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3,209,370

ADJUSTABLE STIRRUP FOR STRETCH PANTS

Filed Sept. 15, 1964

2 Sheets-Sheet 1

Fig. 1

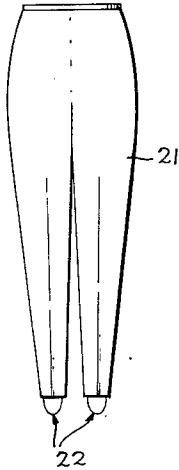


Fig. 2

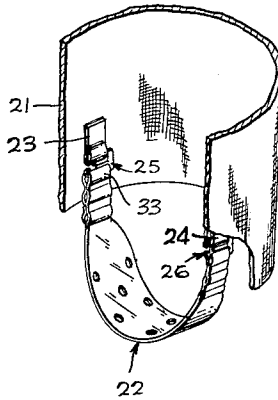


Fig. 3

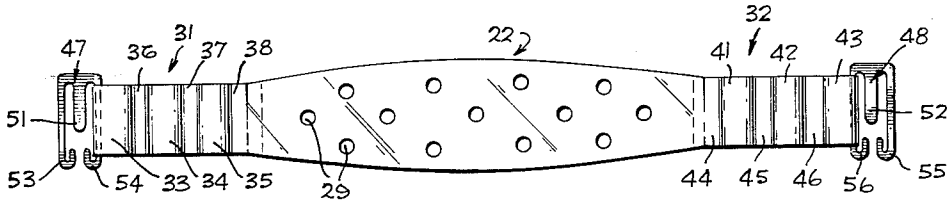


Fig. 4



Fig. 5

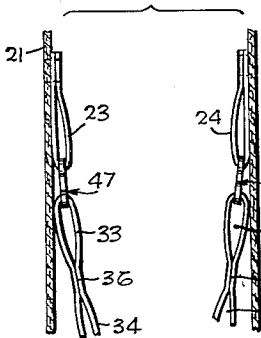
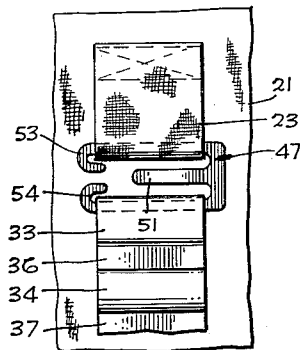


