(19) Europäisches Patentamt
European Patent Office
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(11) **EP 3 701 826 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
02.09.2020 Bulletin 2020/36

(51) Int Cl.:
A43B 23/02 *(2006.01)* ***A43B 23/07*** *(2006.01)*
A43B 9/02 *(2006.01)*

(21) Application number: **20157457.1**

(22) Date of filing: **14.02.2020**

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

(30) Priority: **27.02.2019 IT 201900002865**

(71) Applicant: **Santoni Societa' Per Azioni**
20121 Milano (IT)

(72) Inventor: **SANTONI, Giuseppe**
62014 Corridonia (MC) (IT)

(74) Representative: **Baldi, Claudio**
Ing. Claudio Baldi S.r.l.
Viale Cavallotti, 13
60035 Jesi (Ancona) (IT)

(54) MANUFACTURING PROCESS OF PADDED UPPERS FOR WINTER SHOES AND PADDED UPPER OBTAINED ACCORDING TO SAID PROCESS

(57) A manufacturing process of winter shoes, wherein the upper of said shoe is internally covered with a layer of thermo-insulation fabric suitable for entirely surrounding the foot of the user, as well as capable of being slightly detached from the internal surface of the upper, in such a way to favor the formation of an intermediate empty space suitable for generating an additional thermal insulation for the foot.

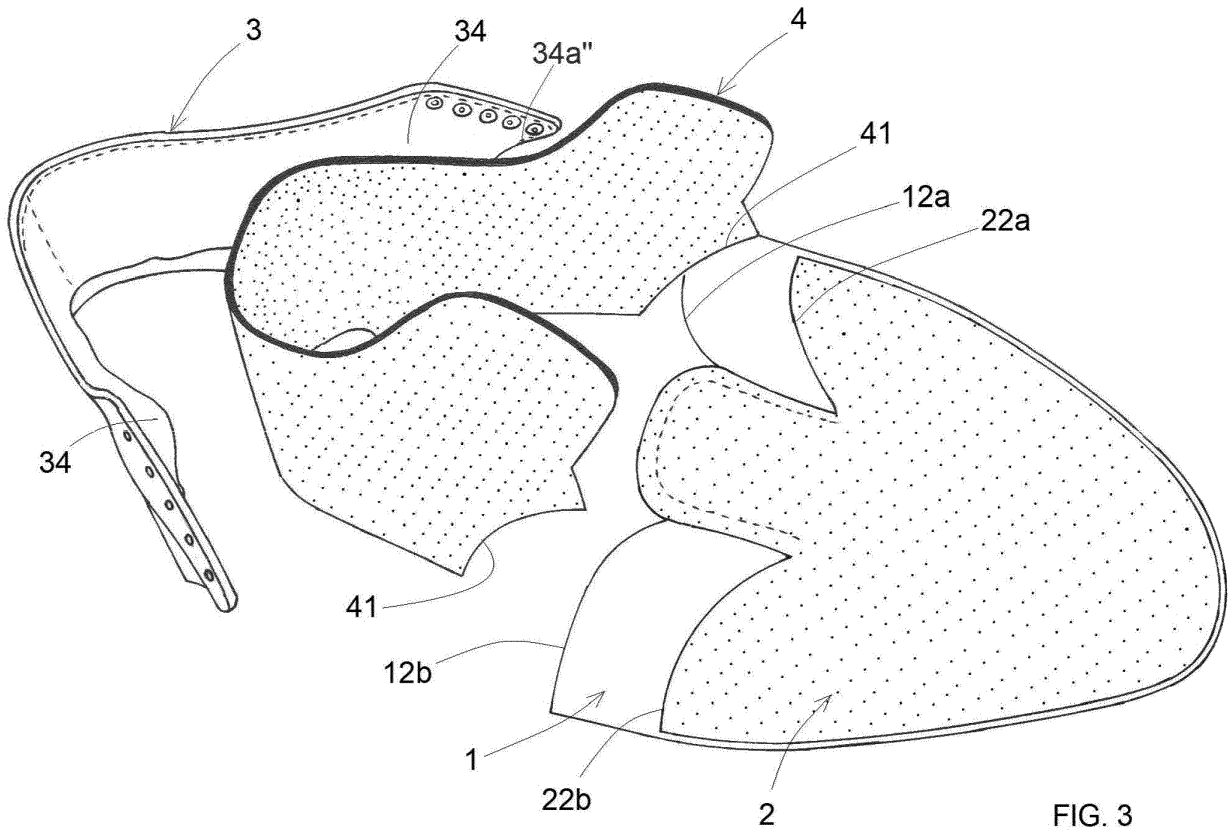

FIG. 3

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Description

[0001] The present patent application for industrial invention relates to a manufacturing process of padded uppers for winter shoes and to the padded upper obtained according to said process.

