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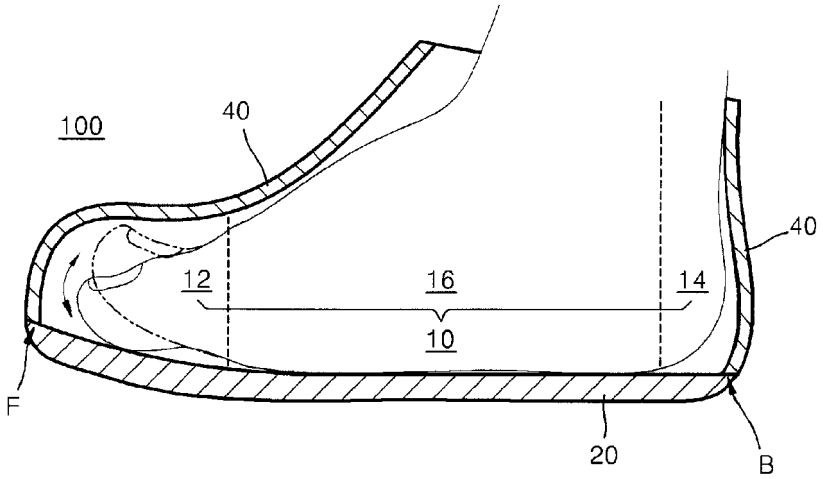
(54) INFANT SHOE AND LAST USED FOR MANUFACTURING SAME

(57) The present disclosure relates to footwear (100) for infants and toddlers manufactured according to foot shape characteristics and walking characteristics of infants and toddlers, different from those of adults, and a last used for manufacturing the same. The footwear for infants and toddlers includes an inner space (10) composed of a toe room (12) in which the toe is disposed, a heel room (14) in which the heel is disposed, and a middle room (16) located between the toe and the heel and in which the foot sole and the foot top are disposed. In particular, since the toe room (12) is formed higher than the toe, an infant or toddler walks while minimizing interference in toe movement.

If the footwear for infants and toddlers and the last used for manufacturing the same according to the present disclosure is used, since the toe room is provided higher than the toe, an infant or toddler may walk more stably and cognitive behavior development of the infant or toddler may be promoted. In addition, since the inner space has a bottom surface with a fan-shaped foot sole whose width is increasing from the back end to the front end in accordance with the foot sole of an infant or toddler, abnormal growth of the foot of the infant or toddler may be prevented.

[Fig. 1]



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Description

[Technical Field]

[0001] The present disclosure relates to footwear for infants and toddlers and a last used for manufacturing the same, and more particularly, to footwear for infants and toddlers manufactured according to foot shape characteristics and walking characteristics of infants and toddlers, different from those of adults, and a last used for manufacturing the same.

[Background Art]

[0002] Footwear for infants and toddlers is used from the point when infants and toddlers start learning a toddle and plays a role of helping walking of an infant or toddler or protecting the foot of an infant and toddler outdoors.

[0003] In relation to such footwear for infants and toddlers, Korean Unexamined Patent Publication No. 10-2006-0057303, entitled "indoor and outdoor footwear for infants", Korean Unexamined Patent Publication No. 10-2004-0076585, entitled "inner sole set of footwear for infants and toddlers", Korean Utility Model Registration No. 20-0281420, entitled "footwear for infants", Korean Utility Model Registration No. 20-0447718, entitled "footwear for infants" or the like have been proposed.

[0004] However, such footwear for infants and toddlers is manufactured by just reducing adult footwear to a size suitable for infants and toddlers while maintaining its shape. Therefore, since foot shape characteristics (e.g., a fan-shaped foot sole) and walking characteristics (keeping balance by means of toe movement when walking), different from those of adults, are not considered, the footwear for infants and toddlers may cause side effects when being worn.

[0005] In other words, during the period of infants and toddlers in which the foot size increases and the foot shape changes, if the foot shape is restrained or confined by wearing inappropriate footwear, the foot of an infant and toddler grows abnormally, which may cause deformity or unbalanced development of the body. In addition, since the foot restrained by the footwear may not normally move, a normal walking pattern may not be learned, resulting in wrong gaits.

[0006] In addition, since the foot is restrained by the footwear, cognitive behavioral development according to various physical behaviors such as foot movement deteriorates, which may be an obstacle in intellectual development of infants and toddlers.

[0007] Accordingly, the development of footwear for infants and toddlers in consideration of foot shape characteristics and walking characteristics of infants and toddlers is being demanded.

[0008] Meanwhile, if infants and toddlers untrained in walking wear footwear, it is difficult to keep balance during walking since the center of gravity moves higher as much as the sole height of the footwear, which should be considered when designing the footwear for infants and toddlers.

[Disclosure]

[Technical Problem]

[0009] The present disclosure is directed to providing new-type footwear for infants and toddlers, which ensures stable walking of an infant or toddler who is wearing the footwear and promotes cognitive behavior development of the infant or toddler by providing a toe room formed higher than the toe of the infant or toddler, and a last used for manufacturing the footwear.

[0010] In addition, the present disclosure is directed to providing new-type footwear for infants and toddlers, which may eliminate an interference between the footwear and the foot when the footwear is worn and thus prevent abnormal growth of the foot of an infant or toddler, by providing an inner space with a bottom surface whose width gradually increases from the rear end to the front end in accordance with the foot sole of the infant or toddler who has a fan-shaped flat foot, and a last used for manufacturing the footwear.

[0011] In particular, the present disclosure is directed to providing new-type footwear for infants and toddlers, which may be worn by an infant or toddler in an optimal way, by forming an inner space of the footwear by a last whose dimension is limited in accordance with foot shape characteristics and walking characteristics of the infant or toddler, and a last used for manufacturing the footwear.