Fig. 6



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Fig. 7

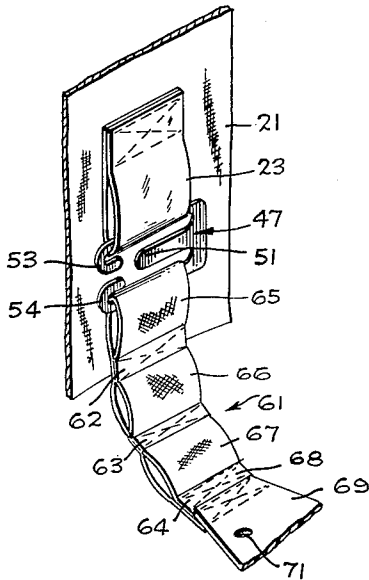


Fig. 8

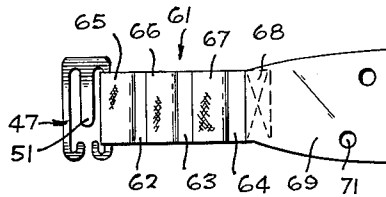


Fig. 9

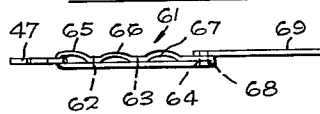


Fig. 10

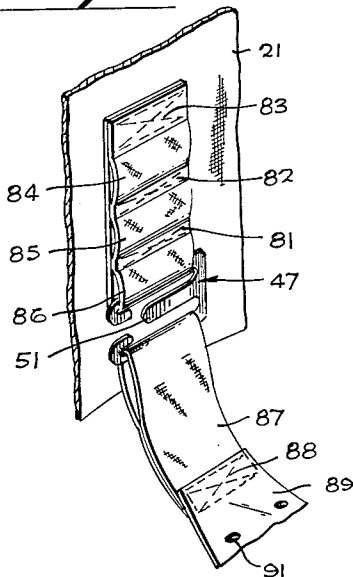


Fig. 11

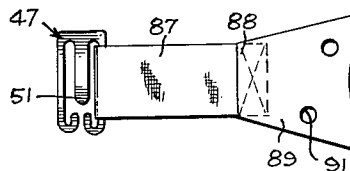
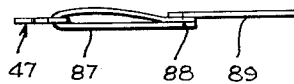


Fig. 12



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ADJUSTABLE STIRRUP FOR STRETCH PANTS
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 6 Claims. (Cl. 2-232)

This invention relates to an adjustable stirrup for stretch pants and more particularly to a stirrup which is ventilated for comfort, invisible for footwear freedom, detachable without metal bulk and adjustable for perfect fit.

In order to provide a trim fit and a neat appearance, stretch pants, such as ski pants and slacks, are tapered to the ankle and provided with some means, generally in the form of a flexible stirrup extending under the instep, to securely anchor the lower open ends of the pant legs and maintain the taut lines which give stretch pants their attractive appearance. In the past, elastic bands adapted to pass under the arch of the foot have been sewn to the lower open ends of the pant legs for maintaining the taut stretched appearance of the fabric; however, this arrangement has a number of shortcomings.

The elastic web necessarily being of relative heavy material causes the feet to perspire excessively and tends to curl or bunch up into an uncomfortable roll under foot. When pants employing such devices are worn with low-cut shoes, the webs frequently show between the tops of the shoes and the lower ends of the pant legs; and even when the webs are of the same color and material as the stretch pants themselves, they detract measurably from the overall neatness and appearance of the pants.

In practice, stretch pants are manufactured in a variety of lengths, but it is essential to be able to adjust the length of the stirrups in order to assure a perfect fit for the between-size wearers. With the elastic webbing sewn in place major tailoring efforts may be required in order to make such adjustments to fit the intermediate sizes. Permanently fixed elastic webs also make it awkward to get into and out of the stretch pants, because they are permanently attached within the narrow pant leg and there is not sufficient space to permit the foot to be inserted and removed without a great deal of trouble. Elastic webbing across the bottom of the pant legs further makes cleaning and pressing very difficult.

The subject invention avoids all of these deficiencies, while offering a number of advantages heretofore unknown in this field.

Briefly stated, one preferred embodiment of the invention consists essentially of a strap or stirrup which is formed of a thin plastic material having a certain degree of resilience, and being flexible and transparent, so that the stirrup is not readily visible between the top of the shoes and the lower edge of the pants. The intermediate or central portion of the stirrup is relatively wide and tapered toward each of its narrow ends, and this portion may be perforated to provide ventilation for comfort, so that the tendency to cause perspiration is alleviated. The relatively narrow outer ends of the stirrup are doubled back on themselves and heat sealed, welded or otherwise secured along narrow transverse bands to provide a plurality of transverse tubular pockets or loops. A separate small strip of fabric is doubled back to form a tubular pocket or loop and its ends are secured to the inner side of the fabric adjacent the bottom of each of the pant legs for engagement by a U-shaped clip, having a center prong and inwardly curved ends. One leg of the clip is inserted in the loop in the trouser leg and the other leg of the clip is inserted in one of the tubular pockets in the stirrup. It will be apparent that

the clips may be inserted in any desired one of the plurality of pockets to shorten or lengthen the portion of the stirrup between the two loops in each of the trouser legs and thereby adjust and adapt the individual stirrup for the particular size of leg length of the wearer of the stretch pants. The excess pockets may be removed if desired, by cutting through the outer ends of the bands beyond the pockets being used. This arrangement also serves to vary the amount of tension on the stretch pants to suit the personal desires of each wearer in order to provide the maximum comfort and the optimum appearance of the stretch pants.

