Jan. 19, 1960 J. J. FERREIRA 2,921,389

WELT SHOE WITH RIB-CARRYING SOCK LINING

Filed May 17, 1957 3 Sheets-Sheet 1

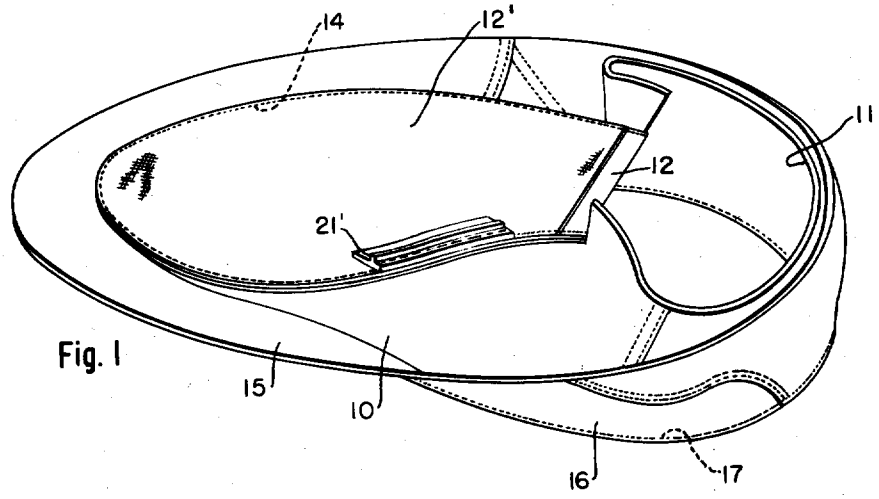
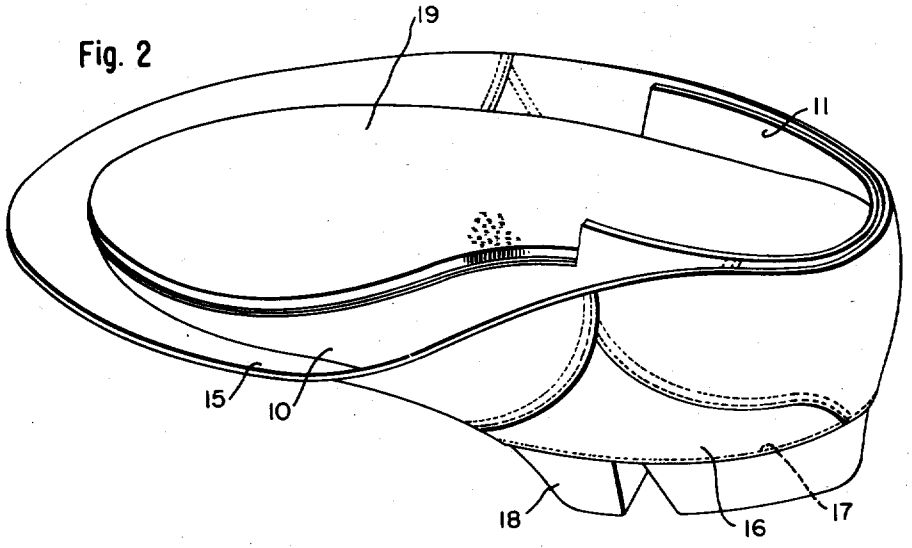


