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(54) Process for manufacturing shoes.

(57) The improved process for manufacturing shoes comprises a first step during which an insole is formed by joining a rigid rear part (1) and a soft front part (2) whose dimensions are substantially equal to the plan dimensions of the shoe. A second step consists in glueing a padding element (3) onto the soft front part by covering it with an adhesive sheet (4). A subsequent step consists in paring down the edge of the soft front part, preferably to a very low thickness. The process is continued by fixing the edge of the soft front part and of the rigid rear part onto the last. Finally, the upper is fitted onto the insole, the sole is fitted and the shoe is then removed from the last.

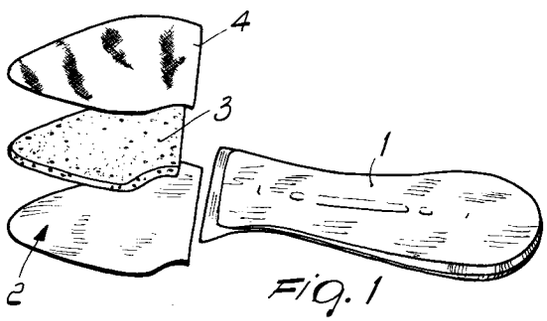

Fig. 1

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The present invention relates to an improved process for manufacturing shoes.

A shoe manufacturing process is already known which consists of a first step during which an insole is formed by joining a rigid rear part and a soft front part whose dimensions exceed the plan dimensions of the shoe.

A padding element is subsequently glued to the soft front part by covering it with an adhesive sheet.

After this, a metallic plate is applied on the front part of the insole by folding the edge of said front part and glueing said edge onto said plate.

At this point the insole is fixed, together with the metallic plate, on a last on which an upper is mounted, whose border is folded and glued to the edge of the insole.

During the final steps, the metallic plate is separated from the edge of the insole and removed from the last, the edge of the insole is glued onto the adhesive sheet and the sole is fitted.

Although this process constitutes a considerable improvement in optimizing shoe production processes, it is optimum if the soft front part of the insole is so thin that it is subject to wrinkles and creases during the various steps if it is not coupled to a rigid support.

However, if said soft front part of the insole is instead rather thick and does not risk wrinkling, the above described process has been found to be further susceptible to improvements aimed at reducing the operating steps, and thereby reducing production times.

The aim of the present invention is therefore to provide an improved process for manufacturing shoes which can be easily performed and which obtains a particularly flexible and comfortable product.

A consequent primary object is to provide a process which can be used as an alternative to the previously mentioned one if it is possible to work by using material of adequate thickness for the soft front part of the insole.

Not least object is to provide a process which can be performed with conventional machines and facilities.

This aim, these objects and others which will become apparent hereinafter are achieved by a process for manufacturing shoes which consists in:

-- forming an insole by joining a rigid rear part and a soft front part whose dimensions are substantially equal to the plan dimensions of the shoe;

-- glueing a padding element on the soft front part by covering it with an adhesive sheet;

-- paring down the edge of said soft front part;

-- fixing the edge of said soft front part and said rigid rear part onto said last;

-- fitting the upper and then the sole on the insole;

-- removing the shoe from the last.

Further characteristics and advantages of the invention will become apparent from the detailed description of its steps of execution, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is an exploded view of a semifinished product obtained from a first series of steps of the process;

figure 2 is a view of the semifinished product of figure 1 after assembly;

figures 3, 4 and 5 illustrate successive steps of the process.

With reference to the above figures, the process according to the invention comprises a first step in which an insole is formed by joining a rigid rear part 1, constituted by a cardboard-covered element made of steel-reinforced Texon or the like, and a soft front part made of leather or the like.

The coupling occurs by superimposing flaps of the parts 1 and 2 and by glueing with a powerful adhesive thereat.

Conveniently, the front part 2 substantially has the same plan dimensions as the shoe to be produced.

In a subsequent step, a padding element 3, made of sponge rubber, cork or other equivalent materials, is glued onto said front part 2.

Said element 3 is fixed to said front part 2 by means of a covering sheet 4 made of adhesive fabric.

The process is continued by paring down the edge 5 of the soft front part to a very low thickness.

At this point, the resulting insole, generally designated by the reference numeral 6, is fixed on a last 7 by means of a light adhesive at the edge of the soft front part 2 and with nails 8 at the rear part 1.