One object of the present invention is to provide an adjustable stirrup for stretch pants which is ventilated for comfort, invisible for footwear freedom, detachable without metal bulk and adjustable for perfect fit.

Other objects and many attendant advantages of the present invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

FIGURE 1 is a pictorial view of a pair of stretch pants with the adjustable stirrups of the present invention attached thereto;

FIGURE 2 is a perspective view of one preferred embodiment of the adjustable stirrup of the present invention attached to the bottom of one leg of a pair of stretch pants with portions of the fabric broken away to illustrate clearly the construction and method of attachment of the stirrup;

FIGURE 3 is a plan view of one preferred embodiment of the adjustable stirrup of the present invention with a pair of clips attached to the outer tubular pockets at the outer ends of the stirrup;

FIGURE 4 is an elevational view of the stirrup of FIGURE 3;

FIGURE 5 is a detailed fragmentary sectional view on a larger scale to illustrate the attachment of one form of the stirrup to the loop sewn into the pants;

FIGURE 6 is a side view of the loop, clip and one of the tubular pockets on the stirrup shown in FIGURE 5;

FIGURE 7 is a detailed fragmentary view in perspective illustrating one modification of the present invention wherein a plurality of pockets are formed in a doubled strip of fabric or elastic webbing which is sewn to the transparent plastic stirrup;

FIGURE 8 is a plan view illustrating the stirrup shown in FIGURE 7;

FIGURE 9 is an end view of the modification shown in FIGURES 7 and 8;

FIGURE 10 is a pictorial view of another modification wherein the plurality of pockets are formed in an elongated strip of fabric doubled over and secured to the inside of the pant leg with only one loop formed in the end of the stirrup, but utilizing the same type of U-shaped clip;

FIGURE 11 is a plan view of the end portion of the stirrup shown in FIGURE 10; and

FIGURE 12 is an end view of the stirrup shown in FIGURES 10 and 11.

Referring now to the drawings in detail and more particularly to FIGURES 1 and 2, a pair of stretch pants 21 are shown which are tapered to a very narrow bottom portion on each of the two legs with a pair of stirrups 22 attached thereto.

In FIGURE 2, a portion of the fabric of one of the legs of the pants 21 has been cut away to show the manner in which the stirrup 22 may be attached to a loop 23 on one side and a loop 24 on the opposite side of the pant leg by the clips 25 and 26 extending through the outer tubular pockets 33 and 43 on the stirrup 22. The

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loops or tubular pockets 23 and 24 are preferably formed of narrow strips of the same material used in the pants or an elastic web, which are doubled over and sewn to the inside of pant legs as shown.

The stirrup 22 is preferably formed of a thin transparent plastic which is flexible and slightly resilient. The central portion of the stirrup 22 is somewhat wider than the outer end portions and is provided with a plurality of perforations 29 which permit breathing and provide ventilation to minimize the perspiring which might be induced by a strip of relatively impervious material under the arch of the foot.

As shown in FIGURE 3, the central portion of the stirrup 22 is relatively wider than the narrow end portions 31 and 32 and is provided with perforations 29 forming a regular pattern. The end portions 31 and 32 are integrally formed by doubling over the narrow end strips of plastic with straight parallel edges and forming a plurality of tubular pockets 33, 34 and 35 at one end by heat sealing the plastic across the narrow transverse bands 36, 37 and 38.

A similar arrangement with a plurality of pockets 41, 42 and 43 is provided at the opposite end by doubling the narrow end strip of plastic material and heat sealing at 44, 45 and 46. The formation of these pockets is clearly illustrated in the end view of FIGURE 4.

Clips 47 and 48 are provided. Each of these consists of a U-shaped member, with a center prong as indicated at 51 and 52, and inwardly curved outer legs 53, 54, 55 and 56.

