

Sept. 2, 1958

B. LIEBOWITZ
ANTICURL DEVICE

2,849,720

Filed Jan. 12, 1956

2 Sheets-Sheet 1

FIG. 1

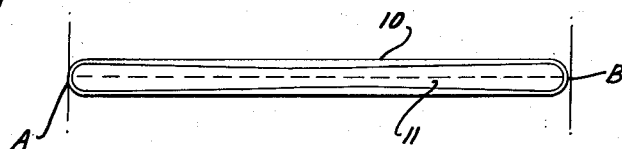


FIG. 2

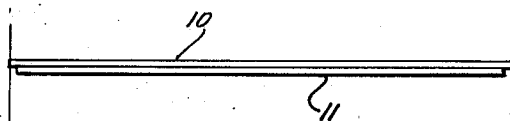


FIG. 3

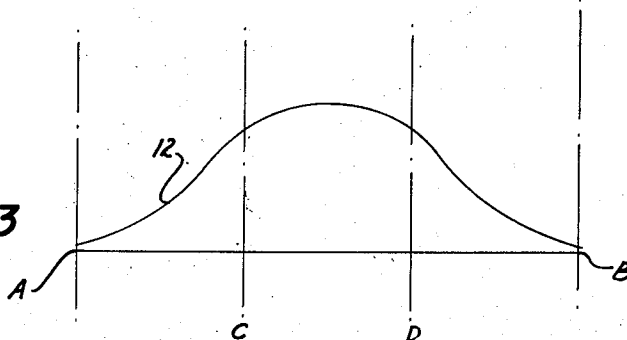
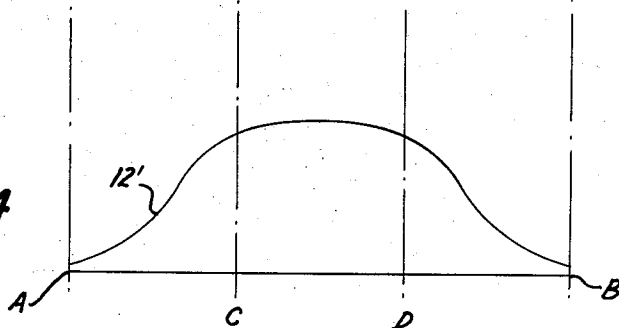


FIG. 4



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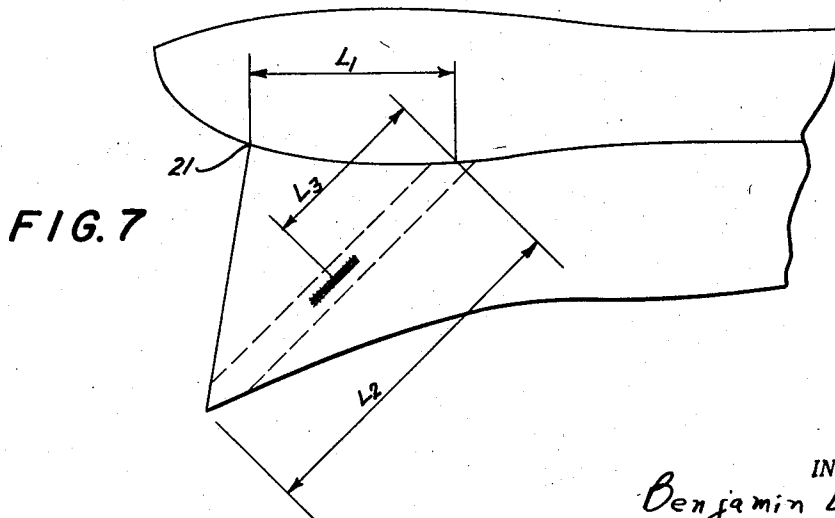
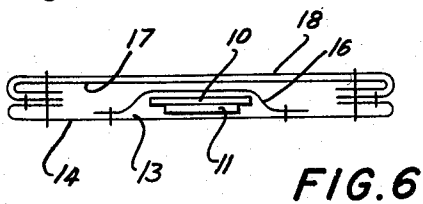
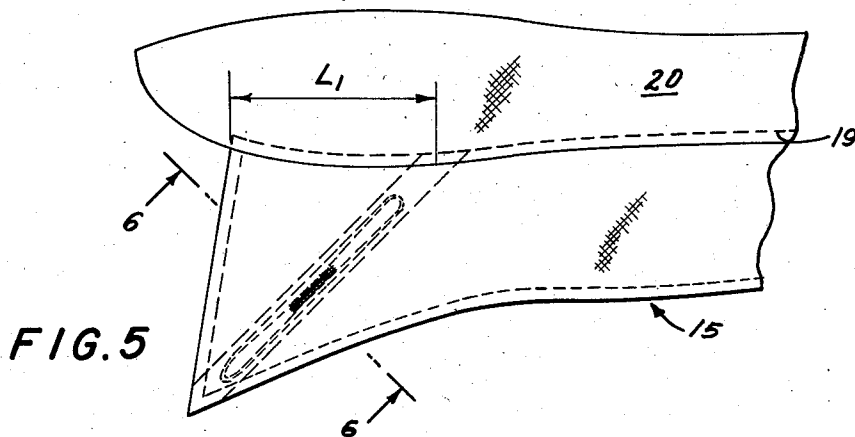
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ANTICURL DEVICE

