(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 036 449 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
18.03.2009 Bulletin 2009/12

(51) Int Cl.:
A43B 3/30 *(2006.01)* ***A43B 11/00*** *(2006.01)*
A43C 11/14 *(2006.01)*

(21) Application number: **08011511.6**

(22) Date of filing: **25.06.2008**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA MK RS

(30) Priority: **12.09.2007 IT TV20070151**

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(54) Shoe with heel area opening to make the fit easy and adjustable

(57) Shoe with heel area with adjustable opening including a sole and an upper, characterised in that the upper is divided into a rear portion and a front portion, said rear portion being hinged on an axis passing through a hinge that connects the rear portion to the sole, the reciprocal position of the rear portion with respect to the front portion is determined by the insertion degree of at least one toothed tongue, hinged at one end on the rear portion of the upper, inside at least one device for the hooking of the toothed tongue, placed at the front portion of the upper.

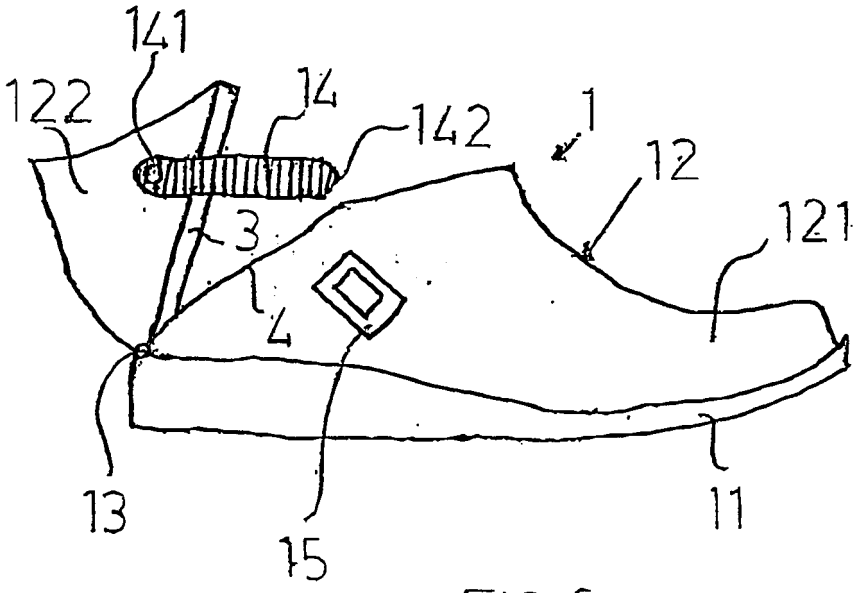


FIG. 2

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Description

[0001] This invention has as object a shoe with heel area opening to make the fit easy and adjustable.

[0002] The invention, finds particular even if not exclusive destination in the field of children's clothing and, in particular, footwear.

[0003] Footwear for young children and in the developing age, and clothing in general, is a typical problem for parents, because in this age group children grow rapidly making it therefore necessary to adapt clothing to successive growth stages. The circumstance entails significant costs that can affect the family budget significantly.

Prior art

[0004] Solutions of adjustable shoes are known in the field of children's footwear, that is footwear equipped with devices or elements that allow the shoe to be easily adapted, within a certain range of predefined values, following the growth of the child's foot. This results in the achievement of the aim relative to adjusting the same shoe in function of the progression of sizes of the foot.

[0005] In literature the following anteriorities can be found regarding this:

[0006] JP5192201 (Aasaa), describes a children's shoe equipped with a removable internal sole with a particular structure, that compensates for the smaller-sized foot inside the shoe; said internal sole obviously is removed with the growth of the child.

[0007] US5570523 (Ji-Tyan) describes a modular shoe, that is, in which the part of the upper that bands the heel is separated from the front part of the upper, and further custom insoles can be applied inside in order to increase the internal thickness and therefore to satisfy the needs of a smaller-sized foot.

[0008] JP11169202 (Kazuyuki) and GB465968 (Hutton), propose a shoe in which the part of the upper that bands the heel is separated from the front part of the shoe; the two parts are hooked at the sole by means of male-female connections.

[0009] In US3142911 (Raborg) a shoe for children equipped at the upper portion of the heel with a vertical opening closed with laces is described, that can to be partially opened loosening the closing laces to ensure that the shoe itself adapts to the growth of the child's foot.

