The present invention concerns the footwear industry and more specifically it concerns a semi-finished monoblock (1) for cold weather footwear made with two or more materials and directly moulded to an internal insulating insole (7) and subsequently glued or moulded to an external sole (3) chosen according to the aesthetic and functional requirements of the user and in such a way as to produce a cold weather shoe with functional and aesthetic characteristics that are better than those currently available on the market and with the possibility for them to be moulded also with the accessories required by the relevant legislation covering the specific use for which the cold weather shoe has been designed.
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
Title

Semi-finished monoblock for cold weather footwear moulded with two or more materials and directly with internal insole.

Field of invention

The present invention concerns the footwear industry and more specifically it concerns a semi-finished monoblock for cold weather footwear made with two or more materials and directly moulded to an internal insulating insole and subsequently glued or moulded to an external sole chosen according to the aesthetic and functional requirements of the user and in such a way as to produce a cold weather shoe with functional and aesthetic characteristics that are better than those currently available on the market and with the possibility for them to be moulded also with the accessories required by the relevant legislation covering the specific use for which the cold weather shoe has been designed.

Background

The shoes that are used in cold climates generally consist of a semi-finished element, called a monoblock, the interior of which is then insulated in order to protect the foot from low temperatures.

The aforementioned semi-finished monoblock, to the upper part of which the leg of the shoe upper is applied, or it is glued to a sole made of a different material from the insulating semi-finished element or it is directly moulded to the sole, fitting different materials within its interior in order to increase the foot’s protection from the cold outside.

If on the one hand the aforementioned semi-finished monoblock of a cold weather shoe guarantees the insulation of its own interior, on the other it conditions and limits the design of the shoe which depends on the type of insulating material with which it has been made.
In fact, although on the one hand the direct moulding of the sole to the monoblock guarantees effective waterproofing, on the other it limits the choice of the type of tread, since the tread sole is an integral part of the mould. With a view to avoiding the aforementioned problem, the current method employed is to use a semi-finished monoblock that is moulded in one material only, devoid of bottom or tread sole to which an insole is inserted with a special type of stitching technically known as a strobel stitch. The semi-finished monoblock thus obtained is subsequently glued to a tread sole and then finished off with the application on its upper part of the leg of the upper.

The aforementioned second type of monoblock is conditional on the single material with which it is moulded and by the choice of the insulating materials which obstruct the realisation of excellent finishes of the cold weather shoe.

Another problem with the aforementioned type of monoblock is that it must be stitched to an internal insole which, in addition to involving an additional production cost, does not guarantee total waterproofing and insulation of the foot, for which reason a further hygienic insole or fusbett has to be inserted inside the aforementioned monoblock.

Another problem of both of the aforementioned types of semi-finished monoblocks available on the market today is that the choice of the materials is made either with a view to obtaining good insulation, to the detriment of the shoe’s aesthetic appearance, or with a view to obtaining good physical-mechanical characteristics, to the detriment, in the latter case, of the insulation, so it is not possible today to obtain a monoblock for cold weather footwear that provides both excellent insulation and an aesthetic appearance to suit the user’s taste.
The above-described monoblocks for cold weather footwear do not appear to be protected by any kind of design right, the only one found by the applicant company being USA Patent No. US5802740(A), published on 08 September 1998, which in any case claims a method for insulating the foot from water that is totally different from the one claimed by the present patent.

Disclosure of invention

It is this patentable subject-matter to resolve the problems currently referred to by proposing a semi-finished monoblock for cold weather footwear moulded with two or more materials, each of which having its own characteristics both aesthetic and technical so as to provide the shoe with improved functionality and versatility.

Further, this invention has the aim of providing a semi-finished monoblock for cold weather footwear moulded directly with the internal insole in order to make it totally waterproof and perfectly insulated, eliminating the need for the hygienic insole or fusbett and its strobel stitching, thereby simplifying the production process and reducing the cost of production of the cold weather shoe.

Further, this invention has the aim of providing a semi-finished monoblock for cold weather footwear, the design and functionality of which no longer depend on the insulating material with which the monoblock has been moulded.

Further, this invention has the aim of providing a semi-finished monoblock for cold weather footwear that can directly accommodate within its interior during the moulding phase specific technical devices such as the accident-prevention devices envisaged by the safety standards laid down for safety footwear, so as to allow considerable savings in their production costs.
Further, this invention has the aim of providing a semi-finished monoblock for cold weather footwear that can isolate and insulate all sides of the foot, the realisation of which takes place directly during the moulding phase alone. Not the last patentable subject-matter is to obtain a semi-finished monoblock for cold weather footwear with better technical, aesthetic and functional characteristics than those presently available on the market. These and other objects are achieved according to the invention that is the object of the present application which concerns a semi-finished monoblock for cold weather footwear moulded with two or more materials chosen for their specific aesthetic, technical and functional characteristics which allow the direct moulding to an internal insole so as to guarantee total insulation and waterproofing of its interior and the subsequent gluing or moulding of the monoblock with its moulded internal insole to the external sole, the choice of tread material and design for which may be made by the user on the basis of his/her aesthetic and functional requirements with regard to resistance, abrasion, better grip, lighter weight etc. according to the conditions to which the shoe is likely to be exposed.