[0012] Moreover, the present disclosure is directed to providing new-type footwear for infants and toddlers, which may prevent an infant or toddler from falling down when walking by decreasing the entire sole thickness of the footwear and thus minimizing the rise of the center of gravity of the infant or toddler who is wearing the footwear, and also promote growth and development of an infant or toddler by using a sole made of soft and flexible material to ensure smooth foot movement, and a last used for manufacturing the footwear.

[Technical Solution]

[0013] In one general aspect, the present disclosure provides footwear for infants and toddlers, including: an inner space 10 composed of a toe room 12 in which the toe is disposed; a heel room 14 in which the heel is disposed; and a middle room 16 located between the toe and the heel and in which the foot sole and the foot top are disposed, wherein the inner space 10 has a length L of 110 to 140 mm in accordance with foot sizes of infants and toddlers, wherein a height H of the front end F of the toe room 12 at a point corresponding to 80 to 85% of the length L of the inner space 10 from the back end B of the inner space 10 is 20 to 30 mm so that the toe room 12 is formed higher than the toe, thereby allowing an infant or toddler to walk while minimizing an interference in toe

movement, and wherein the footwear is a sock-integrated footwear 100a formed by injection-molding a sole 120, prepared in accordance with a flat foot of an infant or toddler, to a sock in a mold.

[0014] In addition, bottom surfaces of the heel room 14 and the middle room 16 may become gradually broader in a forward direction and connect to a bottom surface of the toe room 12 so that a bottom surface of the inner space 10 has the same shape as a fan-shaped foot sole of the infant or toddler.

[0015] In addition, a width W_1 of the bottom surface of the toe room at the point corresponding to 80 to 85% of the length L of the inner space 10 from the back end B of the inner space 10 may be 1.6 to 1.7 times of a width W_2 of the bottom surface of the heel room at a point corresponding to 10% of the length L of the inner space 10 from the back end B of the inner space 10.

[0016] Moreover, a width W_3 of the bottom surface of the middle room at a point corresponding to 40% of the length L of the inner space 10 from the back end B of the inner space 10 may be 1.0 to 1.4 times of a width W_2 of the bottom surface of the heel room at a point corresponding to 10% of the length L of the inner space 10 from the back end of the inner space 10.

[0017] In addition, an entire thickness T of a sole 20 formed at a lower portion of the inner space 10 may be 5 mm or less.

[0018] In addition, a sole 20 formed at a lower portion of the inner space 10 may be made of material having a shore A hardness of 30 to 45, a specific weight of 1 g/cm^3, tear strength of 20 kg/cm or above, tensile strength of 45 N/m^2 or above, and an elongation of 700% or above.

[0019] In addition, a sole 20 formed at a lower portion of the inner space 10 may have a plurality of through holes 22 formed in a vertical direction to improve a sweat emission rate and a footwear dryness factor.

[0020] In another aspect, the present disclosure provides a last used for manufacturing footwear for infants and toddlers, which includes: a bottom surface 2 of a flat foot corresponding to a fan-shaped foot sole of an infant or toddler; and a length L of 110 to 140 mm, wherein a height H of the front end at a point corresponding to 80 to 85% of the length L from the back end of the bottom surface 2 is 20 to 30 mm, wherein a width W_1 of the bottom surface at the point corresponding to 80 to 85% of the length L from the back end of the bottom surface 2 is 1.6 to 1.7 times of a width W_2 of the bottom surface at a point corresponding to 10% of the length L, and wherein a width W_3 of the bottom surface at the point corresponding to 40% of the length L from the back end of the bottom surface 2 is 1.0 to 1.4 times of the width W_2 of the bottom surface at the point corresponding to 10% of the length L.

[Advantageous Effects]

[0021] If the footwear for infants and toddlers according to the present disclosure and the last used for manufacturing the same are used, balance may be easily kept by means of toe movement since the toe of an infant or toddler may easily move in an expanded toe room. In addition, since the rise of the center of gravity of an infant or toddler wearing the footwear is minimized due to a thin sole, the infant or toddler may walk more stably, and it is possible to prevent the infant or toddler from falling down and being damaged when walking.

[0022] In addition, since the toe may freely move even though the footwear of the present disclosure is worn by an infant or toddler, cognitive behavior development of the infant or toddler may be promoted, which gives an educational effect.

[0023] Moreover, since the footwear of the present disclosure includes an inner space having a bottom surface with the same shape as a fan-shaped foot sole of an infant or toddler, even though the footwear is worn by an infant or toddler, there is no interference between the footwear and the foot, which ensures normal growth of the foot of the infant or toddler. Further, since the sole made of soft and flexible material is used, the foot may move smoothly, thereby promoting growth and development of the infant or toddler and allowing a balanced physical figure.

[Description of Drawings]

[0024]

Fig. 1 is a diagram showing a technical spirit of footwear for infants and toddlers according to the present disclosure, in which a toe room is formed higher than the toe.

Fig. 2 is a diagram showing a technical spirit of the footwear for infants and toddlers according to the present disclosure, which includes an inner space having a bottom surface with the same shape as a fan-shaped foot sole.

Fig. 3 is a diagram for illustrating a dimension design condition of footwear for infants and toddlers according to an embodiment of the present disclosure and a last used for manufacturing the same.

Fig. 4a is a diagram showing a front end of a general last which has been used for manufacturing footwear for infants and toddlers.

Fig. 4b is a diagram showing a front end of a last used for manufacturing the footwear for infants and toddlers according to the present disclosure.