[0010] All these things considered it is therefore reasonable to consider known:

- Children's footwear, adjustable in size being modular, connecting in an appropriate way the rear part to the front part of the shoe, are however two separate components, to be adapted to the dimension of the foot of the child;
- Children footwear in which the adjustment is allowed by some laces on an opening of the upper portion that bands the heel, laces which may be loosened or tightened according to needs.

Drawbacks

[0011] The above mentioned solutions, according to the opinion of the applicant, seem to solve effectively the problem of obtaining a shoe whose size can be adjusted in function of the child's growth, however for their structure they do not allow for fast and easy fitting to the child's foot and some solutions are very complex because of the use of the modular shoe concept, others instead have a limited possibility of adjustment. In good substance, the prior art does not seem to include a children's shoe that conjugates at the same time a minimum complexity as to construction with easy and functional fitting and optimal adjusting function of the dimension of the shoe itself, in order to go along with the increasing size of the foot.

[0012] In particular we point out that the solutions proposed in US5570523 (Ji-Tyan), JP11169202 (Kazuyuki) and GB465968 (Hutton) result in little practical use, difficult fitting and complex assembly, the user having to completely dismount the shoe in order to adjust its size with the disadvantage that there may be a strong possibility of causing the regulating systems to open, maybe during strong stresses for example during a run or climbing and descending steps. Moreover, the shoe being modular, it is easier for water to infiltrate in the connection points of the different elements when it rains or when stomping on wet surfaces.

[0013] On the other hand, the technical solutions proposed by JP5192201 (Aasaa), and by US3142911 (Raborg) achieve only a limited adjustment resulting anyway in a poor practical fitting and besides, in the solution proposed by the American patent, the laces in contact with the heel can at the very least cause inconvenience, and even hurt the child while walking about and also cause fastidious cuts or blisters.

[0014] A further disadvantage, in the adjustable footwear and in the techniques adopted until today, relates to the fact that the components that participate to the adjustment of the shoe do not allow for a rationalisation of the production costs and management of the storehouse codes.

[0015] There is therefore the need for the enterprises of the field to find optimal solutions to obtain the following set aims.

[0016] This and other aims are reached by the this invention according to the characteristic of the included claims, solving the abovementioned problems by means of a shoe whose heel area has an adjustable opening including a sole and an upper, **characterised in that** the upper is divided into a rear portion and a front portion, said rear portion being hinged on an axis passing through a hinge that connects the rear portion to the sole, the reciprocal position of the rear portion with reference to the front portion is determined by the insertion degree of at least one toothed tongue, hinged with an end on the

rear portion of the upper, internally to at least one hooking device of the toothed tongue, placed at the front portion of the upper.

Aims

[0017] By the considerable creative contribution whose effect constitutes an immediate technical progress different aims are achieved.

[0018] In the first place, a particularly easy fitting shoe for children being rearward openable was desired, whose fitting is above all simplified whatever the position of the foot is, also, for example, if it is a little rotated with respect to the shoe to be fitted.

[0019] Another aim that was desired was the obtainment of a shoe particularly for children with a greater adjusting and adapting capacity as to the child's growth and therefore a shoe with universal fitting.

[0020] An additional aim consists in the fact that the shoe, structured as desired, is roomy and comfortable and does not present cutting or unsuitable blister dangers for the child's foot, a non-decomposable shoe avoiding possible slackness or accidental opening problems of the hooking systems of the shoe itself during normal use as well as possible water infiltrations.

[0021] A third aim was to obtain a shoe that in completely open configuration could also act as sandal in the summer period, letting the foot perspire to a greater extent.

[0022] One more aim is referable to the fact that the number of components participating in the embodiment of the shoe, is extremely moderate, above all simplifying and making the management of storehouse codes easier.

[0023] These, and other advantages will appear from the following detailed description of some preferred embodiments with the aid of enclosed schematic drawings whose details are not to be considered limitative but only illustrative.

Content of the drawings

[0024] Figure 1 is a side-view of the shoe object of the invention completely closed.

[0025] Figure 2 is a side-view of the shoe object of the invention completely open.

[0026] Figure 3 is a view from the rear part of the shoe object of the invention completely closed.

[0027] Figure 4 illustrates the longitudinal section of the lower connection border 4 and of the upper connection border 3 in the complete closing phase and in the partial closing phase of the shoe object of the invention.

Practical embodiment of the invention

[0028] With reference also to the figures the object of the invention refers to the children's shoe 1 with adjustable heel area opening (figs. 1, 2, 3) and a constructive particular (fig. 4).