Fig. 1

Fig. 2



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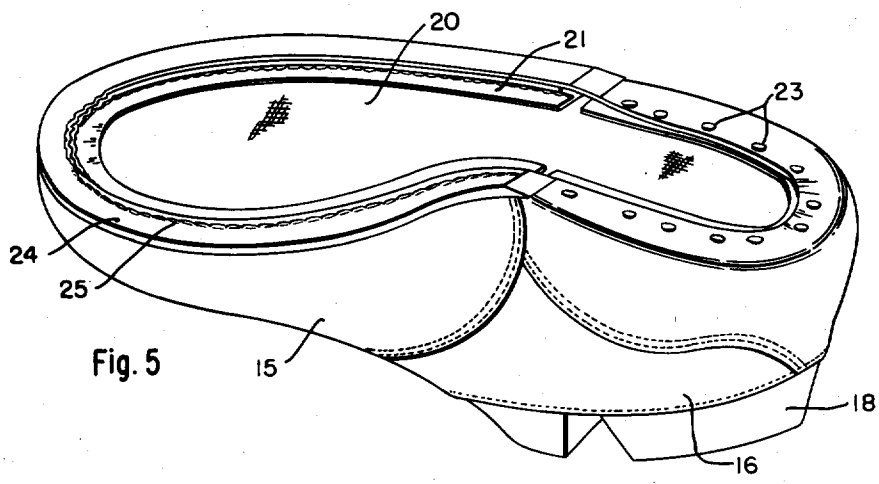
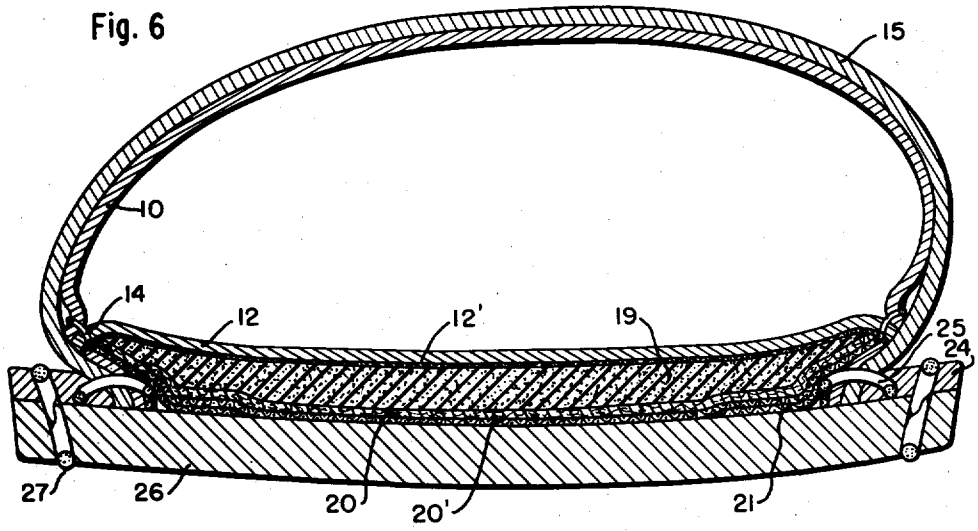


Fig. 5

Fig. 6



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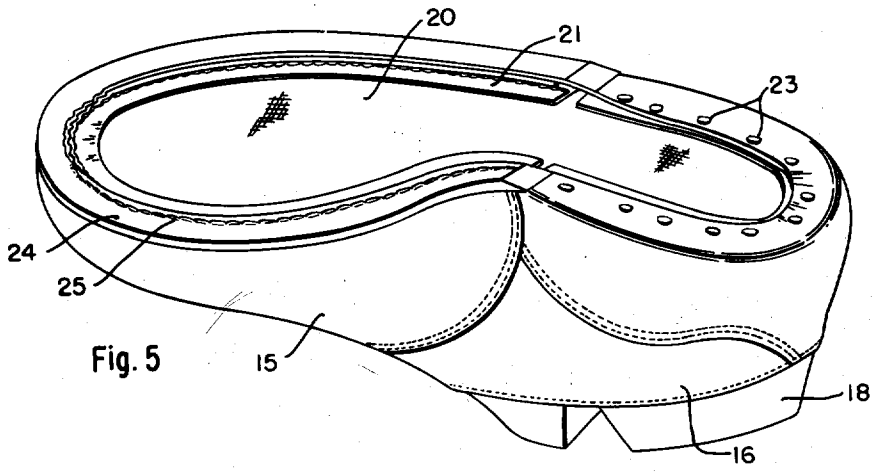
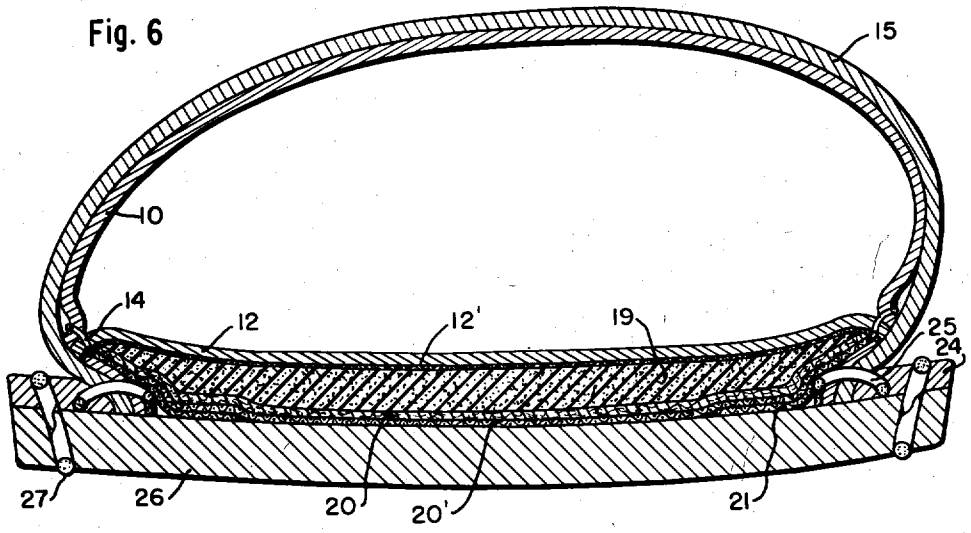


