July 31, 1962 A. BLUSTEIN 3,046,582

PROCESS OF SKIVING AND GROOVING COUNTERS

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FIG. 1

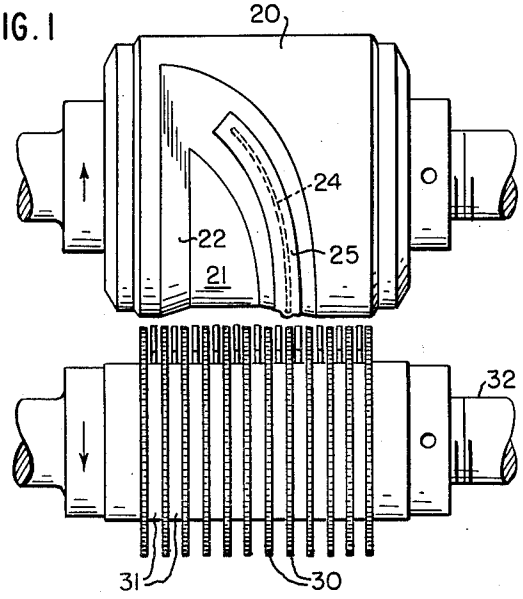


FIG. 2

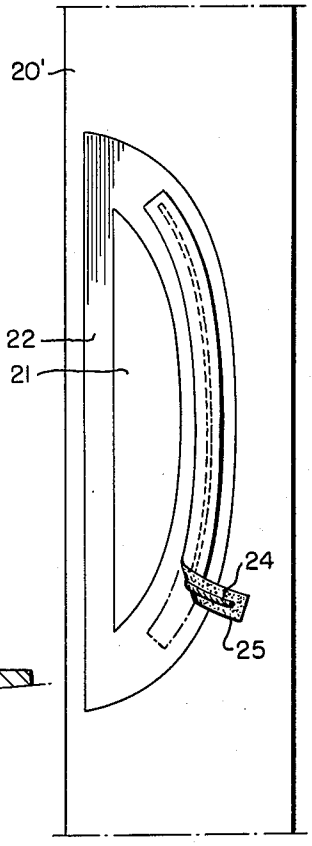


FIG. 3

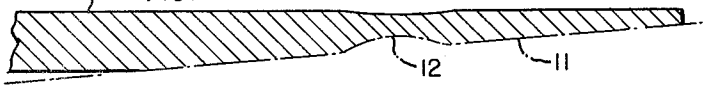
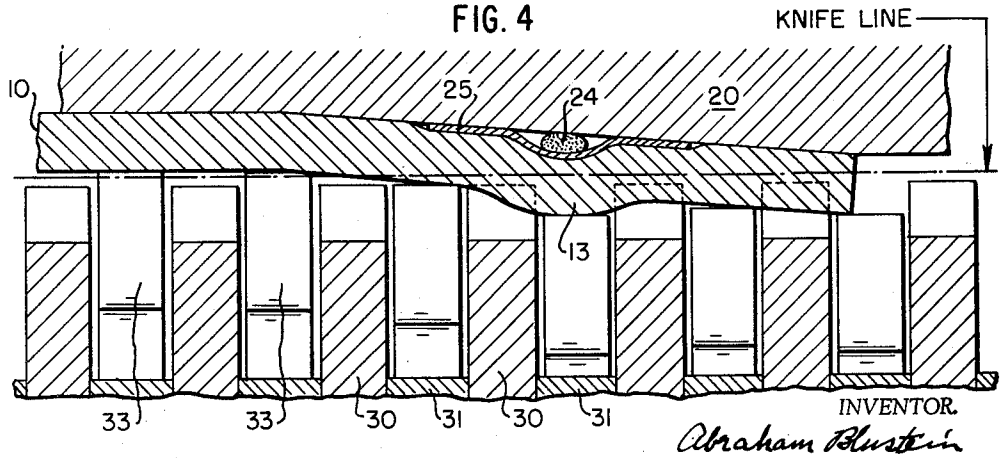