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5 Claims. (Cl. 2—132)

The present invention relates to anticurl devices for use in men's and boys' collars and in particular to collars where such anticurl devices extend diagonally from a region adjacent the points of the collars towards the band of the collars.

In Patent Nos. Reissue 23,617, 2,601,035, and 2,601,036, there is disclosed a variable stretch in the rubber of the anticurl device, but in almost all of the disclosures the point of maximum tension in the rubber comes "in the neighborhood of the crotch" of the collar. This, of course, refers to anticurl devices placed in the edge position of the collar, as shown in most of the figures of the drawings of these patents. However, as is shown in Fig. 7 of Reissue Patent No. 23,617, the anticurl device may also be used in the diagonal position, and indeed it has been found that there are many advantages in using the diagonal position. In this case, the point of maximum stretch would come in the neighborhood of the collar-banding seam with the minimum stretch at the point.

It has now been found that certain desirable effects are achieved by lowering the point of maximum stretch to a region which lies in the middle third of the anticurl strip. In particular the desirable effect achieved is to cause the collar to lie straighter, that is, with less concavity than in the case where the point of maximum stretch lies closer to the band. In the regions close to the band, an anticurl strip of this character requires very little if any anticurl forces when it is placed in a diagonal position with the upper end of the strip well removed from the crotch of the collar. The reason for this is that there is very little tendency for the collar to curl in this area. When the strip is in the diagonal position, the curling which arises when wearing pressures are imposed on the collar is greatest in the central region of the strip and it is on that account that it is desirable to have this region also the region of maximum stretch in the rubber of the anticurl strip. Of course, this does not apply to anticurl strips which are placed in the edge of the collar or close to the edge and parallel thereto. In this latter case, it is still desirable to have a maximum tension in the region of the crotch.

A clearer understanding of the invention may be had by reference to the accompanying drawings, in which:

Figs. 1 and 2 are respectively plan and side views of an anticurl strip according to the present invention.

Fig. 3 is a diagram showing one manner in which the stretch may be distributed along the anticurl strip;

Fig. 4 is a diagram illustrating another manner in which the stretch may be distributed along the anticurl strip;

Fig. 5 is a fragmentary view of a collar including the anticurl strip of the invention;

Fig. 6 is a sectional view taken along line VI—VI of Fig. 5 in the direction of the arrows; and

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Fig. 7 is a view similar to Fig. 5 showing relationships between the anticurl device and collar used in determining where the point of maximum stretch should be located.

Referring now to the drawings, Figs. 1 and 2 show an anticurl device composed of an elongated flexible thin compression-resistant strip 10 which may be made of a plastic. An elongated elastomer 11 such as rubber is attached as by stitching in a permanently stretched condition to the plastic strip 10, the stretch in the rubber strip 11 being distributed therealong in a predetermined manner shown graphically in Fig. 3.

Referring to Fig. 3 it will be seen that the ends of the rubber strip 11 are indicated at the points A and B and along the length of the rubber strip 11 from the end A to the end B thereof, these ends also being indicated in Fig. 1, the stretch is distributed in the manner indicated by the curve 12. Thus, it will be seen that the stretch is almost 0 at the end A and increases and reaches a maximum point in the middle third of the strip 11, the tension then decreasing to approximately 0 at the end B of the strip. Furthermore, it will be noted that along the middle third of the strip 11 the stretch as shown by the curve 12 is not constant and is in fact at a maximum point approximately at the center of the strip 11.

It is also possible in accordance with the present invention to distribute the stretch in the manner shown graphically in Fig. 4 from which it will be seen that the curve 12' of the distribution of the stretch in the rubber strip 11 increases from approximately 0 at the end A to a maximum along the middle third between the points C and D and then the stretch decreases to approximately 0 at the end B. While the stretch in Fig. 3 is curved considerably between the points C and D of the curve 12 which denote the middle third of the strip 11, it will be noted that in Fig. 4 this portion of the curve is relatively flat, so that with the stretch distribution of Fig. 4 there is a relatively constant elongated portion of maximum stretch distributed along the middle third of the rubber strip 11.