Fig. 5

Fig. 6



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2,921,389

WELT SHOE WITH RIB-CARRYING SOCK LINING

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Application May 17, 1957, Serial No. 659,798

1 Claim. (Cl. 36—17)

This invention comprises a new and improved process of making Goodyear welt shoes having unusual flexibility as well as other advantages in economy and convenience of manufacture, and in style and appearance. The invention includes within its scope the welt shoe herein shown as produced by the said process.

The process of this invention is characterized by uniting an upper lining and a sock lining by stitching or otherwise in a closed lining assembly, suitable for insertion into the outer or leather integuments of the upper in correct relation, and then slip or force lasting this lining assembly while partially enclosed in the upper. The sock lining is thus fully supported upon the last bottom in exposed position where it is conveniently located for succeeding shoemaking operations. The sock lining may have a sewing rib directly attached to its exposed face or a light ribbed insole may be laid and cemented to the sock lining. If a cushion effect is desired, a cushion ply may be interposed between the sock lining and the insole. In any case, having provided the welt sewing rib by selecting the specific steps required, the outer integument of the upper is then presented in accurate location upon the last, partially enclosing the already slip lasted lining assembly. The welt lasting operation may therefore now be carried out under most advantageous conditions since the operator has to deal only with the outer integument unencumbered by the upper lining. The lasting operation is thus made easier and may be effected in such a way as to bring out the fine lines of the last.

After the lasting operation the welt may be sewn to the upstanding margin of the upper and rib in accordance with the conventional procedure, though it will be noted that the thickness of the welt seam is reduced since it does not include the margin of the upper lining which has heretofore been present at this stage of conventional welt shoemaking.

In accordance with the process herein described it is entirely practical to employ, instead of the usual channeled insole, merely a reinforced sock lining or an unchanneled insole not more than 1½ irons in thickness equipped with an attached sewing rib. In either case it will be seen that the usual multi-ply stiffening effect of the conventional welt insole has been obviated or very largely reduced all with incidental advantages both in process and product.

These and other features and characteristics of the invention will be best understood and appreciated from the following description of a preferred manner of carrying it out as shown in the accompanying drawings in which:

Figs. 1–5 are views in perspective showing progressive steps starting with the lining assembly in Fig. 1 and ending with the welted shoe in Fig. 5.

In Fig. 1 the sewing rib is shown as attached directly to the sock lining, whereas Figs. 2–5 show a modification

in which the sewing rib is attached to an insole superposed on the sock lining.

Fig. 6 is a view in cross-section on a greatly enlarged scale through the forepart of the finished shoe.

In carrying out the process the upper lining, which includes a vamp lining portion **10** and a quarter lining portion **11**, together with the sock lining **12** are precision cut to the last which is to be employed and are united as by stitching **14** about their marginal edges thus forming a lining assembly closed throughout their united shank and foreparts and open throughout the heel seat. This lining assembly is then properly located within and attached to the outer or leather integument of the upper which includes a vamp **15** and a quarter portion **16**. The lining assembly may be secured within the outer integument of the upper by the usual top stitching operation in which a line of stitching **17** is formed between the lining and the folded top edge of the upper.