As shown in the sectional view of FIGURE 5 and the inside view of FIGURE 6, one leg 54, 56 of each of the clips or links 47 and 48 is inserted in the pockets 33 and 43 of the stirrup 22, and the other legs 53, 55 are inserted in the loops 23 and 24. With the pants 21 made in one standard size, this arrangement would be suitable for a tall person, however, a person of average height may find that this position of the clip does not pull the stretch pants taut and the outer tubular pockets 33 and 43 may be removed by cutting through or just beyond the heat sealed or welded bands 36 and 46, so that the tubular pockets 34 and 42 may now be engaged by the clips 47 and 48. For a shorter person, the tubular pockets 34 and 42 may be removed by cutting through the heat sealed or welded bands 37 and 45 with the clips 47 and 48 being inserted in the pockets 35 and 41 to provide a taut neat appearance of the stretch pants 21.

Clearly it is not necessary to cut off the pockets not being used; however, the feature of the invention which allows this permanent removal of the excess and unused portion of the stirrup eliminates all unwanted bulk from the pant thereby insuring the smoothest possible line in the narrow ankle region.

In the modification illustrated in FIGURES 7, 8 and 9 a piece of fabric from the stretch pants 21 and the fabric or elastic webbing forming the loop 23 are indicated by the same reference numerals as is the clip or link 47 with the center prong 51.

In this modification, however, the relatively narrow strip 61 is formed of fabric, which may be the same material as the stretch pants 21 or elastic webbing, doubled over and sewn along the lines 62, 63 and 64 by a double row of stitching to form the pockets 65, 66, and 67. The doubled over fabric is securely stitched along the portion 68 to the wider intermediate portion of the stirrup 69 which is preferably formed of transparent flexible plastic with a number of perforations 71 similar to those shown in FIGURES 2 and 3.

This stirrup would be used in the same manner as the one shown in FIGURES 2 through 6 by cutting off one or more of the loops 65 and 66 at both ends of the stirrup in order to adjust the stirrup to the proper length for providing the desired tension and neat appearance on persons of various different heights.

Another modification is shown in FIGURES 10, 11

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and 12 wherein a piece of fabric is doubled over and sewn along the narrow transverse lines 81 and 82 and then sewn or otherwise secured to the fabric of the stretch pants 21 by a heavy double row of stitching at 83 to form the transverse tubular pockets or loops 84, 85 and 86 which are attached to the fabric of the stretch pants 21.

In this modification, a single loop 87 of flexible fabric or elastic webbing is secured by stitching as indicated at 88 to the transparent flexible strap 89 which goes under the arch of the foot and is likewise provided with a plurality of perforations indicated by the numeral 91.

In this modification, the clip or link 47 with a prong 51 is inserted in the loop 87 and then inserted in one of the pockets 84, 85 and 86 to provide the proper fit of the stretch pants 21.

With this arrangement, as shown in FIGURES 10, 11 and 12, the stitching indicated at 82 and 81 may be through the material of the stretch pants 21 and left as a permanent part of the pants so that the adjustment can be made from time to time as desired or necessary, or the plurality of tubular pockets or loops 84, 85 and 86 may be formed separately and the strip sewn as indicated at 83, so that any one or more of the pockets may be removed by cutting through the portions 81 and 82 to provide the desired fit and taut appearance for a person of a particular height.

It will be apparent that the novel adjustable stirrup of the present invention is ideally suited for use with stretch pants, since it is ventilated for comfort, invisible for footwear freedom and neat in appearance, and is also detachable without any metal bulk on the pants themselves to interfere with cleaning and pressing, and the stirrup may be adjusted for perfect fit and a neat taut appearance on a person with a tall, average or short figure.

Obviously many other modifications and variations of the present invention may be made within the scope of the following claims.