Fig. 5a is a diagram showing a bottom surface of a general last which has been used for manufacturing footwear for infants and toddlers.

Fig. 5b is a diagram showing a bottom surface of the last used for manufacturing the footwear for infants and toddlers according to the present disclosure.

Fig. 6a is a side view showing foot shape characteristics of adults.

Fig. 6b is a side view showing foot shape characteristics of infants and toddlers.

Fig. 7a is a front view and a bottom view showing foot shape characteristics of adults.

Fig. 7b is a front view and a bottom view showing foot shape characteristics of infants and toddlers.

Fig. 8 is a diagram showing a sole of the footwear for infants and toddlers according to an embodiment of the present disclosure.

Fig. 9a shows an example in which the footwear for infants and toddlers according to the present disclosure is applied to a sock-integrated footwear.

Fig. 9b shows an example in which the footwear for infants and toddlers according to the present disclosure is applied to a general shoe.

[Best Mode]

[0025] Fig. 1 is a diagram showing a technical spirit of footwear for infants and toddlers according to the present disclosure, in which a toe room is formed higher than the toe.

[0026] Referring to Fig. 1, in the footwear 100 for infants and toddlers according to the present disclosure, a toe room 12 in which the toe of an infant or toddler is disposed is formed higher than the toe. Accordingly, a space remains therein so that the infant or toddler may move the toe in all directions while wearing the footwear 100.

[0027] The footwear 100 for infants and toddlers according to the present disclosure includes an inner space 10 surrounded by a sole 20 and uppers 40. The inner space 10 is composed of the toe room 12 in which the toe is disposed, a heel room 14 in which the heel is disposed, and a middle room 16 located between the toe and the heel and in which the foot sole and the foot top are disposed.

[0028] Here, the toe room 12 of the inner space 10 is formed higher than the toe of an infant or toddler, disposed in the toe room 12, as described above. Therefore, if the infant or toddler wriggles the toes, the interference caused by the toe movement of the infant or toddler, composed of folding or spreading, against the footwear is minimized. Therefore, the toe is not restrained nor confined by the footwear 100. Accordingly, by freely folding or spreading the toes, the infant or toddler may easily keep balance when walking, which ensures stable walking of the infant or toddler who is wearing the footwear 100. In addition, the free movement of the toes may promote cognitive behavioral development of the infant or toddler.

[0029] Fig. 2 is a diagram showing a technical spirit of the footwear for infants and toddlers according to the present disclosure, which includes an inner space having a bottom surface with the same shape as a fan-shaped foot sole.

[0030] Referring to Fig. 2, in the footwear 100 for infants and toddlers according to the present disclosure, the bottom surfaces of the heel room 14 and the middle room 16 become gradually broader in a forward direction and connect to a bottom surface of the toe room 12 so that a bottom surface of the inner space 10 has the same shape as a fan-shaped foot sole of the infant or toddler.

[0031] In other words, the foot of an infant or toddler is a flat foot with a fan-shaped foot sole, different from that of an adult, since it is in a state of growing, and the footwear 100 for infants and toddlers according to the present disclosure is manufactured while considering this. Accordingly, since arch bones are growing along with relevant muscles and ligaments, an arch is formed at the foot. Different from a general shoe for infants and toddlers, manufactured by just decreasing a size of adult footwear in which a central portion of the foot sole is formed narrow, the footwear 100 for infants and toddlers according to the present disclosure prevents the foot from being restrained due to the shape of the footwear 100. Therefore, even though an infant or toddler wears the footwear 100, the foot may grow normally.

[0032] Hereinafter, an embodiment of the present disclosure will be described in detail with reference to Figs. 3 to 9. Meanwhile, components or operations, which may be easily understood from a general shoe, footwear for infants and toddlers, or a last used for manufacturing footwear by those skilled in the art, are depicted or explained in brief or omitted. In particular, in the drawings and the detailed description, specific technical configurations or operations not directly associated with the technical features of the present disclosure are not explained or depicted in detail, and only technical configurations associated with the present disclosure are depicted or explained in brief.

[0033] Fig. 3 is a diagram for illustrating a dimension design condition of footwear for infants and toddlers according to an embodiment of the present disclosure and a last used for manufacturing the same.

[0034] Referring to Fig. 3, in the footwear 100 for infants and toddlers according to an embodiment of the present disclosure, the inner space 10 is formed by using a footwear-manufacturing last 1 whose dimension is limited in consideration of foot shape characteristics (e.g., a fan-shaped foot sole) of the foot of an infant or toddler and walking characteristics (keeping balance by means of toe movement when walking) of an infant or toddler.

[0035] The inner space 10 formed as above optimizes the height of the toe room 12 in accordance with walking characteristics of an infant or toddler. A height H of the front end at a point corresponding to 80 to 85% of the length L of the footwear-manufacturing last 1 from the back end of the bottom surface 2 of the footwear-manufacturing last 1, namely a height H of the front end F of the toe room 12 at a point corresponding to 80 to 85% of the length L of the inner space 10 from the back end B of the inner space 10, should be 20 to 30 mm. This value is limited to the footwear-manufacturing last 1 having a length L of 110 to 140 mm in accordance with a foot size of an infant or toddler.