The next step of the process consists in slip lasting the lining assembly while the latter remains partially enclosed within the outer integument. In this step the upper lining and sock lining are both conformed accurately and under considerable tension to the contour of the last while the sock lining **12** is supported firmly upon the last bottom. It will be understood that the last may be conveniently inserted through the open top of the upper and forced forwardly into the lining assembly, the heel seat being still left open. In Fig. 2 a last **18** is represented as having been forced into this position.

If a cushion effect is desired, a cushion ply **19** of sponge rubber or other resilient material may be cut to size and cemented to the outer face of the sock lining **12** as also suggested in Fig. 2.

The next step in the process consists in laying a thin insole **20** upon the cushion ply **19** and cementing it thereto. The insole carries a previously attached sewing rib **21** which may be cemented to the outer face of the insole as a stock fitting operation in the well known manner. The insole **20** may well be as thin as 1½ irons and if desired may be reinforced with duck or other fabric. The shoe in this condition is represented in Fig. 3 from which it will be apparent that the preceding steps have been carried out upon the lining assembly while the latter is located inside the partially attached outer integument of the upper.

Having now provided the requisite sewing rib **21**, the operations of toe and side lasting the outer integument may be carried out in particularly effective and convenient manner and the lasted margin of the vamp and quarter secured by staples **22** and wire to the rib **21**. The heel seat lasting operation may now also be carried out and the heel seat secured by nails **23** in the usual manner. In Fig. 4 the shoe is represented at this stage of completion.

The welt **24** may now be stitched to the upstanding lasted margin of the upper and the rib **21**. Fig. 5 represents the shoe in this stage of completion, also showing that surplus stock has been removed from the toe end of the upper by the usual upper trimming operation and the welt beaten so that it lies in flat condition ready to receive the outsole.

The structure of the resulting shoe is well shown in the cross-sectional view of Fig. 6 where it will be seen that the seam **14** uniting the vamp lining **10** and the sock lining **12** is located out from under the foot of the wearer. The sock lining is shown as reinforced with a fabric ply **12'**. Underlying this is the cushion ply **19** and beneath this is the thin insole **20** having a reinforcing ply **20'** and carrying the sewing rib **21**. The welt seam **25** is shown as passing through the margin of the vamp **15**, the rib

21 and the welt 24. The welt outsole 26 is shown as attached to the welt by the usual lockstitch outseam 27.

While I have described the process of my invention as in one aspect employing a cushion ply and ribbed insole, a very important modification of the process consists in applying the sewing rib direct to the outer face of the sock lining, preferably reinforced by a thin fabric layer. The sewing rib 21 is therefore presented in position by the sock lining while the sock lining itself is securely fastened in the shoe bottom and firmly supported by the last bottom. In this case the outer integument of the upper is lasted to the rib on the sock lining exactly as has been described for lasting to the rib on the insole 20.

In this example of the process, the sewing rib 21' is adhesively attached to the sock lining as a stock fitting step and later the outer flange of the rib is caught in the stitching 14 by which the upper lining and sock lining are united. Thus additional holding means are provided for anchoring the rib permanently in place and supporting it against lasting strains of the outer integument. Meanwhile all lasting strains of the vamp lining are supported by the sock lining without imposing any burden whatever upon the rib itself. A portion of the rib 21' is shown in Fig. 1.

In Fig. 5 the welt 24 is shown as beveled for butting and terminating at the heel breast line of the shoe. It will be apparent, however, that without any substantial variation the process of my invention may be employed in producing shoes of the type in which the welt is carried continuously about the heel seat of the shoe.

Having thus disclosed my invention and described in detail illustrative examples thereof, I claim as new and desire to secure by Letters Patent:

A Goodyear welt shoe comprising a sock lining and upper lining stitched together by a seam extending about the marginal edges of their shank and forepart portions and forming a unitary assembly within the shoe, a flanged welt sewing rib attached to the outer face of the sock lining within its stitched line of attachment at least in part to the upper lining by the same seam that attaches the sock lining and the upper lining, an outer integument of the upper attached to said rib, a welt, a seam passing through the margin of the outer integument, the welt and the rib without engaging the margin of the upper lining, and heel seat nails securing the unstitched portion of the upper lining to the sock lining.

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