According to the specific use of the shoe, such as for example safety footwear, the invention that is object of the present application presents the variation of permitting the monoblock to be moulded directly with the accessories required by accident-prevention legislation for safety footwear, such as the fitting of reinforced or crush-resistant toe caps or of an internal anti-perforation insole.

Detailed description

Further features and advantages of the invention shall be better understood from the description of a preferred but not exclusive embodiment of the
present application, illustrated by way of indicative but non-limiting example in the accompanying drawings in which:

Fig. 1 shows a side cross-section of the monoblock that is the object of the present application;

Fig. 2 is a side view of the semi-finished monoblock detached from the external bottom and from the leg of the upper;

Fig. 3 is a view of the finished cold weather shoe.

The invention that is the object of the present application is a semi-finished monoblock (1) for cold weather footwear (9) moulded with two or more materials that, depending on the use for which the said type of shoe is designed, may be equipped directly also with accessories that improve its performance and that are envisaged by the appropriate accident-prevention legislation required, for example, for safety footwear.

Two materials are usually employed to make the monoblock, but more than two may be used and they may be chosen for each part of the monoblock.

Thus in the internal part of the monoblock, the material (2) chosen will have the characteristic of being an expanded and/or insulating type of material in order to isolate the foot from the harsh external temperatures, while for its external part materials (4/a) and (4/b) with aesthetic and technical characteristics will be chosen in order to facilitate its assembling to the tread sole (3) of the monoblock (1), for the moulding of which harder or softer materials will be employed depending on the use for which the finished product is designed, or that guarantee the specific characteristics required by the final use of the shoe (9).

The insulation of the semi-finished monoblock (1) is ensured by the insulating materials (2) moulded inside it that totally envelop the foot in order to guarantee the total waterproofing of its interior.
The external sole (3) with its tread (10), for which the materials most suitable for obtaining the specific characteristics required for its final use will be chosen, is then glued or moulded to the semi-finished monoblock (1) moulded directly with its internal insole (7).

The semi-finished monoblock (1) of this invention also provides for the possibility of being directly equipped with the accessories required by the accident-prevention legislation for safety footwear, such as an anti-perforation insole (6) or a reinforced, crush-resistant toe cap (5).

Using various types of fastening (gluing, stitching, welding etc.) the top leg of the upper (8) is fitted on the monoblock (1) with a view to obtaining the cold weather shoe (9) composed of its three main elements: the leg (8) which is the uppermost part of the shoe, the external sole (3) with its tread (10), the semi-finished monoblock (1) as described above.

The materials and the dimensions of the invention as further illustrated in the accompanying drawings and later claimed, may be varied according to requirements. Moreover, all the details may be replaced by other technically equivalent ones without for this reason straying from the protective scope of the present invention patent application.
CLAIMS

1. Semi-finished monoblock for cold weather footwear for the purpose of providing effective insulation and waterproofing of the foot with the peculiarity that the said monoblock is moulded with two or more materials directly to the internal insole so as to guarantee total insulation and waterproofing of its interior.

2. Semi-finished monoblock for cold weather footwear as claimed in claim 1 characterised by the fact that the two or more materials with which it is moulded have been chosen in function of the specific aesthetic and technical characteristics required by the use of the cold weather shoe, adopting for the external part of the monoblock materials determined by the various aesthetic requirements and for the internal part of the monoblock insulating materials in order to guarantee the thermal insulation of the foot.

3. Semi-finished monoblock for cold weather footwear as claimed in claims 1 and 2 characterised by the fact that the two or more materials with which it has been made enable the said semi-finished monoblock to be glued or moulded to an external sole the tread design of which may be chosen in function of the aesthetic or functional requirements for which the cold weather shoe is to be used.

4. Semi-finished monoblock for cold weather footwear as claimed in claims 1, 2 and 3 characterised by the fact that its direct moulding to the internal insole determines cost savings in terms of other accessory materials and reduces production time by eliminating the strobel stitching phase.

5. Semi-finished monoblock for cold weather footwear as claimed in claims 1, 2, 3 and 4 characterised by the fact that its direct moulding with the
internal insole improves the insulation function and guarantees the total waterproofing of the invention.

6. Semi-finished monoblock for cold weather footwear as claimed in claims 1, 2, 3, 4 and 5 characterised by the fact that it can be directly moulded with special technical devices such as those for accident prevention envisaged for safety footwear, such as a reinforced or crush-resistant toe cap or an anti-perforation insole or other device, so as to enable considerable savings in the production costs of the finished product.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

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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)

A43B  B29D

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

Electronic database consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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<td>GB 2 146 282 A (PICKENS FOOTWEAR CO) 17 April 1985 (1985-04-17) column 4, line 43 - line 64; figures</td>
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Further documents are listed in the continuation of Box C.

See patent family annex.

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**Date of the actual completion of the International search**

15 May 2009

**Name and mailing address of the ISA/**

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
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**Date of mailing of the International search report**

27/05/2009

Authorized officer

Schölvinck, Thérèse
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<td>A</td>
<td>US 5 802 740 A (MERK SR ER IK E [US]) 8 September 1998 (1998-09-08) cited in the application abstract; figures</td>
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<td>FR 2551394 A1</td>
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