

Title (en)
The method of heat sealing of footwear uppers with vapour permeable membrane and the device to be used for heat sealing in accordance with this method

Title (de)
Verfahren zur Heißversiegelung von Schaftmaterialien mit dampfdurchlässiger Membran und Vorrichtung zur Heißversiegelung gemäß des Verfahrens

Title (fr)
Procédé de thermoscellage des tiges de chaussure avec une membrane perméable à la vapeur et dispositif à utiliser pour le thermoscellage conformément à ce procédé

Publication
EP 2353421 A1 20110810 (EN)

Application
EP 10195757 A 20101217

Priority
PL 39036810 A 20100208

Abstract (en)
The method consists in the following points: the membrane (2) prepared for heat sealing is inserted into the upper (1), the both elements are positioned to each other and preliminarily heat sealed together in at least one area (35); then the upper (1) prepared in this manner with membrane (2) is inserted onto a heating and holding down member (5) provided with expendable reservoir (12) enabling the pressure of its external skin onto the inner surface of the membrane (2) as a result of the pumping of gas into the reservoir (12) under the pressure not higher than 0,1 MPa; while the extendable skin of the reservoir (12) is heated up to the temperature not higher than 200°C and the pressure of this hot skin of the reservoir (12) onto the membrane surface is maintained during the period required for the activation of thermosetting adhesive and its penetration to the contacting layers of the upper (1) and membrane (2). The device consists of the support structure (3) with the plate (4), the heating and holding down stem (5) installed on the plate (4), pressure reducer (6) with the valve (7) and temperature controller (8); wherein the heating and holding down stem (5) incorporates the core (9) fastened to the plate (4) and incorporating: the heater (10) and temperature sensor (11) connected with electric temperature controller (8); on its side surface, the core (9) is provided with inserted flexible and extendable reservoir (12) with at least one opening (13) the boundary of which is fastened on the surface of this core (9) in a tight manner. The core (9) incorporates an opening (14) to be used for the supply of compressed gas to the extendable reservoir (12) from the compressed gas source via pressure reducer (6) and valve (7). The shape of the core (9) is almost cylindrical and the reservoir (12) is made of the material resistant to the impact of increased temperature of up to 200°C. There are variant solutions of the core (9) in the scope of the fastenings of reservoir (12) completed also in variant design solutions.

IPC 8 full level
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CPC (source: EP)
A43B 7/125 (2013.01); **A43B 23/06** (2013.01)

Citation (applicant)
EP 1635665 A1 20060322 - NEXTEC SRL [IT]

Citation (search report)
• [XYI] DE 10031827 C1 20020117 - HELIX SCHUHFABRIK GMBH & CO [DE]
• [Y] GB 190927133 A 19100324 - GRUNE AUGUST HERMANN MAX [DE]
• [A] WO 2007007369 A1 20070118 - NEXTEC SRL [IT], et al

Cited by
CN111329183A; US11596206B2; US11382391B2; US10314362B2; US10314353B2; US11154105B2; US11785998B2

Designated contracting state (EPC)
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