[0029] The shoe 1 object of the invention is essentially composed by a sole 11 and an upper 12.

[0030] In the described, not limitative, example of a practical embodiment, the upper 12 is substantially divided in a front portion 121 corresponding to the tip and the back of the foot and in a rear portion 122, corresponding to the heel area with adjustable opening, according to an imaginary straight line inclined with respect to the plane of the sole 11 about 45° and passing through the hinge 13 (fig. 1). The front portion 121 is joined to the sole 11, while the rear portion 122, that bands the heel, is movable being hinged in its lower end, by means of a hinge 13, at the rear end of the sole 11 and at the end of the front portion 121 of the upper 12.

[0031] The rear portion 122 is equipped with two toothed tongues 14 each of which is hinged at the end 141 to the rear portion 122. The tongues 14 are therefore able to rotate around the axis passing through the hinging point of the end 141. The tongues 14, as said above, are placed in a symmetrical position and on opposite sides of the rear portion 122 of the upper 12 with respect to longitudinal axis of the shoe 1.

[0032] The free end 142 of each tongue 14, during the approach of the rear portion 122 to the front portion 121 for the closing of the shoe, is inserted inside the hooking device of the toothed tongue 15 placed, obviously, in a congruent position for the insertion of the free end 142 of the tongue 14, on the front portion 121 of the upper 12. The hooking device 15 of the toothed tongue 14 that in this case consists of a hooked lever, is present at least in a quantity of two and each of them is placed in a symmetrical position and on opposite sides of the rear portion 122 with respect to the longitudinal axis of the shoe 1. In one of the cases, in order to facilitate the insertion of the toothed tongue 14, the hooking device 15 can be hinged too in such a way as to present the orientable entry in relation to the inclination degree of the toothed tongue 14.

[0033] The adjustment of the shoe 1 object of the invention is carried out more or less partially inserting the toothed tongue 14, by means of the free end 142, inside the hooking device 15 of the toothed tongue 14, therefore more or less approaching the rear portion 122 to the front part 121 in such a way as to give the child a comfortable fit, said rear portion 122 being able to rotate around the axis passing through the hinge 13. The hinge 13 in one of the cases can be composed by a mechanical device, or alternatively, comprise a connecting material portion of the yielding type in order to allow for the rotation of the rear portion 122, with respect to the front portion 121.

[0034] Completely extracting the toothed tongues 14 from the hooking devices 15 it is possible to obtain the complete opening between the front portion 121 and the rear portion 122 of the upper 12, making the fitting to the child easy from the rear opening of the shoe obtained in this way.

[0035] Finally it should be stated that in order to prevent water infiltrations or in any case tangling unsuitable phe-

nomena of the upper 12 at the edge of the contact upper between the rear portion 122 and the front portion 121 during the closing of the shoe 1, the upper connection border 3 of the rear portion 122, acting as a male connection, is more or less partially inserted in the guiding seat 401 (see fig. 4) according to the closing degree, guiding seat 401 acting as a female connection and obtained in the lower connection border 4 of the front portion 121 of the upper 12.

Reference:

[0036]

1 shoe,
11 sole,
12 upper,
121 front portion,
122 rear portion heel area with adjustable opening,
13 hinge,
14 tongue, 141 end, 142 free end
15 hooking device,
3 upper connection border,
4 lower connection border, 401 guiding seat.

Claims

1. Shoe 1 with adjustable opening including a sole 11 and an upper 12, **characterised in that** the upper 12 is divided into a rear portion 122 and a front portion 121, said rear portion 122 being hinged on an axis passing through a hinge 13 that connects the rear portion 122 to the sole 12, is provided with at least a tongue 14, hinged at the end 141 on the rear portion 122, able to be introduced in at least one corresponding hooking device 15, placed on the front portion 121.

2. Shoe 1, according to claim 1, **characterised in that** the reciprocal position of the rear portion 122 with respect to the front portion 121 is determine by the insertion degree of the tongue 14 in the corresponding hooking device 15.

3. Shoe 1, according to claim 1 and 2, **characterised in that** the rear portion 122 is equipped with an upper connection border 3 that gradually deepens inside the guiding seat 401 of the lower connection border 4, during the rotational approaching phase of the rear portion 122 to the front portion 121 of the upper 12 for the fitting of the shoe 1.