[0036] In addition, the inner space 10 optimizes the shape of the bottom surface in accordance with the foot

shape characteristics of the foot of an infant or toddler. A width W_1 of the bottom surface of the toe room at the point corresponding to 80 to 85% of the length L of the footwear-manufacturing last from the back end of the bottom surface 2 of the footwear-manufacturing last 1, namely a width W_1 of the bottom surface of the toe room at the point corresponding to 80 to 85% of the length L of the inner space 10 from the back end B of the inner space 10, becomes 1.6 to 1.7 times of a width W_2 of the bottom surface of the heel room at a point corresponding to 10% of the length L of the footwear-manufacturing last from the back end of the bottom surface 2 of the footwear-manufacturing last 1, namely a width W_2 of the bottom surface of the heel room at the point corresponding to 10% of the length L of the inner space from the back end B of the inner space 10. In addition, a width W_3 of the bottom surface of the middle room at the point corresponding to 40% of the length L of the footwear-manufacturing last length L from the back end of the bottom surface 2 of the footwear-manufacturing last 1, namely a width W_3 of the bottom surface of the middle room at the point corresponding to 40% of the length L of the inner space 10 from the back end B of the bottom surface 2, becomes 1.0 to 1.4 times of the width W_2 of the bottom surface of the heel room at the point corresponding to 10% of the length L of the footwear-manufacturing last from the back end of the bottom surface 2 of the footwear-manufacturing last 1, namely the width W_2 of the bottom surface of the heel room at the point corresponding to 10% of the length L of the inner space 10 from the back end of the inner space.

[0037] Meanwhile, an entire thickness T of the sole 20 formed at a lower portion of the inner space 10 is 5 mm or less. This is to minimize the rise of the center of gravity of an infant or toddler who wears the footwear 100, which may prevent an infant or toddler from falling down when walking and allow the infant or toddler to walk while keeping balance more stably.

[0038] Here, the sole 20 is defined as including all of various soles formed at the lower portion of the inner space 10.

[0039] In addition, the sole 20 is made of material having a shore A hardness of 30 to 45, a specific weight of 1 g/cm^3, tear strength of 20 kg/cm or above, tensile strength of 45 N/m^2 or above, and an elongation of 700% or above. In this case, even though the footwear 100 for infants and toddlers is worn, this gives a state like a bare foot so that an infant or toddler may move foot smoothly. Such foot movement may promote growth and development of the infant or toddler.

[0040] Fig. 4a is a diagram showing a front end of a general last which has been used for manufacturing footwear for infants and toddlers, and Fig. 4b is a diagram showing a front end of a last used for manufacturing the footwear for infants and toddlers according to the present disclosure.

[0041] Referring to Figs. 4a and 4b, it may be found that the height H of the front end 3 of the last according to the present disclosure is higher than the height H of the front end 3' of a general last 1'. This difference is caused by the fact whether walking characteristics (keeping balance by means of toe movement when walking) of an infant or toddler are considered or not. In case of the last 1 used for manufacturing the footwear for infants and toddlers according to an embodiment of the present disclosure, the height H of the front end is 20 to 30 mm.

[0042] Fig. 5a is a diagram showing a bottom surface of a general last which has been used for manufacturing footwear for infants and toddlers, and Fig. 5b is a diagram showing a bottom surface of the last used for manufacturing the footwear for infants and toddlers according to the present disclosure.

[0043] Referring to Figs. 5a and 5b, it may be found that the last 1 according to the present disclosure has a fan shape, different from a general last 1' having a foot sole shape of adults. This difference is caused by the fact whether physical characteristics (e.g., a fan-shaped foot sole) of the foot of an infant or toddler are considered or not. In case of the last 1 used for manufacturing the footwear for infants and toddlers according to an embodiment of the present disclosure, a width W_1 of the bottom surface at a point corresponding to 80 to 85% of the length L from the back end of the bottom surface 2 is 1.6 to 1.7 times of a width W_2 of the bottom surface at a point corresponding to 10% of the length L, and a width W_3 of the bottom surface at a point corresponding to 40% of the length L from the back end of the bottom surface 2 is 1.0 to 1.4 times of the width W_2 of the bottom surface at the point corresponding to 10% of the length L.

[0044] Fig. 6a is a side view showing foot shape characteristics of adults, Fig. 6b is a side view showing foot shape characteristics of infants and toddlers, Fig. 7a is a front view and a bottom view showing foot shape characteristics of adults, and Fig. 7b is a front view and a bottom view showing foot shape characteristics of infants and toddlers.

[0045] Referring to Figs. 6 and 7, it may be found that the foot of an infant or toddler has a shape different from the foot of an adult. The foot of an infant or toddler is a flat foot as shown in Fig. 6b, and the foot sole has a fan shape as shown in Fig. 7b.

[0046] Fig. 8 is a diagram showing a sole of the footwear for infants and toddlers according to an embodiment of the present disclosure.

[0047] Referring to Fig. 8, the sole 20 formed at the lower portion of the inner space 10 has a plurality of through holes 22 formed in a vertical direction to improve air permeability. The through holes 22 allow the inner space 10 to communicate with the outside so that sweat in the inner space 10 may easily discharge out and the footwear may be easily dried after being washed.

[0048] Here, the number of through holes 22 formed may be 20 or greater.

[0049] Meanwhile, a circular pattern and a linear pattern formed at the sole 20 as shown in Fig. 8 increases a friction between the footwear 100 and a bottom surface

of a building or the ground, contacted by the footwear contacts 100, thereby preventing the footwear 100 from slipping.

[0050] Fig. 9a shows an example in which the footwear for infants and toddlers according to the present disclosure is applied to a sock-integrated footwear, and Fig. 9b shows an example in which the footwear for infants and toddlers according to the present disclosure is applied to a general shoe.