An upper 9 is then mounted on the last 7 and its edges are folded and glued to the insole 6.

The front part of the upper 8 can then be fluffed.

According to the final steps of the process, a sole 10 is fitted on the insole 6.

In the end, the shoe is removed from the last and is ready.

In practice it has been observed that the improved process according to the invention comprises a smaller number of production steps than the process currently in use and therefore has achieved the intended aim and objects of the present invention.

The process is susceptible to numerous modifications and variations, all of which are within the scope of the inventive concept.

All the steps may furthermore be replaced with other technically equivalent ones or be integrated.

In practice, the materials and the equipment used for production may be any according to the requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the scope of each element identified by way of example by such reference signs.

Claims

1. Process for manufacturing shoes which consists in:
   -- forming an insole (6) by joining a rigid rear part (1) and a soft front part (2) whose dimensions are substantially equal to the plan dimensions of the shoe;
   -- glueing a padding element (3) on the soft front part by covering it with an adhesive sheet (4);
   -- paring down the edge (5) of said soft front part;
   -- fixing the edge of said soft front part and said rigid rear part onto a last (7);
   -- fitting an upper (9) and then a sole (10) on the insole;
   -- removing the shoe from the last.

2. Process according to claim 1, characterized in that the rigid rear part of the insole is cardboard-covered and made of Texon or equivalent material reinforced with steel and/or equivalent material.

3. Process according to claim 1, characterized in that said soft front part of the insole is made of a sheet of leather or equivalent material.

4. Process according to claim 1, characterized in that said padding element is made of sponge rubber, cork or equivalent material.

5. Process according to claim 1, characterized in that said adhesive covering sheet is made of fabric or of an equivalent material.

6. Process according to claim 1, characterized in that the coupling between said rigid rear part and said soft front part of said insole is performed with powerful adhesive.

7. Process according to claim 1, characterized in that the paring down of the edge of said soft front part of said insole is performed until a very low thickness of said edge is reached.

8. Process according to claim 1, characterized in that the fixing of said edge of said soft front part of said insole to said last is performed with a light adhesive.

