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(54) **Procedure for the formation of insoles for shoes.**

(57) For the formation of insoles for shoes, a laminar thermoplastic semimanufactured product is formed from mixtures of foams of natural and synthetic latexes with closed cells, and insoles for shoes are cut from this semimanufactured product, which are hot-formed.

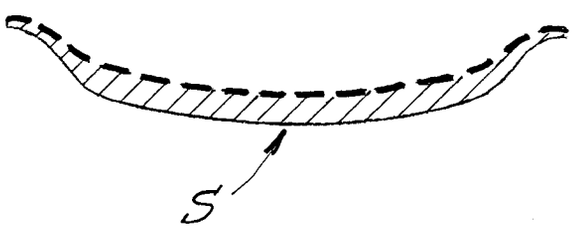


FIG.3

EP 0 514 353 A1

The aim of the invention is to provide shaped insoles for shoes, which offer particular advantages over what has been brought about thus far, as far as both production and use are concerned.

A first subject of the invention is a procedure for the formation of insoles for shoes, which envisages that a laminar thermoplastic semimanufactured product is formed from mixtures of foams of natural and synthetic latexes with closed cells, and that the insoles for shoes are cut from this semimanufactured product and hot-formed.

The laminae of the semimanufactured product can comprise a superficial support layer, such as a knitted fabric, a flock or other.

Antibacterial additives and/or active carbons with a deodorant action are advantageously added to said foams.

Another subject of the invention is a laminar semimanufactured product based on mixtures of foams with closed cells of natural and synthetic latexes, for the thermoforming of insoles.

A further subject of the invention is an insole cut and thermoformed from the semimanufactured product as defined and with the procedure as defined, in particular for orthopaedic and sports uses.

The invention will be better understood by following the description and the attached drawing which shows a practical non-limiting exemplary embodiment of the invention itself. In the drawing:

Fig. 1 shows a sheet of semimanufactured product as starting material;

Fig. 2 shows the equipment for the formation of an insole, and

Fig. 3 shows in transverse cross-section an insole thus made.

According to what is illustrated in the attached drawing, a semimanufactured product is produced from a layer 1 of mixed foam of natural and synthetic latexes, which can have a density of the order of 400 g/l and a thickness of the order of 5 mm or 6 mm, and provided superficially with a support 3, which is usually a fabric, flock or other suitable type of support and is known per se, to afford a superficial finish in the visible part of the insole which can be made from this semimanufactured product; the foaming of the thickness 1 of latexes is usually carried out on the support 3 which is thus anchored to the foamed thickness.

From the semimanufactured product thus obtained, components S1 shaped to obtain insoles for shoes or the like are cut. These components S1 are hot-formed in order to obtain the insoles S as indicated in Fig. 3, with shaping of the outline and variation in thickness of the foamed product according to the requirements for the thermoformed insole thus obtained. In Fig. 2, 5 and 7 indicate the two components of a thermoforming mould for obtaining from the component S1 the shaped insole as shown in Fig. 3. It is not excluded that the semimanufactured product S1 which is shaped for the formation for the insole can be cut directly by the same equipment 5, 7 which serves for the thermoforming, and that it can therefore also be provided with the means for cutting with the outline of the component S1; this is indicated respectively by 5A and 7A.

The foam material 1 is added together with antibacterial additives such as the so-called "Sanitized" (registered trademark) produced by Sandoz and/or with other additives, such as active carbons, deodorant constituents.

The insoles obtained with the above procedure afford particular advantages which will be clear to experts.

It will be understood that the drawing only shows an exemplary embodiment which is given only by way of practical demonstration of the invention, it being possible for the invention to vary in form and arrangement without however leaving the the scope of the idea which forms the invention itself.

Claims

1. Procedure for the formation of insoles for shoes, characterised in that a laminar thermoplastic semimanufactured product is formed from mixtures of foams of natural and synthetic latexes with closed cells, and that the insoles for shoes are cut from this semimanufactured product and hot-formed.

2. Procedure according to Claim 1, characterised in that antibacterial additives are added to said foams.

3. Procedure according to Claim 1 or 2, characterised in that active carbons with a deodorant action are added to said foams.

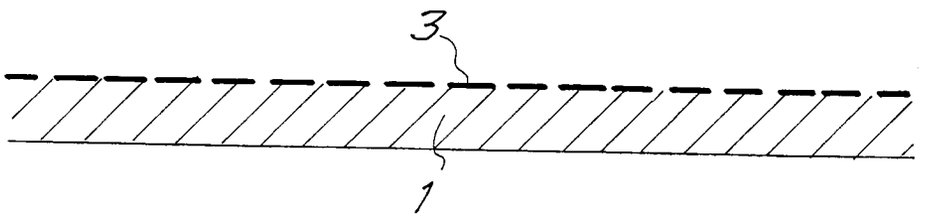
4. Procedure according to preceding claims, characterised in that the semimanufactured sheets are provided with a superficial support, usually fabric.