As may be seen from Fig. 5, as well as Fig. 6, the anticurl strip formed by members 10 and 11 is located in a pocket 13 formed between the bottom ply 14 of the collartop 15 and a strip of fabric 16 stitched at its side edges to the bottom ply 14 at the inner face of the latter between the bottom ply 14 and the lining ply 17, this lining ply being located between the top ply 18 and the bottom ply 14 of the collartop 15. This collartop 15 is joined along the collar-banding seam 19 to the collar-band 20, and the crotch 21 of the collar is located at a distance L_1 from the end of the pocket 13 which is adjacent the collar-banding seam 19. The anticurl device composed of the compression-resistant flexible strip 10 and the stretched rubber strip 11 is located in and extends along the pocket 13 in the manner indicated in Figs. 5 and 6. The region of maximum tension along the middle third of the anticurl strip is shown in the shaded area in Fig. 5.

It is possible to write an approximate formula for the location of the point of maximum stretch as related to the distance measured along the collar-banding seam from the upper end of the pocket to the crotch, and this formula is illustrated in Fig. 7. Thus, where the distance from the pocket to the crotch measured along the collar-banding seam is L_1 , and the length of the pocket in the collartop is equal to L_2 , the location of the region of maximum stretch shown in the shaded area of Fig. 7 from the collar-banding seam along the pocket is indicated by the distance L_3 which is the distance from the

collar-banding seam to the point of maximum tension. The formula for determining the distance L_3 is

$$\frac{L_3}{L_2} = K \frac{L_1}{L_2}$$

or

$$L_3 = KL_1$$

where K is a constant on the order of unity, although it may vary from about 0.75 to about 1.25.

I claim:

1. A collar which comprises a band portion and a collartop portion which is folded down along a foldline adjacent the band portion and which also comprises anticurl means located in the collartop portion extending for a predetermined distance in a diagonal direction from a region near the point of the collartop to a region near the foldline, said anticurl means comprising a thin flexible plastic member and a stretched elastomer member attached to the plastic member, the stretch of said elastomer increasing from approximately 0 near the point of the collar to a maximum in a region in the middle third of said predetermined distance and then decreasing to approximately 0 in the region near the band portion of the collar.

2. A collar which comprises a band portion and a collartop portion which is folded down along the foldline adjacent the band portion and which also comprises anticurl means located in the collartop portion extending for a predetermined distance in a diagonal direction from a region near the point of the collartop to a region near the foldline, said anticurl means comprising a thin, flexible compression-resistant member and stretched elastomer member attached to said compression-resistant member, the stretch of said elastomer increasing from approximately 0 near the point of the collar to a maximum in a region adjacent the center of said predetermined distance and then decreasing to approximately 0 in the region near the band portion of the collar.

3. A collar which comprises a band portion and a collartop portion which is folded down along a foldline adjacent the band portion and which also comprises anticurl means located in the collartop portion extending for a predetermined distance in a diagonal direction from a region near the point of the collartop to a region near the foldline, said anticurl means comprising a thin, flexible compression-resistant member and a stretched elastomer member attached to said compression-resistant member, the stretch of said elastomer increasing from approximately 0 near the point of the collar to a maximum which remains substantially constant along almost

the entire middle third of said predetermined distance and then decreasing to approximately 0 in the region near the band portion of the collar.

4. A collar comprising a collar-band and a collartop portion joined to the collar band along a collar-band seam, said collartop terminating at one end in a crotch at the collar-banding seam and having at said end a collar point distant from said crotch, said collar comprising an anticurl means located in the collartop portion and extending for a predetermined distance in a diagonal direction from a region near the point of the collartop to a region near the collar-band seam, said anticurl means comprising a thin, flexible, compression-resistant member and a stretched elastomer member attached to the compression-resistant member, the stretch of said elastic member increasing from approximately 0 near the point of the collar to a maximum and then decreasing to approximately 0 in the region near the collar-banding seam, the distance of the region of maximum stretch from said collar-banding seam being equal to the distance of the end of the anticurl means adjacent said seam from said crotch multiplied by a constant approximately equal to 1.

5. A collar comprising a collar-band and a collartop portion joined to the collar-band along a collar-band seam, said collartop terminating at one end in a crotch at the collar-banding seam and having at said end a collar point distant from said crotch, said collar comprising an anticurl means located in the collartop portion and extending for a predetermined distance in a diagonal direction from a region near the point of the collartop to a region near the collar-band seam, said anticurl means comprising a thin, flexible, compression-resistant member and a stretched elastomer member attached to the compression-resistant member, the stretch of said elastic member increasing from approximately 0 near the point of the collar to a maximum and then decreasing to approximately 0° in the region near the collar-banding seam, the distance of the region of maximum stretch from said collar-banding seam being equal to the distance of the end of the anticurl means adjacent said seam from said crotch multiplied by a constant ranging from about 0.75 to about 1.25.

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