[0051] Referring to Figs. 9a and 9b, regardless of the kind of footwear or the manufacture method thereof, for example a sock-integrated footwear 100a manufactured by injection-molding a sole 120 to a sock 110 in a mold or a general shoe 100b composed of a sole 130 and uppers 40 and made by means of expansion molding, the footwear 100 for infants and toddlers according to the present disclosure and the last 1 used for manufacturing the same may be applied.

[0052] Heretofore, the present disclosure has been described in detail by means of detailed embodiments, but the present disclosure is not limited to the embodiments but may be modified in various ways without departing from the spirit and scope of the disclosure by those having ordinary skill in the art.

Claims

1. Footwear for infants and toddlers, comprising:

an inner space (10) composed of:

a toe room (12) in which the toe is disposed;
a heel room (14) in which the heel is disposed; and
a middle room (16) located between the toe and the heel and in which the foot sole and the foot top are disposed,

wherein the inner space (10) has a length (L) of 110 to 140 mm in accordance with foot sizes of infants and toddlers,
wherein a height (H) of the front end (F) of the toe room (12) at a point corresponding to 80 to 85% of the length (L) of the inner space (10) from the back end (B) of the inner space (10) is 20 to 30 mm so that the toe room (12) is formed higher than the toe, thereby allowing an infant or toddler to walk while minimizing an interference in toe movement, and
wherein the footwear is a sock-integrated footwear (100a) formed by injection-molding a sole (120), prepared in accordance with a flat foot of an infant or toddler, to a sock in a mold.

2. The footwear for infants and toddlers according to claim 1,
wherein bottom surfaces of the heel room (14) and the middle room (16) become gradually broader in a forward direction and connect to a bottom surface of the toe room (12) so that a bottom surface of the inner space (10) has the same shape as a fan-shaped foot sole of the infant or toddler.

3. The footwear for infants and toddlers according to claim 2,
wherein a width (W_1) of the bottom surface of the toe room at the point corresponding to 80 to 85% of the length (L) of the inner space (10) from the back end (B) of the inner space (10) is 1.6 to 1.7 times of a width (W_2) of the bottom surface of the heel room at a point corresponding to 10% of the length (L) of the inner space (10) from the back end (B) of the inner space (10).

4. The footwear for infants and toddlers according to claim 2,
wherein a width (W_3) of the bottom surface of the middle room at a point corresponding to 40% of the length (L) of the inner space (10) from the back end (B) of the inner space (10) is 1.0 to 1.4 times of a width (W_2) of the bottom surface of the heel room at a point corresponding to 10% of the length (L) of the inner space (10) from the back end of the inner space (10).

5. The footwear for infants and toddlers according to claim 1,
wherein an entire thickness (T) of a sole (20) formed at a lower portion of the inner space (10) is 5 mm or less.

6. The footwear for infants and toddlers according to claim 1,
wherein a sole (20) formed at a lower portion of the inner space (10) is made of material having a shore A hardness of 30 to 45, a specific weight of 1 g/cm^3, tear strength of 20 kg/cm or above, tensile strength of 45 N/m^2 or above, and an elongation of 700% or above.

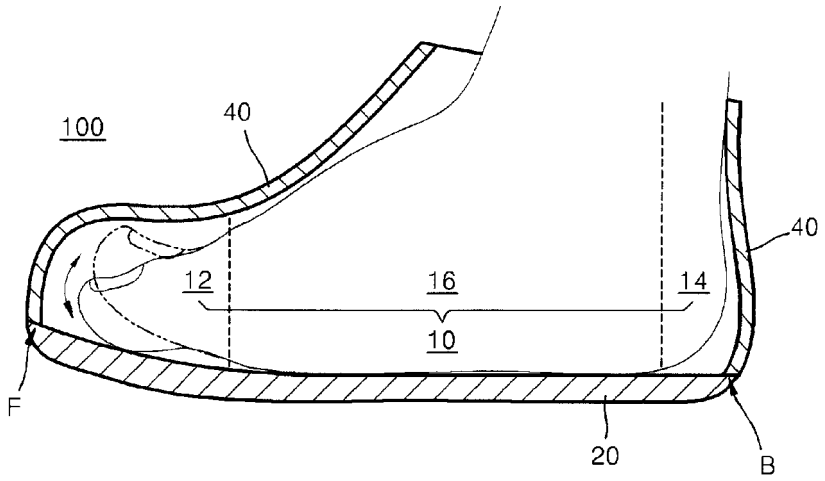
7. The footwear for infants and toddlers according to claim 1,
wherein a sole (20) formed at a lower portion of the inner space (10) has a plurality of through holes (22) formed in a vertical direction to improve a sweat emission rate and a footwear dryness factor.

8. A last used for manufacturing footwear for infants and toddlers, the last comprising:

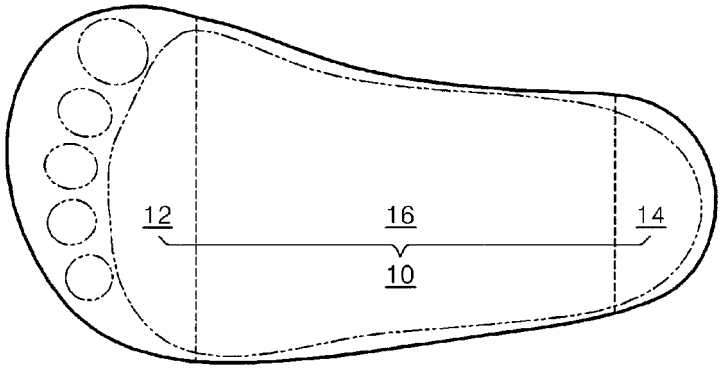
a bottom surface (2) of a flat foot corresponding to a fan-shaped foot sole of an infant or toddler; and
a length (L) of 110 to 140 mm,
wherein a height (H) of the front end at a point

corresponding to 80 to 85% of the length (L) from the back end of the bottom surface (2) is 20 to 30 mm,
wherein a width (W_1) of the bottom surface at the point corresponding to 80 to 85% of the length (L) from the back end of the bottom surface (2) is 1.6 to 1.7 times of a width (W_2) of the bottom surface at a point corresponding to 10% of the length (L), and
wherein a width (W_3) of the bottom surface at the point corresponding to 40% of the length (L) from the back end of the bottom surface (2) is 1.0 to 1.4 times of the width (W_2) of the bottom surface at the point corresponding to 10% of the length (L).

