to provide an improved fastener for wearing apparel.

Another object is to provide improved retaining means for the fastener of an article of wearing apparel.

An additional object is to provide a symmetrical element for a fastening device for an article of wearing apparel.

A further object is to provide positive locking means

for an apparel fastener without adding to the size, thickness or cost thereof.

These and other features, objects and advantages of the invention will, in part, be pointed out with particularity and will, in part, become obvious from the following more detailed description of the invention taken in conjunction with the accompanying drawing which forms an integral part thereof.

In the various figures of the drawing, like reference characters designate like parts.

In the drawing:

FIG. 1 is an exploded pictorial view of the components comprising the prior art device;

FIG. 2 is a pictorial view similar to FIG. 1 but of the components of the present invention;

FIG. 3 is an enlarged sectional side elevation view of the rear plate employed with the instant invention;

FIG. 4 is an enlarged sectional side elevation view of the assembled components of the present invention;

FIG. 5 is an enlarged sectional side elevation view of an alternative embodiment of the outer plate; and

FIG. 6 is an enlarged sectional side elevation view of the assembled components utilizing the alternative construction of the FIG. 5 embodiment.

Referring now to the prior art illustration of FIG. 1 it will be noted that outer plate A is provided with a plurality of depending prongs P. The prongs pierce the fabric at one end E_1 of waistband W and, in the assembled condition, pass through holes H and are bent over inner plate B which is concealed between layers of the fabric. Outer plate A is formed with an offset tongue T which maintains the two plates in spaced, parallel relation. In addition, a two-part loop member L is secured to its own backing plate C and to the fabric proximate the other end E_2 of the waistband W to releasably engage the tongue portion T of front plate A.

The tongue T slidably fits into loop L and the two parts are normally biased in opposite directions. However, it has been found that under certain conditions the prior art fasteners had a tendency to inadvertently open if the opposed forces were not maintained on the two ends of the waistband. Furthermore, the improvements comprising the present invention have been found to be advantageous because fasteners of this type are usually applied by high speed, mass production techniques It has heretofore been necessary to interrupt production in order to reorient any of the asymmetrical back plates that were improperly fed from the supply hopper. Reference to FIGS. 2–4, in particular, will disclose the means whereby the present invention overcomes the aforementioned shortcomings in the prior art.

Fastener assembly **10** is comprised of a front plate **12** a rear plate **14**, a loop member **16** having a cross bar **17**, and a base plate **18** for the loop member. There is provided a pair of rearwardly extending prongs **20** at each side of one end of front plate **12** and an offset tongue portion **22** at the opposite end of the front plate. Tongue portion **22** is stepped outwardly from the fabric in the assembled condition.

One improvement over the prior art may be found in the formation of the rear plate. Therein, in addition to side notches **24** and a transverse depression **26** intermediate thereto and proximate one end, there is provided a second, transverse depression **28** and side notches **30** proximate the opposite end. Thus the rear plate is substantially symmetrical and, regardless of the manner in which it is fed from the hopper to the fabric, the prongs **20** of the front plate may be bent around one pair of notches in the rear plate and will lie flat within either depression without further orientation. Another benefit accrues from the symmetry of the rear plate and

iat is an improvement in the holding power of the fas-ner. As may best be seen in FIG. 4, the cross bar **17** f loop member **16**, in the assembled condition, is seated i channel **29** defined by the two depressions **26** and **28** i the rear plate **14**. This provides additional holding nd therefore the fastener is less likely to accidentally pen than the prior art devices.

Another embodiment, illustrated in FIG. 5 and FIG. 6, rovides still further holding power. Front plate **32** is ormed with an outwardly facing transverse depression **4** on the free or spaced end of tongue portion **36** there-f; that is, depression **34** occupies part of the space be-veen the tongue portion and the rear plate. This con-ruction provides a positive lock since the tongue must e forced, with gentle pressure, underneath the loop se-ured to the waistband in order to close the fastener. he loop then is releasably captured between depression **4** and the offset bend **38** of tongue **36**. Therefore, ieans are provided to resist any movement in a direction iat will release or open the fastener because the depres-on restrains the loop portion.