4. Shoe 1, according to the previous claims, **characterised in that** it includes two tongues 14 hinged to the rear portion 122 symmetrically and from opposite sides with respect to the longitudinal axis of the shoe 1, each of the tongues 14 which can be inserted in the corresponding hooking device 15 fixed to the rear portion 121 symmetrically and from opposite sides with respect to the longitudinal axis of the shoe 1.

5. Shoe 1, according to the previous claims, **characterised in that** the hooking device 15 of the tongue 14 is hinged to the front portion 121.

6. Children's shoe with adjustable rear opening, according to the previous claims, **characterised in that** it includes:

1 shoe
11 sole
12 upper, 121 front portion,
122 rear portion heel area with adjustable opening
13 hinge
14 tongue, 141 end, 142 free end
15 hooking device
3 upper connection border,
4 lower connection border, 401 guiding seat.

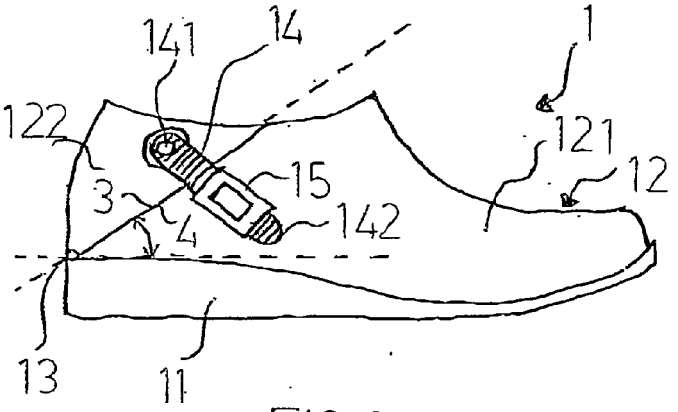


FIG. 1

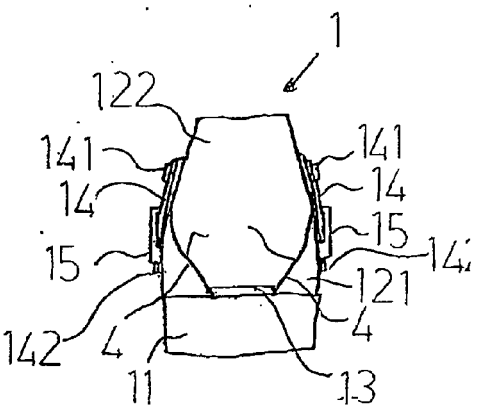


FIG. 3

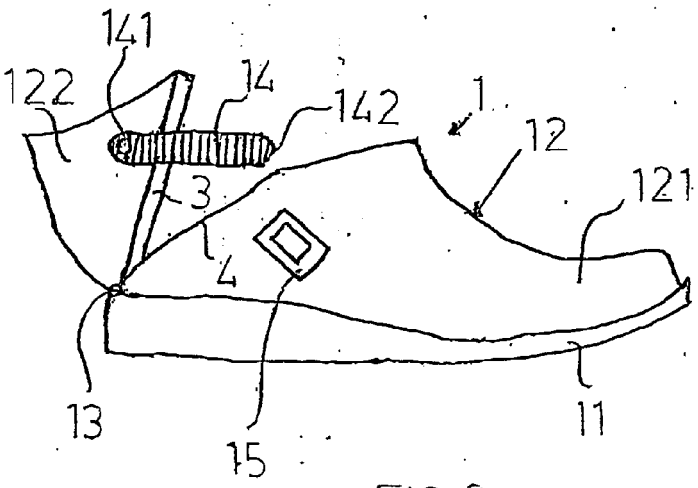


FIG. 2

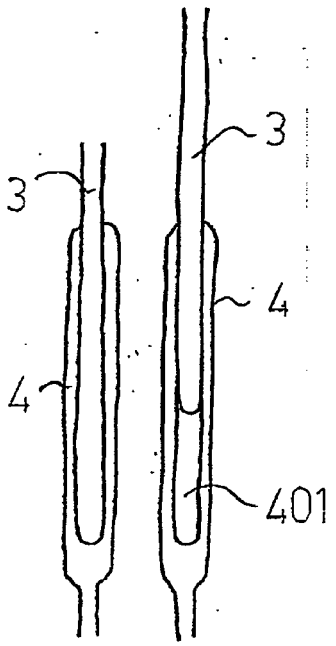


FIG. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 08 01 1511

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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TECHNICAL FIELDS SEARCHED (IPC)

A43B
A43C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	5 November 2008	Claudel, Benoît

CATEGORY OF CITED DOCUMENTS

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