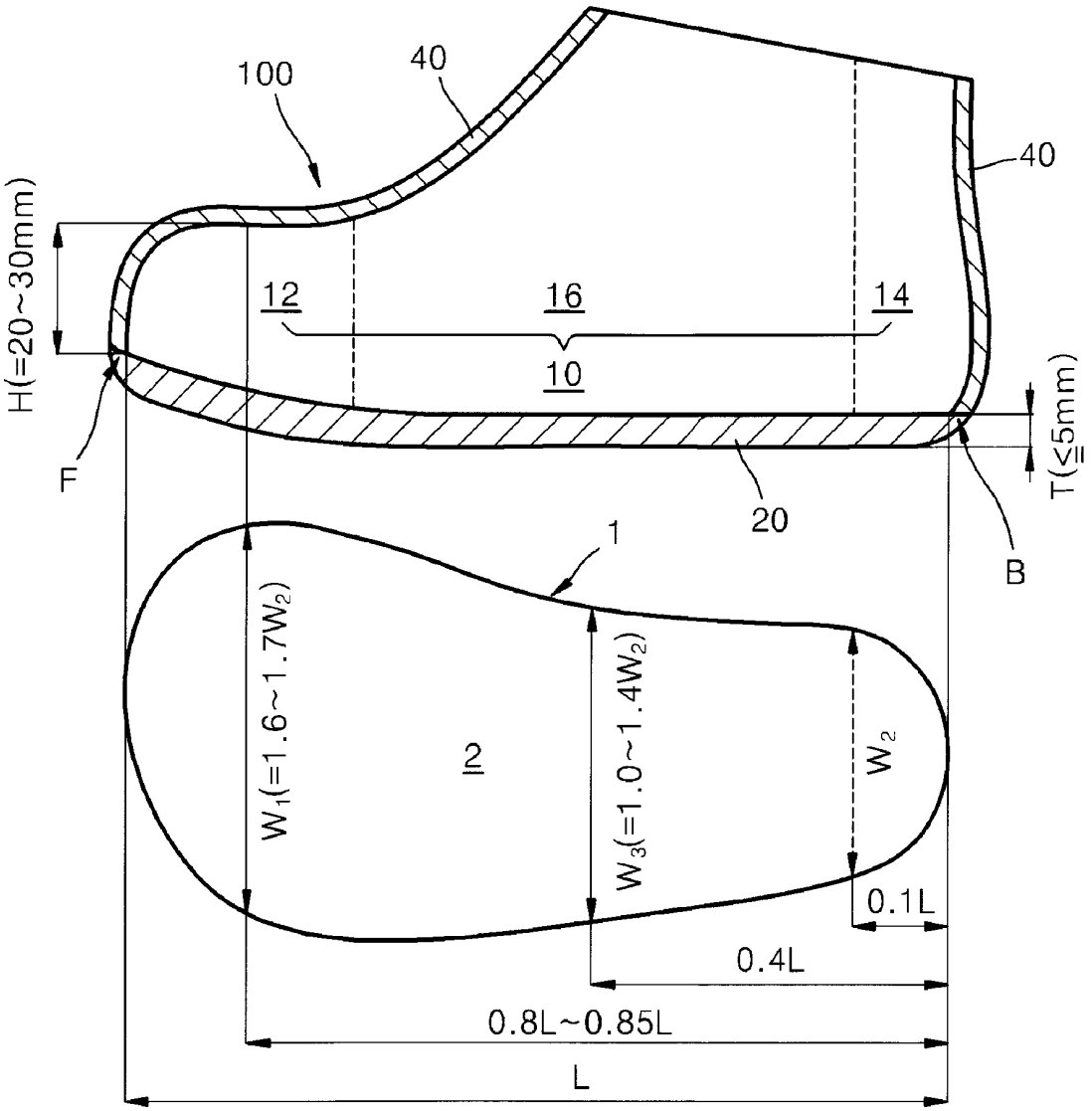
[Fig. 1]



[Fig. 2]



[Fig. 3]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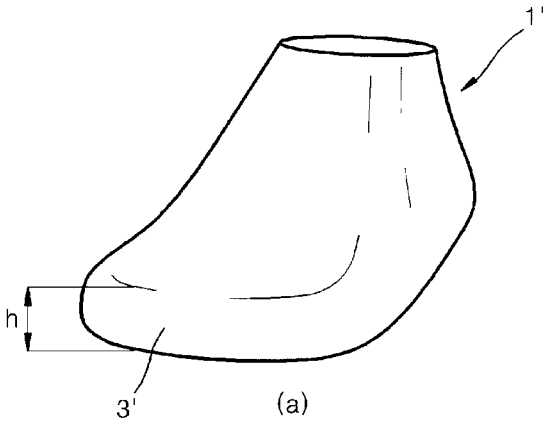
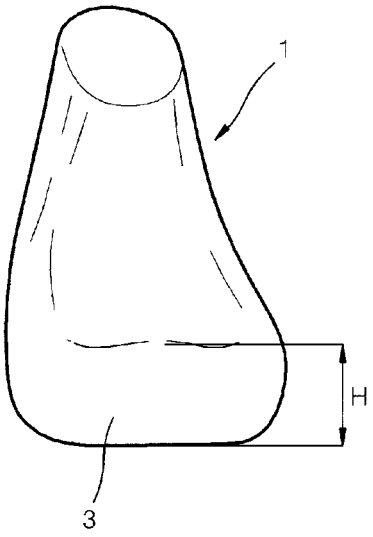
L