Retaining means similar to that mentioned hereinabove i conjunction with the FIG. 6 embodiment is known in ie art. For example, a U.S. Patent, No. 1,257,026, was sued to J. J. Rundus on February 19, 1918, for Fasten-ig Means for Shoes. Therein, a U-shaped tongue is rovided with a transverse depression extending across ne end thereof. At assembly, the tongue cooperated /ith a plate having an upwardly offset portion in order o provide the locking action. It should be noted, how-ver, that this particular example of the prior art is quite iick and bulky and, while perfectly acceptable for shoes t the time of patenting, would not be compatible with resent day design of clothes.

The embodiments described hereinabove offer increased olding power in a very simple fastener without adding o the cost thereof. The physical size of the device is ot substantially increased and yet the fastener is more eliable in that it is not as likely to accidentally open s the prior art fasteners. Of particular importance to he clothing manufacturer, who is concerned with hold-ig down production costs, is the fact that the compo-ents of the instant invention lend themselves to high peed, mass production techniques and, because of their ymmetry, do not require orientation by the operator at he time of assembly of the garment.

As used hereinabove, the inward and outward direc-on of the depressions in the front and rear plates are letermined in relation to the wearer's body.

There has been disclosed heretofore the best embodi-nents of the invention presently contemplated and it is o be understood that various changes and modifications nay be made by those skilled in the art without depart-ng from the spirit of the invention.

What is claimed is:

1. A fastening device for attachment to one of two nds of an article, said device being adapted to mate with . loop integral with the second end of the article, said astening device comprising:

(a) a first, substantially rectangular sheet metal clip member having a first depression formed proximate the first end thereof and a first pair of notches formed in the elongated side edges thereof, the first pair of notches being disposed on either side of said first depression, said clip member having a second depression formed proximate the second end thereof, and a second pair of notches formed in the same elongated side edges of said clip member as said first pair of notches, the second pair of notches being disposed on either side of said second depression whereby said clip member is substantially symmetrical; and

(b) a second, substantially rectangular sheet metal tongue member having a pair of prongs extending perpendicularly from the elongated side edges thereof proximate the first end, said tongue member having and offset portion defining the second end thereof of opposite said prongs, said prongs being adapted to pierce the article and be crimped over either one of the pair of notches in said clip member, whereby said offset portion is held parallel to, but slightly spaced from, said clip member in order to releasably accommodate the mating loop therebetween.

2. The device of claim **1** wherein said tongue member includes a depressed area formed in the offset portion proximate said second end, said depressed area in the assembled condition extending towards one of the two depressions in said clip member whereby the mating loop is releasably captured between said tongue member and said clip member at a point intermediate said tongue member depression and the opposite end of said tongue member.

3. In a fastening device having first and second, substantially rectangular plate members spacedly crimped to each other through one of the two ends of an article, the second plate member being defined by a first end in overlying abutment with the first plate member and a second, offset end spacedly disposed from and in a plane parallel to that of the first plate member, and a loop member secured to the second end of the article whereby, in the assembled condition, the fastening device is adapted to releasably retain the loop member, improved means to retain the members in the assembled position, said means comprising:

(a) first and second depressions formed in the first plate member proximate the ends thereof, said depressions being substantially the same size as each other, both said depressions being spaced from the edges of the first plate member by substantially the same dimensions; and

(b) first and second pairs of edge notches disposed on either side of said first and second depressions, respectively, said pairs of edge notches being substantially the same size and shape and having the same dimensional relationship to their respective depressions, whereby the first plate member is substantially symmetrical about its longitudinal axis and about a central axis transverse to and in the same plane as the longitudinal axis.

4. The device of claim **3** wherein the second plate member is provided with a depression in the second end thereof, said depression in the assembled condition extending towards one of the two depressions in the first plate member, said depression in the second plate member, in combination with the first end of the second plate member and one of the depressions in the first plate member defining a channel adapted to releasably capture the loop member in the assembled condition.

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