[0002] The purpose of the present invention is to obtain shoes that are suitable for the winter season and are capable of protecting the feet of the user from the cold weather that is typical of such season.

[0003] It must be noted that shoes suitable for protecting the feet of the users from low temperatures have been known on the market for a long time.

[0004] More precisely, traditional shoes are provided with uppers characterized in that a padded covering layer is sewn or glued on the internal surface of the upper, said layer being made of a material that is potentially provided with thermo-insulation properties, such as for example felt.

[0005] According to the expectations of shoe manufacturers, similar internal covering layers should keep the feet of the user warm in spite of the low external temperature.

[0006] So far it has been considered that the provision of such an internal covering layer can prevent, or at least reduce, the natural thermal exchange according to which the natural warmth of the foot tends to dissipate towards the exterior of the shoe through the walls of the upper, in view of the lower temperature of the surrounding space.

[0007] However, all users of traditional padded shoes are aware of the fact that the shoes of the prior art can only partially protect the user against the cold weather and are not capable of effectively guaranteeing foot comfort in the long run.

[0008] A careful examination of a similar drawback has ascertained that such a drawback depends on the fact that in the winter shoes of the prior art said thermo-insulation covering layer is directly joined to the internal surface of the edges of the upper.

[0009] In fact, the thermo-insulation covering layer is practically directly exposed to the cold temperature in view of the fact that the low thickness of the upper does not guarantee any protection against the cold climate conditions.

[0010] The winter shoes of the invention have been devised in order to overcome the limits of such a consolidated technology. The principal peculiarity of the winter shoes of the invention consists in the fact that the thermo-insulation covering layer is not directly joined to the internal side of the upper and is independent from the upper.

[0011] In view of the above, a thin empty space is provided between the internal surface of the upper and the covering layer, and is inevitably filled with a "veil" of air that is capable of ensuring a good thermo-insulation action for the feet of the user who is wearing the new winter shoes of the invention.

[0012] In fact, the new manufacturing process of the invention has been devised in order to give a practical, industrially and operatively feasible implementation to such an inventive idea.

[0013] According to said manufacturing process, the two leather parts (front portion and back portion) of the upper are made separately.

[0014] Successively, layers of thermo-insulation material are made for each one of said two leather parts; it being provided that each one of said covering layers is fitted on the interior of the portion of upper only in one seam point, without obtaining the complete adhesion between said covering layers and the corresponding portion of upper.

[0015] Then the upper is finally assembled according to an innovative principle that, unlike the prior art, provides for two different separate joining operations of the parts.

[0016] In such a circumstance, in addition to traditionally joining the leather front portion with the leather back portion of the upper, it is necessary to join said covering layers of thermal-insulation fabric.

[0017] Just like the joining of said two leather portions gives continuity to the external structure of the upper, the joining of the covering layers gives continuity to said structure made of thermal-insulation fabric that is provided in the interior of the upper.

[0018] In such a condition, the structure of thermal-insulation fabric is fixed inside the upper only in two points (one point at the height of the front portion and the other point at the height of the back portion of the upper), originating a sort of "shoe in the shoe".

[0019] The principal purpose of the present invention has been achieved by means of the manufacturing process claimed in claim 1.

[0020] Additional purposes of the invention have been achieved by means of the additional technical-functional solutions claimed in the claims that depend on claim 1.

[0021] For the sake of clarity, the description of the invention continues with reference to the attached drawings, which have a merely illustrative, not limiting value, wherein:

- Fig. 1 is a plan view of the external surface of the vamp of the upper to be obtained;
- Fig. 2 is a plan view of the internal surface of the vamp of Fig. 1;
- Fig. 3 is an exploded axonometric view of the three parts of the upper to be obtained before being assembled;
- Fig. 4 is a plan view of the external surface of the back portion of the upper to be obtained;
- Fig. 5 is a plan view of the internal surface of the back portion of Fig. 4;
- Fig. 6 is a plan view of the surface of the thermal-insulation covering layer of the back portion of the upper to be obtained;
- Figs. 7 and 8 are axonometric views of the external

surface of the upper after assembly;

- Fig. 9 is an axonometric view of the internal surface of the upper;
- Fig. 10 is an enlarged view of a detail of Fig. 9.

