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(54) Title: LAMINATED MATERIAL

(57) Abstract: A laminated material for clothing comprises at least three layers of flexible elastic material, the first, outer, layer comprising a material with a plush surface having a multitude of mini-loops for forming a hook and loop connection with a material, which does not form part of the material of the invention, having a surface having a multitude of mini-hooks, the middle layer being of an elastomeric material and the third, inner, layer being of a non-allergenic elastic material, wherein the material is omnidirectionally stretchable and the strength of the material is such appropriate weighty articles can be attached to the outer surface of a garment made from the material without dragging the garment out of shape, and has moisture wicking and antimicrobial properties, is non-allergenic and has no undesirable skin effects and at least one layer is perforated.

LAMINATED MATERIAL

FIELD OF INVENTION

This invention relates to laminated materials, particularly for use as materials for making garments, especially exercise and sportswear and, more especially exercise and sports training wear.

BACKGROUND TO THE INVENTION

For the purposes of this specification the word "garment" is to be understood as referring not only to complete garments but also to parts of articles, such as arm or leg coverings.

Exercise and sportswear exists in many forms depending on the activity involved. For some activities, such as golf, ordinary casual clothing can be worn but for other sporting or training activities, such as military exercise training, martial arts, weight training and many other activities sport playing or training, it is desirable that specially designed clothing and clothing materials are used. While attempts have been made to idealise the properties of the materials used to make the garments, no material has so far been available that has the properties that make it universably usable in the manufacture of a wide range of exercise and sportswear .

SUMMARY OF THE INVENTION

This invention provides a material that fulfills the desired requirements of material for making exercise and sportswear for use in a wider range of specific activities to a far greater degree than any material that has hitherto been available.

According to the invention, a laminated material for clothing comprises at least three layers of flexible elastic material, a first, outer, layer comprising a material with a plush surface having a multitude of mini-loops for forming a hook and loop connection with a material, which does not form part of the material of the invention, having a surface having a multitude of mini-hooks, an intermediate layer and a third, inner, layer of a non-allergenic material, wherein the material is omnidirectionally stretchable, has moisture wicking and antimicrobial properties and is non-allergenic and has no undesirable skin effects and at least one layer is perforated and wherein the strength of the material is such that articles can be attached to the outer surface of a garment made from the material without dragging the garment out of shape.

The material should also be such that garments made from it should provide a compression effect while still being functional and easy to put on and take off and move around in comfortably

Preferably the material is through perforated.

Preferably, the first layer is an unbrushed loop UBL OK plush cloth to which can be attached articles that have a surface covering, or are encased within a pouch or the like, of a flexible material with surface mini Velcro-type loops. Such articles may be, for example, training weights, bio sensors for heart rate, force, speed, calorific output, or acceleration, pedometers, inertia gauges, GPS units, protective padding for various body parts, such as soccer shin guards, or personal music or communication devices.

The outer layer preferably has a thickness between 1 and 5 mm.

The intermediate layer is preferably an open or closed cell natural or synthetic rubber and is advantageously neoprene. It may vary in thickness depending on the purpose for which the material is to be used. It will normally be between 0.5 and 5 mm thick.

The inner layer is preferably a nylon/spandex blend, which has inherent anti-microbial properties and moisture wicking properties or has been treated to have such properties. It may be a woven or knitted material, if desired. Its thickness is preferably less than 2 mm.

The material of the invention is preferably produced by applying adhesive to the layer materials and pressing the layers between rollers.

The invention also provides a garment or a part of a garment preferably a sportswear garment produced from the material according to the invention. For the purposes of this specification the word garment means anything that can be worn on or wrapped around the entire human body or a part thereof, such as a limb or part of a limb or the head or part of the head. Thus a garment can be, for example, something that can be wrapped around an arm, leg, hand or foot or a part of an arm or a leg or be a hood or a hat.

CLAIMS

1. A laminated material for clothing comprising at least three layers of flexible elastic material, a first, outer, layer comprising a material with a plush surface having a multitude of mini-loops for forming a hook and loop connection with a material, which does not form part of the material of the invention, having a surface having a multitude of mini-hooks, an intermediate layer and a third, inner, layer of a non-allergenic material, wherein the material is omnidirectionally stretchable, has moisture wicking and antimicrobial properties and is non-allergenic and has no undesirable skin effects and at least one layer is perforated and wherein the strength of the material is such that articles can be attached to the outer surface of a garment made from the material without dragging the garment out of shape.

2. A material according to claim 1, wherein the first layer is an unbrushed loop UBL OK cloth.

3. A material according to claim 1 or claim 2, wherein the intermediate layer is an open or closed cell natural or synthetic rubber.

4. A material according to any one of claims 1 to 3, wherein the intermediate layer is neoprene.

5. A material according to any one of claims 1 to 4, wherein the inner layer is a nylon/spandex blend.

6. A material according to any one of claims 1 to 5, wherein the inner layer is a woven material.

7. A material according to any one of claims 1 to 6, wherein the inner layer is a

moisture wicking layer.

8. A material according to claim 7, wherein perforations pass wholly through the material.

9. A garment or a part of a garment produced from a material according to any one of claims 1 to 8.

10. An exercise or sportswear garment or a part thereof according to claim 9.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/MY2015/050021

A. CLASSIFICATION OF SUBJECT MATTER

B32B 9/00 (2006.01) A41D 1/00 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Database: EPODOC, WPI and WPIAP
Keywords: laminated, layers, neoprene, foam, nylon, spandex, velcro, loop, plush and similar terms
IPC and CPC: B32B/low, A41D/low

Database: google, google patent, Espacenet and Auspat
Keywords: neoprene, nylon, spandex, loop, plush, layer, laminate and similar terms.
Applicant and Inventors (performed externally (Espacenet, Auspat and google patents) and internally (INTESS and PAMS)): Joseph CLEARY DOLCETTI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	Documents are listed in the continuation of Box C	

[X] Further documents are listed in the continuation of Box C [X] See patent family annex

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
10 August 2015	10 August 2015
Name and mailing address of the ISA/AU	**Authorised officer**
AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA Email address: pct@ipaustralia.gov.au	Leo Lai AUSTRALIAN PATENT OFFICE (ISO 9001 Quality Certified Service) Telephone No. 0262832769

INTERNATIONAL SEARCH REPORT C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		International application No. **PCT/MY2015/050021**
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,861,379 B1 (BLASZCZYKIEWICZ) 01 March 2005 Abstract, Figure 1, column 2 lines 3-56 and column 3 lines 15-16	1-10
A	US 2003/0106129 A1 (KIM) 12 June 2003 Whole Document	1-10
A	US 2002/0056502 A1 (BORDES) 16 May 2002 Whole Document	1-10
A	US 5,865,776 A (SPRINGS) 02 February 1999 Whole Document	1-10

INTERNATIONAL SEARCH REPORT Information on patent family members	International application No. **PCT/MY2015/050021**

This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document/s Cited in Search Report		**Patent Family Member/s**	
Publication Number	**Publication Date**	**Publication Number**	**Publication Date**
US 6,861,379 B1	01 March 2005	US 6861379 B1	01 Mar 2005
US 2003/0106129 A1	12 June 2003	US 2003106129 A1	12 Jun 2003
		KR 20020033690 A	07 May 2002
US 2002/0056502 A1	16 May 2002	US 2002056502 A1	16 May 2002
		AU 8792201 A	02 Apr 2002
		US 2004040640 A1	04 Mar 2004
		WO 0224015 A1	28 Mar 2002
US 5,865,776 A	02 February 1999	US 5865776 A	02 Feb 1999

End of Annex

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.