[Fig. 4]

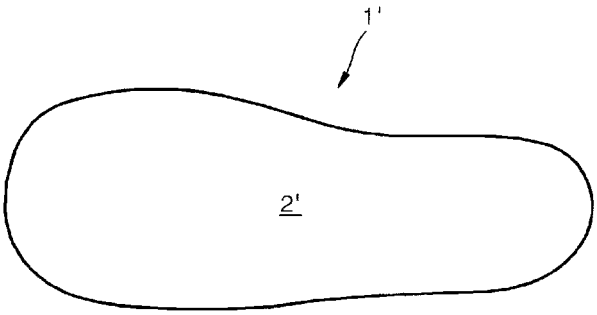


(a)



(b)

[Fig. 5]



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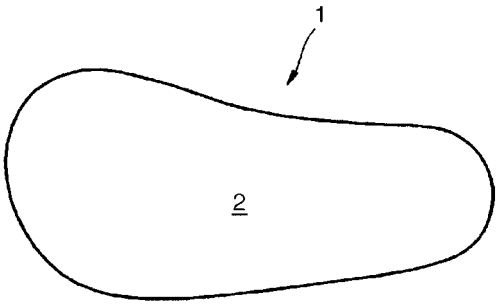
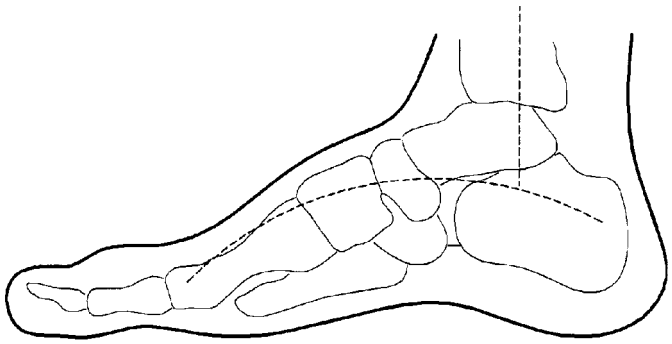


(b)

[Fig. 6]



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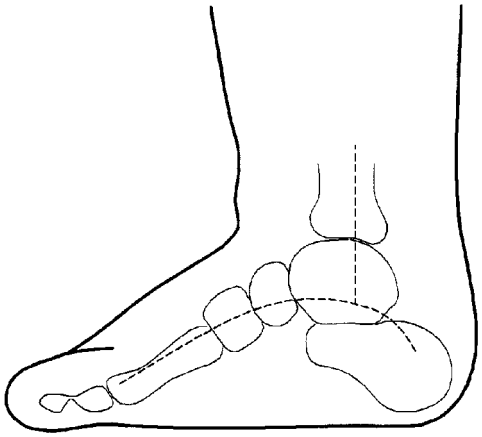
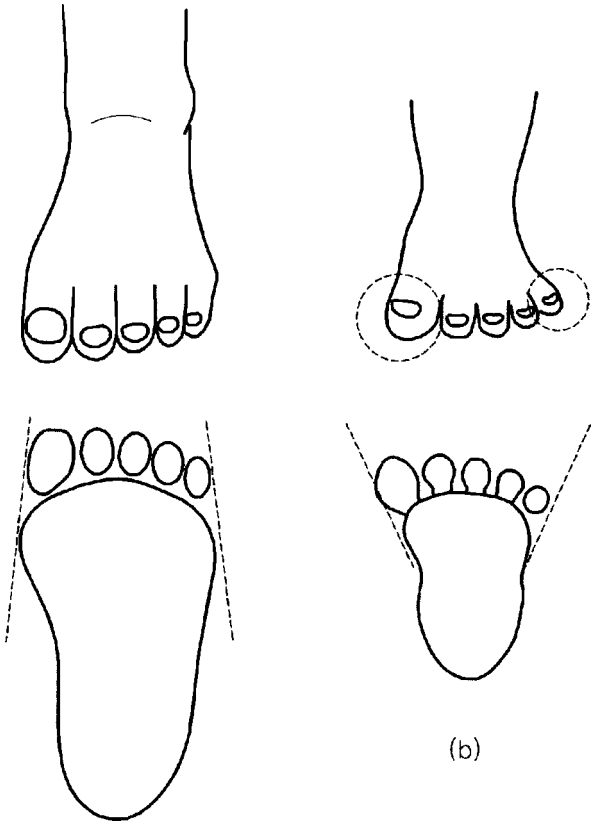
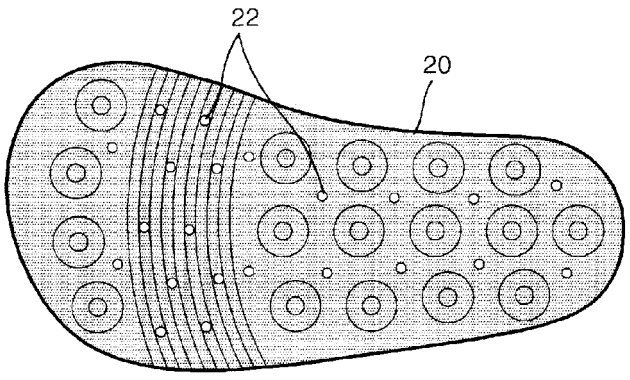