FIG. 4



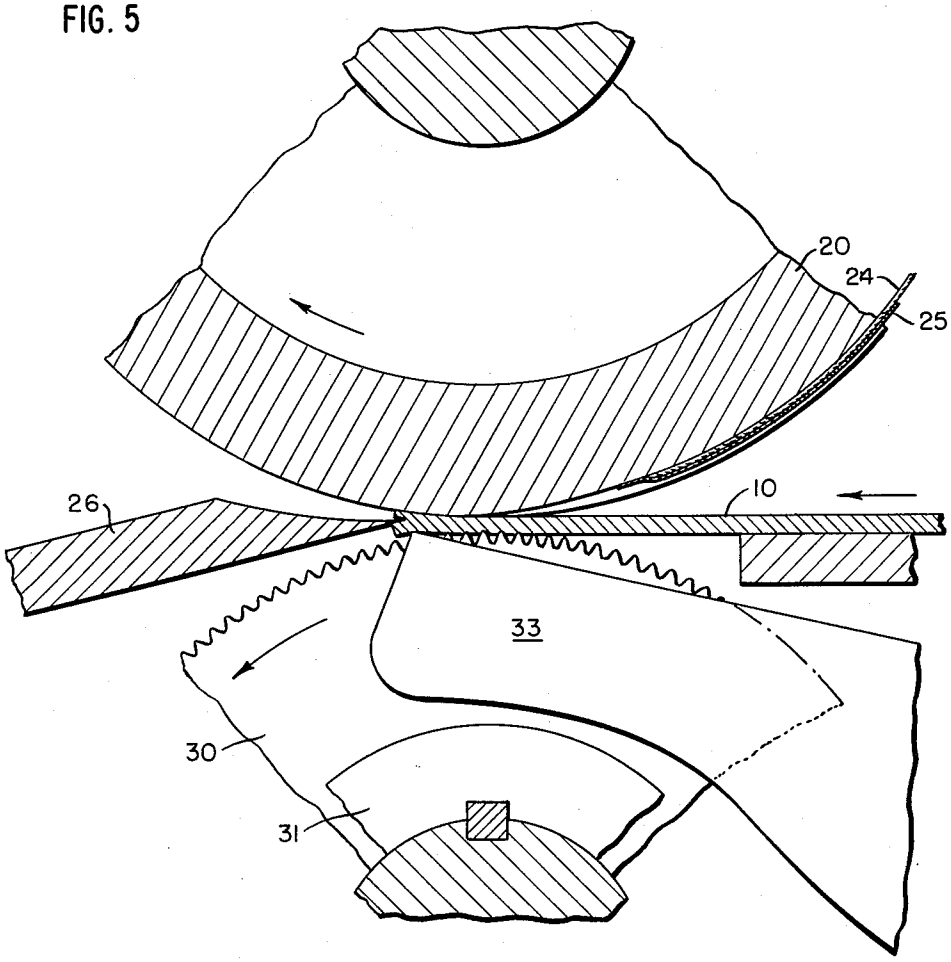
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FIG. 5



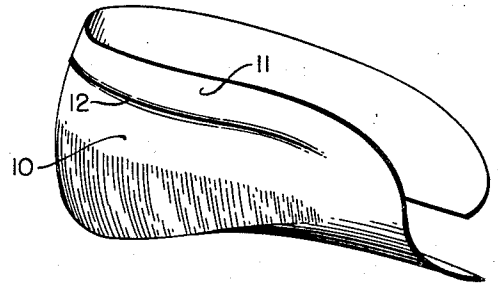


FIG. 6

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PROCESS OF SKIVING AND GROOVING COUNTERS

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Filed Nov. 13, 1961, Ser. No. 151,623
5 Claims. (Cl. 12—146)

This invention comprises a new and improved process of making molded shoe counters of tough stiff material such as fiberboard, vinyl compositions and the like. The U-shaped body of such counters must be sufficiently stiff to maintain the shape of the rear end of the upper throughout the life of the shoe, while the comfort of the wearer demands that the top marginal area of the counter be made flexible and readily conformable to the ankle.

To accomplish these ends it has been the practice to skive a marginal area of the counter blank, reducing it to a tapering feather edge, and then as a separate operation to crease, groove or perforate the skived area to render it more flexible. The primary object of this invention is to effect two such functions in one and the same operation. The expense of manufacture is thus correspondingly reduced, in that my process requires but one machine instead of two and also because it eliminates handling of the counters by a second operator.

I have discovered that these results may be achieved by forming in a flat counter blank a marginal area tapering toward a feather edge and in the same operation removing from the tapering area an elongated groove-forming strip spaced within the upper edge of the counter. In this way a break line is formed in the counter at just the right place to render pliable and flexible the edge of he counter about the ankle of the wearer.

Going more into detail, my novel process may be carried out by modifying any commercially available counter skiving machine by affixing to the tapering feather edge-forming wall of the matrix cavity a cord that will cause transverse distortion of the blank within its tapered area so that the skiving knife will remove from the blank a continuous elongated strip, thus forming a grooved break line of reduced thickness in the counter.