What is claimed is:

1. In combination with a pair of stretch pants the improvement comprising:
 - (a) Four strips of material, each strip being doubled over and secured to opposite sides adjacent the bottom of each pant leg to form tubular pockets;
 - (b) A pair of stirrups each having a relatively wide intermediate portion formed of thin flexible transparent plastic with relative-narrow end portions, said end portions being doubled over and secured along a series of spaced transverse lines to form a plurality of transverse tubular pockets; and
 - (c) A pair of U-shaped clips for each of said stirrups said clips having opposite legs, one of said legs on each clip being inserted in a pocket in one of said strips and the other leg being inserted in a pocket in one of said stirrups.
2. In combination with a pair of stretch pants the improvement comprising:
 - (a) Four first strips of material, each strip being doubled over and secured to opposite sides adjacent the bottom of each pant leg to form a transverse tubular pocket;
 - (b) A pair of stirrups each having a relatively wide intermediate portion formed of thin flexible transparent material, four relatively narrow second strips of material doubled over and secured along a series of spaced transverse lines to form a plurality of transverse tubular pockets, one of said second strips being secured to each of the opposite ends of each of said intermediate portions; and
 - (c) A pair of U-shaped clips for each of said stirrups, said clips having opposite legs, one of said legs on each clip being inserted in a pocket in one of said

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- first strips and the other leg being inserted in a pocket in one of said second strips.
3. In combination with a pair of stretch pants the improvement comprising:
- (a) Four first strips of material, each strip being doubled over and secured along a series of spaced transverse lines to form a plurality of transverse tubular pockets, 5
said strips being secured to opposite sides adjacent the bottom of each pant leg; 10
- (b) A pair of stirrups each having a relatively wide intermediate portion formed of thin flexible transparent material, 15
four relatively narrow second strips of material doubled over to form a transverse tubular pocket, 15
one of said second strips being secured to each of the opposite ends of each of said intermediate portions; and
- (c) A pair of U-shaped clips for each of said stirrups, 20
said clips having opposite legs with one leg inserted in a pocket in one of said first strips and the other leg inserted in a pocket in one of said second strips.
4. An adjustable stirrup for stretch pants having a pair of loops adjacent the bottom of each pant leg comprising: 25
- (a) A relatively wide intermediate portion formed of thin flexible transparent plastic, 30
said intermediate portion being elongated and tapered to form a pair of narrow ends;
- (b) A relatively narrow strap secured at each of the said narrow ends of said intermediate portion, 35
said straps being doubled back and secured across spaced narrow transverse bands to form a plurality of spaced tubular pockets; and
- (c) A pair of U-shaped clips each having two opposite legs, one of the legs of one clip being inserted in one of the pockets at one end of the stirrup, and one of the legs of the other clip being inserted in one of the pockets at the opposite end of the stirrup, 40
the other leg of each of said clips being adapted to be inserted in one of the loops in the pant leg.
5. An adjustable stirrup for stretch pants having a pair of loops adjacent the bottom of each pant leg comprising: 45
- (a) A relatively wide intermediate portion formed of thin flexible transparent plastic,

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- said intermediate portion being elongated and tapered to form a pair of narrow ends;
- (b) A relatively narrow integrally formed strap at each of the opposite ends of said intermediate portion, 5
said straps being doubled back and joined across spaced narrow transverse bands to form a plurality of tubular pockets; and
- (c) A pair of U-shaped clips each having two opposite legs, one of the legs of one clip being inserted in one of the pockets in one of said straps, and one of the legs of the other clip being inserted in one of the pockets in the other of said straps, 10
the other leg on each of said clips being adapted to be inserted in one of the loops in the pants legs.
6. An adjustable stirrup for stretch pants having a pair of loops adjacent the bottom of each pant leg comprising: 15
- (a) A relatively wide intermediate portion formed of thin flexible transparent plastic, 20
said intermediate portion being elongated and tapered to form a pair of narrow ends;
- (b) A relatively narrow integrally formed strap at each of the opposite ends of said intermediate portion, 25
said straps being doubled back and heat sealed across spaced narrow transverse bands to form a plurality of tubular pockets; and
- (c) A pair of U-shaped clips each having two opposite parallel legs with inwardly curved ends and a center prong, 30
one of said legs of one clip being inserted in one of the pockets in one of said straps, and one of the legs of the other clip being inserted in one of the pockets in the other of said straps, 35
the other leg on each of said clips being adapted to be inserted in one of the loops in the pant leg.

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