9. Process according to claim 1, characterized in that said rigid rear part is coupled to said last by nails.

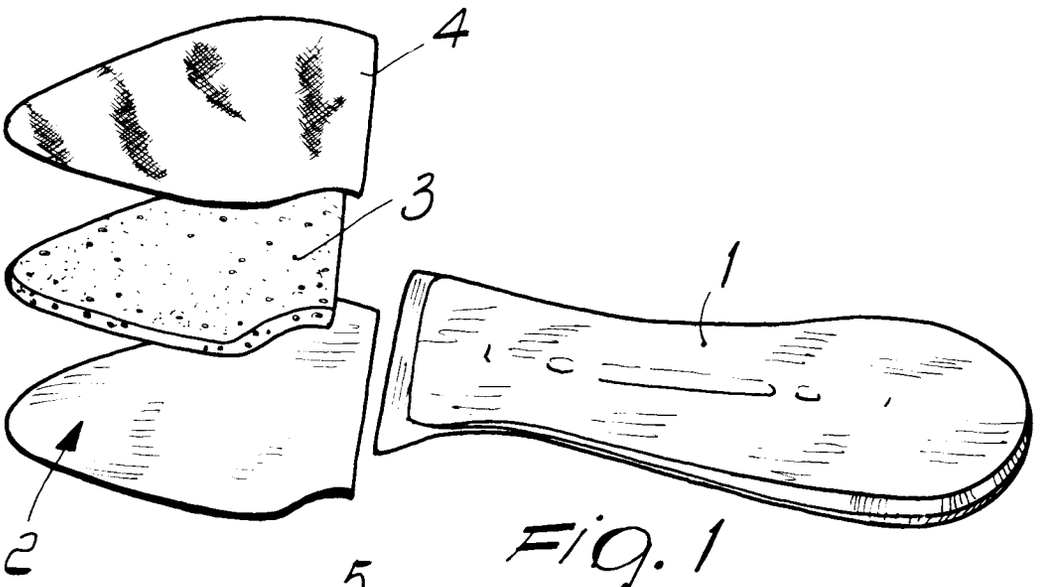

Fig. 1

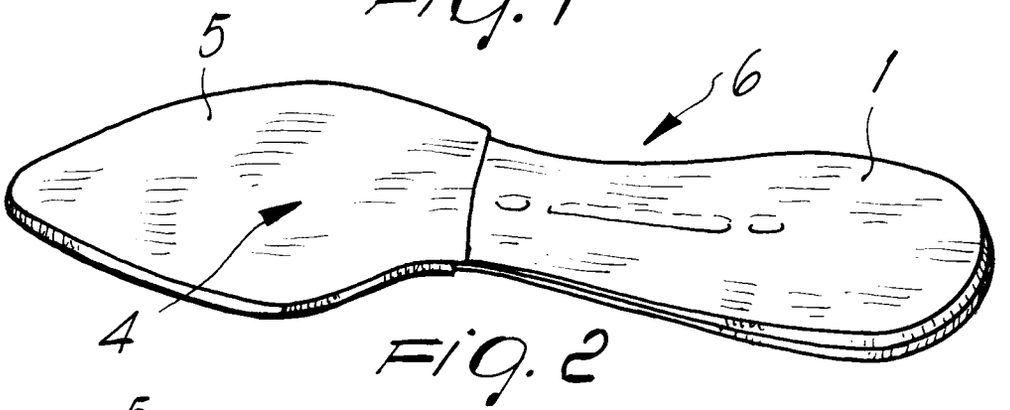

Fig. 2

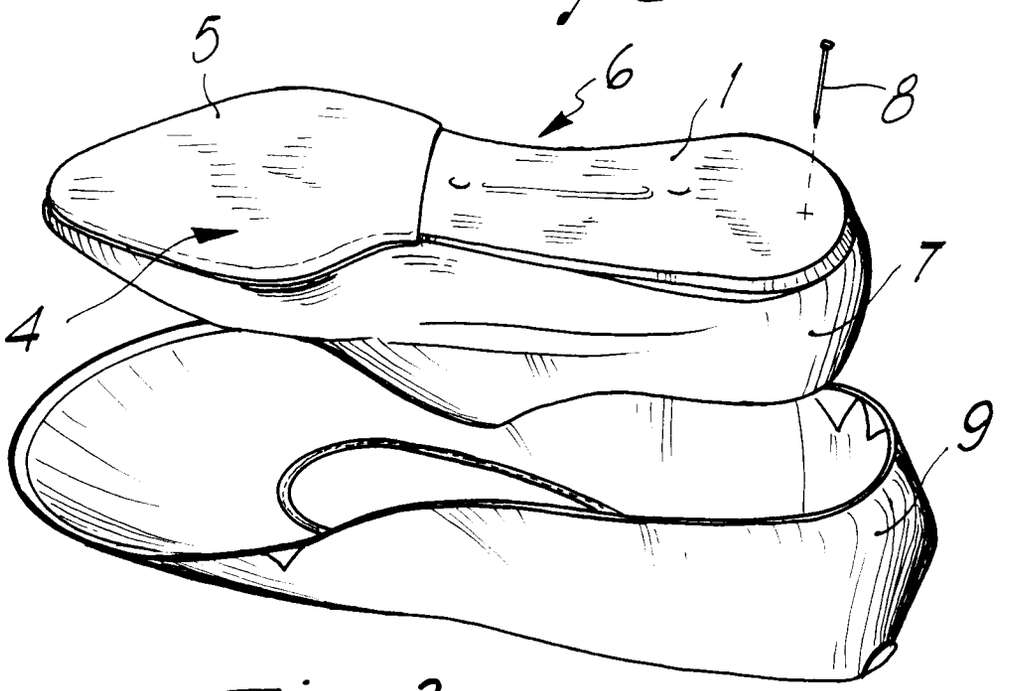

Fig. 3

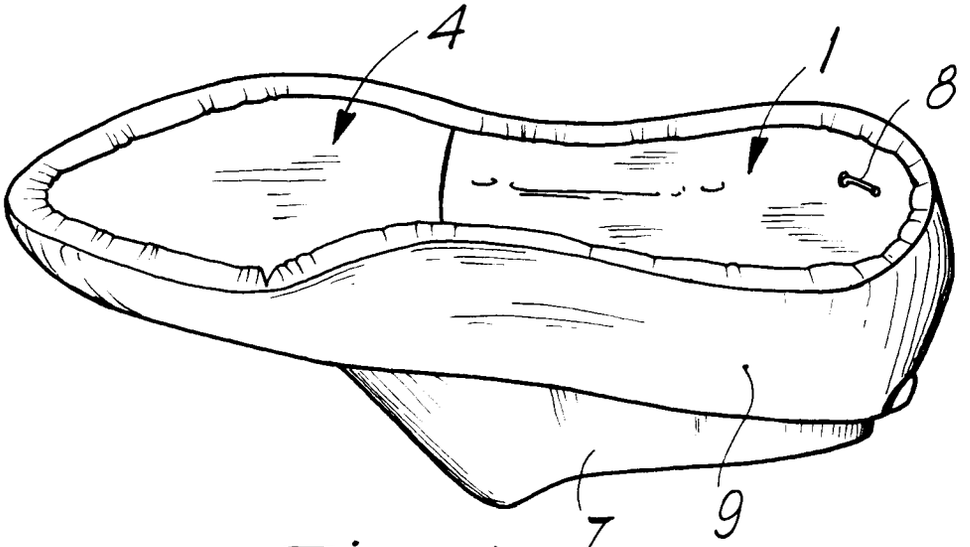

Fig. 4

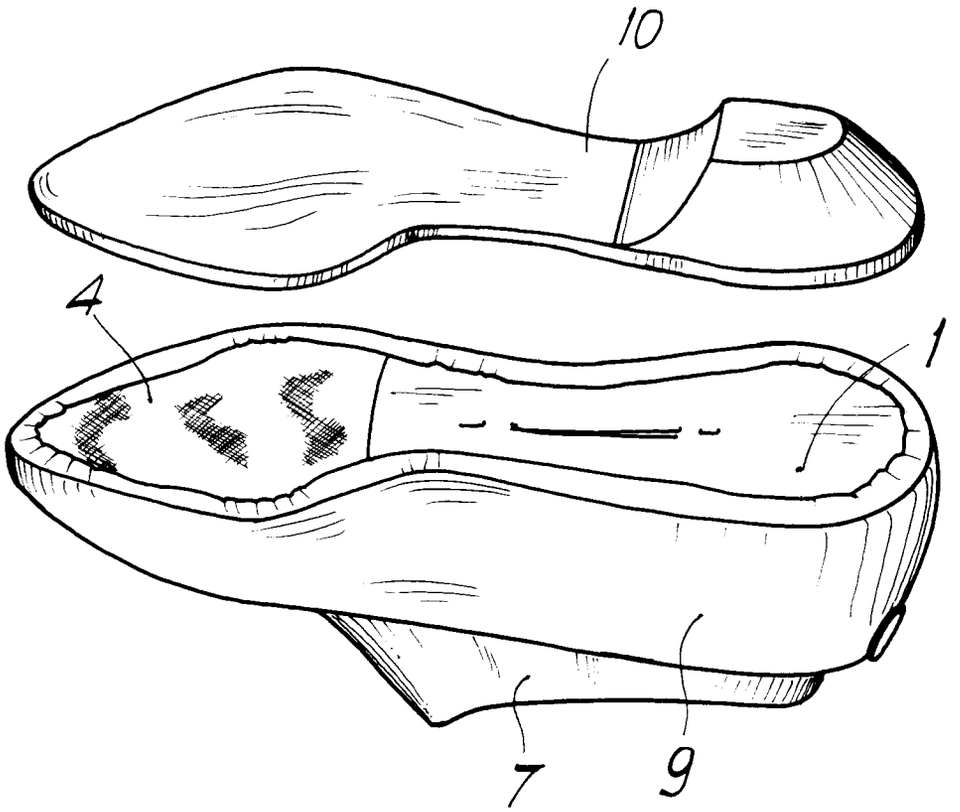

Fig. 5

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 10 8802

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-2 598 297 (PIERSON) * column 3, line 22 - column 4, line 37; figures *	1-9	A43B13/38
A	GB-A-422 509 (SELBY SHOES LTD.) * page 1, right column, line 76 - line 95 * * page 2, left column, line 5 - line 24; figures *	1-9	
A	US-A-4 942 679 (BRANDON ET AL.) * column 1, line 47 - line 52 *	2	
A	US-A-2 505 508 (SHAPIRO) * column 3, line 16 - line 18; figure 2 *	6	
A	US-A-2 701 887 (NOLAN) * claims; figures *	8	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A43B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	12 OCTOBER 1992	SOEDERBERG J.E.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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E : earlier patent document, but published on, or after the filing date
D : document cited in the application
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