5. Procedure as described and illustrated.

6. Laminar semimanufactured product based on mixtures of foams with closed cells of natural and synthetic latexes, for the thermoforming of insoles.

7. Insole thermoformed from the semimanufactured product as defined and with the procedure as defined, in particular for orthopaedic and sports uses.

FIG. 1



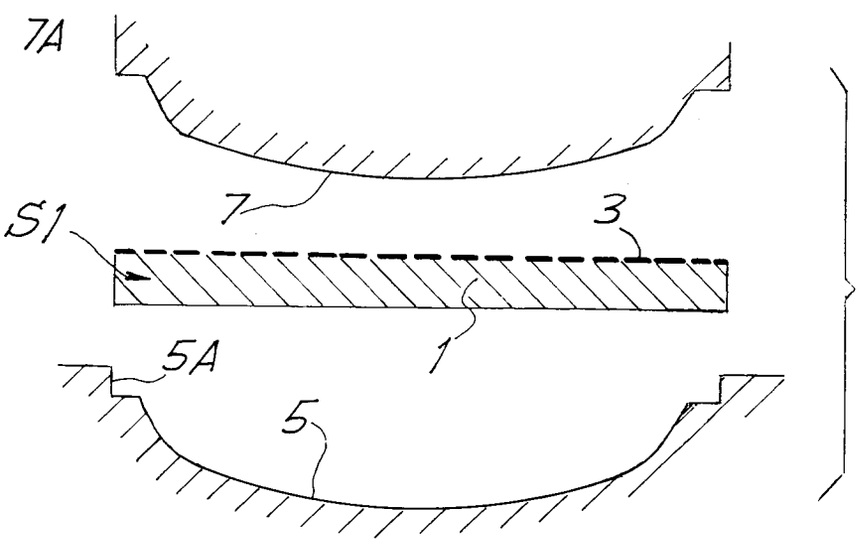


FIG. 2

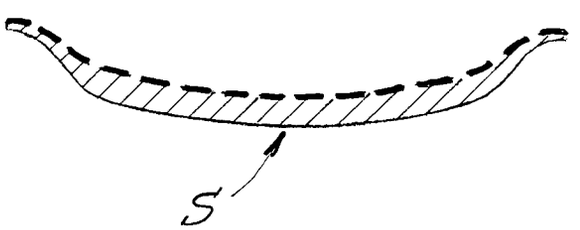


FIG. 3

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EUROPEAN SEARCH REPORT

Application Number

EP 92 83 0212

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-4 633 598 (MORONAGA ET AL.) * column 2, line 3 - line 9; claims; figures *	1,4-7	A43B13/40 A43B17/14
Y	* idem *	2,3	B32B5/24
Y	PATENT ABSTRACTS OF JAPAN vol. 14, no. 326 (C-740)12 July 1990 & JP-A-2 116 302 (KATSUTOSHI HEGI) 1 May 1990 * abstract *	2,3	
X	DE-A-3 306 425 (NITEX GMBH) * the whole document *	1,4-7	
Y	* idem *	2,3	
Y	US-A-4 533 351 (WASHKUHN) * the whole document *	2,3	
A	BOSTRÖM ET AL 'Kautschuk - Handbuch' 1961 , BERLINER UNION , STUTTGART, GERMANY * Volume 4, chapter 4, by Dr G. Sinn : page 232, paragraph 4.1.2.2 *	1,6	
X	PATENT ABSTRACTS OF JAPAN vol. 12, no. 311 (M-734)(3158) 24 August 1988 & JP-A-63 084 929 (OOSHIKA SHINKO K.K.) 15 April 1988 * abstract *	6	TECHNICAL FIELDS SEARCHED (Int. Cl.5) A43B B32B
Y	* idem *	1-5,7	
Y	DE-A-3 503 960 (NITEX GMBH) * the whole document *	1-5,7	
P,X	DE-A-4 015 164 (NITEX GMBH) 14 November 1991 * the whole document *	1,4-7	
Y	EP-A-0 042 138 (SCHERING-PLOUGH CORPORATION) * page 4, line 8 - line 22; claim 5; figures *	1-7	

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	10 SEPTEMBER 1992	MATHEY X.C.M.

CATEGORY OF CITED DOCUMENTS

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EUROPEAN SEARCH REPORT

Application Number

EP 92 83 0212

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)
Y	WORLD PATENTS INDEX LATEST Section Ch, Week 9047, November 1990 Derwent Publications Ltd., London, GB; Class A, AN 90-352520 [47] & JP-A-2 255 102 (KOKOKU CHEM IND KK) 15 October 1990 * abstract *	1-7	
Y	& PATENT ABSTRACTS OF JAPAN vol. 14, no. 582 (C-792)26 December 1990 & JP-A-2 255 102 (ACHILLES CORP) 15 October 1990 * abstract *	1-7	

Y	GB-A-2 018 678 (KIHARA SANGYO K.K. ET AL.) * page 2, lines 59-64; page 3, lines 81-82; claims 1-3,6 *	2,3	

			TECHNICAL FIELDS SEARCHED (Int. Cl.5)

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