(b)

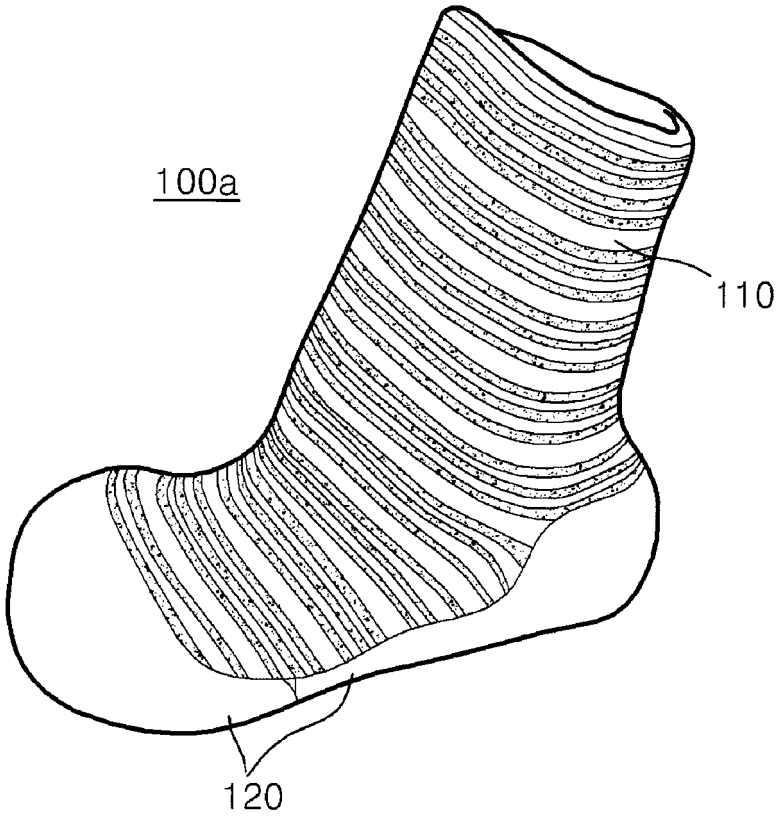
[Fig. 7]



[Fig. 8]



[Fig. 9]



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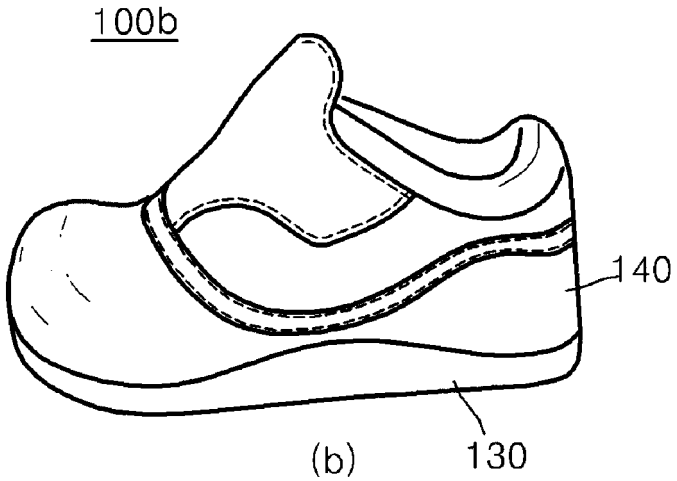

(b)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2010/009410

A. CLASSIFICATION OF SUBJECT MATTER

A43B 3/30(2006.01)i, A43D 3/02(2006.01)i, A43B 7/06(2006.01)i

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 3/30; A43B 7/00; A43B 7/08; A43B 7/20; A43B 7/38; A43B 13/14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean Utility models and applications for Utility models: IPC as above
Japanese Utility models and applications for Utility models: IPC as above

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

eKOMPASS (KIPO internal) & Keywords: toe*, space, baby, infant

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2003-061702 A (PIGEON CO., LTD.) 04 March 2003 See abstract, figures 1-15, paragraphs 0005-0043 and claims 1,3.	1-8
A	KR 10-0636399 B1 (BAEK, SANG GON) 18 October 2006 See abstract, figures 1-4, pages 2-3 and claims 1-3.	1-8
A	JP 2001-252102 A (MARUBENI FOOTWEAR INC.) 18 September 2001 See abstract, figures 1-9, paragraphs 0005-0043 and figures 1,3.	1-8
A	JP 2005-304700 A (APRICA KASSAI INC.) 04 November 2005 See figure 1, page 3 and claim 1.	1-8
A	JP 61-202207 U (SHIMAZAKI, D.) 18 December 1986 See figure 14 and the claims of the utility model registration.	1-8

☐ 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	Date of mailing of the international search report
23 SEPTEMBER 2011 (23.09.2011)	**10 OCTOBER 2011 (10.10.2011)**
Name and mailing address of the ISA/KR Korean Intellectual Property Office Government Complex-Daejeon, 139 Seonsa-ro, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/KR2010/009410

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KR 10-0636399 B1	18.10.2006	CN 101394762 A	25.03.2009
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JP 2005-304700 A	04.11.2005	NONE	
JP 61-202207 U	18.12.1986	NONE	

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REFERENCES CITED IN THE DESCRIPTION

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- KR 1020060057303 **[0003]**
- KR 1020040076585 **[0003]**
- KR 200281420 **[0003]**
- KR 200447718 **[0003]**