Preferably and as herein shown the cord may be adhesively secured to a length of pressure sensitive tape and applied to the matrix roll beneath the tape. Thus the location and shape of the break line may be varied and adjusted to meet all conditions of style and material and no additional equipment or machinery is required by the manufacturers.

These and other features and advantages of the invention will be best understood and appreciated from the following description of a preferred manner of carrying out my novel process, selected for purposes of illustration and shown in the accompanying drawings, in which:

FIG. 1 is a view in elevation of the rolls of a counter skiving machine equipped for the process,

FIG. 2 is a development of the matrix roll surface,

FIG. 3 is a sectional view on an enlarged scale showing a portion of the counter blank,

FIG. 4 is a sectional view showing the distorted shape of the counter blank at the knife line,

FIG. 5 is a sectional view taken at right angles to that of FIG. 4, and

FIG. 6 is a view in perspective of the improved molded counter.

The complete molded counter as shown in FIG. 6 is approximately U-shaped with its central longitudinal zone 10 being of full thickness to retain permanently its molded shape and with both marginal areas tapered toward feather edges. The lower tapered area is molded into an inwardly directed base flange, while in the upstanding top tapered area 11 is formed an elongated groove 12 which serves as a break line giving pliability to the upper edge of the counter. In accordance with the present invention the top tapered area 11 and the groove 12 are formed simultaneously in a continuous operation as will now be explained.

For this purpose it is proposed to employ a counter skiving machine having a matrix roll 20 with an elongated segmental cavity 21 defined by outwardly inclined walls 22 and 23. In the skiving operation the central area of the counter blank is forced into the cavity 21 above the knife line and so passes through the machine in its full thickness, while the inclined walls 22 and 23 of the cavity cause the outer areas or zones of the blank to intersect the knife line as suggested in FIG. 4.

The lower feed roll of the machine comprises a series of serrated feed disks 30 spaced by washers 31 on a shaft 32. In the spaces between the feed disks 30 are located presser fingers 33 and these fingers, acting at the bite of the rolls, force the counter blank into conformity with the composite contour of the matrix roll as the blank meets the knife 26.

The matrix roll 20, as shown in FIGS. 1 and 2, is modified in its effective contour by adhesively attaching thereto a cord 24 that lies upon the upper inclined wall 23 of the matrix cavity and symmetrically follows its longitudinal curvature. As herein shown the cord 24 may be first secured to a wider pressure sensitive tape 25 and secured to the roll by and beneath the overlapping tape.

The action of the matrix is well shown on an enlarged scale in FIG. 4. The upper edge area of the counter blank is caused to intersect the knife line and the cord 24 causes a portion of the area being reduced to form a bulge 13 so that the knife 26 removes a chip of the shape shown in FIG. 4 below the knife line, that is to say, upper edge of the counter blank is reduced, tapering toward a feather edge and in severing the bulge 13 a continuous strip is removed that results in the formation of the groove 12 as shown in FIG. 3. It will thus be seen that the two steps of (1) reducing the top zone area of the counter to a tapered feather-edge formation and (2) of cutting a break line groove in this zone are carried out simultaneously in one and the same operation and with a single handling of the counter blank.

Having thus disclosed my invention what I claim as new and desire to secure by Letters Patent is:

1. The process of making shoe counters comprising the steps of forming in a flat counter blank a marginal area tapering to a feather edge, and in one and the same operation removing from the tapering area an elongated groove-forming strip spaced within the upper edge of the counter.

2. The process of making shoe counters, characterized by feeding a flat counter blank to a straight-edged skiving knife with its marginal areas inclined transversely to the

knife edge and one inclined area distorted to present continuously to the knife a groove-forming protuberance.

3. The process of making shoe counters, characterized by the steps of skiving the upper marginal area of a counter blank and simultaneously forming a continuous longitudinal depression in the skived area by the removal of a strip of material from the blank.

4. The process of making shoe counters, characterized by the step of advancing a flat counter blank between rolls to a skiving knife while distorting a marginal area of the blank, thereby tapering the upper marginal area of the

blank, and at the same time forming a longitudinal depression in the skived area of the blank by interposing a cord between one of the rolls and the material of the counter.

5. The process of making shoe counters, characterized by the steps of skiving the top edge area of a counter blank and simultaneously bulging the skived area by pressing a cord into it and removing the bulged material as a continuous groove-forming strip.

No references cited.