[0022] Firstly, it must pointed out again that the manufacturing process according to the invention relates to the manufacturing of a padded upper for winter shoes; it being evident that said upper needs to be normally joined with a sole according to a traditional process that does not fall within the manufacturing process of the invention.

[0023] Moreover, it must be noted that the new padded upper obtained with said process is of the type that is traditionally formed by joining a vamp, which is the front portion of the upper, and a back portion of the upper, usually formed of an opposite pair of quarters.

[0024] More precisely, the vamp is the portion of upper that is suitable for embracing the front of the foot, whereas the back portion is the portion of upper that is suitable for embracing the back of the foot on both sides, basically in the area comprised between heel and malleoli.

[0025] With reference to the aforementioned figures, the process of the invention provides for manufacturing the following parts suitable for being assembled in order to obtain the upper (T).

[0026] With reference to Fig. 1, the first one of said parts consists in a vamp (1) made of artificial or natural leather that is basically provided with a V-shape and is defined by a tapered rounded front edge (10), a pair of diverging longitudinal borders (11a, 11b) and one back transverse border (12), wherein two deep rectilinear cuts (13a, 13b) are obtained in substantially orthogonal position to said border (12), generating the formation of a typical central tongue (14) and two symmetrical lateral edges (12a, 12b), each of them being joined with the corresponding cut (13a, 13b) by means of a rounded profile (12a', 12b') with substantially transverse direction, directed towards the longitudinal border (11a, 11b).

[0027] With reference to Fig. 2, said vamp (1) is internally lined with a covering layer (2) of thermal-insulation material (felt or the like) and/or padded material, which is provided with a substantially V-shaped profile and is defined by a tapered rounded front border (20) and by two diverging longitudinal borders (21a, 21b) that are joined on top with substantially transverse rounded profiles (22a, 22b) that converge towards a central tongue (24).

[0028] The comparative observation of Figs. 1 and 2 shows that the dimensions of said vamp (1) and internal covering layer (2) are such that:

- the rounded front border (20) of the covering layer (2) is suitable for being exactly disposed against the rounded front edge (10) of the vamp (1)
- the diverging longitudinal borders (21a, 21b) of the covering layer (2) are suitable for being exactly disposed against the diverging longitudinal borders (11a, 11b) of the vamp (1), although they are suitably provided with a lower length, such that the covering layer (2) is not provided on said two lateral profiles (12a, 12b) of the vamp (1) at the height of said tongue (14) in intermediate position
- the tongue (24) of the covering layer (2) is suitable for being exactly disposed against said tongue (14) of the vamp (1), although it is provided with a slightly larger surface, such that an edge of said tongue (24) of the covering layer (2) slightly protrudes all around the tongue (14) of the vamp (1).

[0029] Moreover, it must be noted that said covering layer (2) is joined to the vamp (1) by means of one seam line (L1) that is basically shaped like an overturned U and is obtained on the perimeter of said tongues (14, 24) in overlapped position.

[0030] With reference to Fig. 3, said vamp (1) is suitable for being joined to the back portion (3) of the upper (T), after joining said back portion (3) to a covering layer (4) of thermal insulation material.

[0031] With reference to Figs. 4 and 5, said back portion (3) of the upper (T) is formed of two identical quarters (30) that are sewn in symmetrical position with the interposition of a central counter (31); wherein each of said quarters (30) is frontally provided with a flap (32) provided with holes (F) for the shoe laces.

[0032] Such a back portion (3) of the upper (T) is suitable for having a substantially elliptical profile during use, being suitable for surrounding said back portion of the foot and defining the opening through which the foot is inserted in the upper (T), as shown in Fig. 7.

[0033] In the latter condition, said two flaps (32) are disposed side by side, in a substantially longitudinal position with respect to the vamp (1), at the height of the neck of the foot.

[0034] With reference to Fig. 4, said back portion (3) of the upper (T) is defined by an upper perimeter border (3a), which defines the opening of the foot, and by a lower perimeter border (3b), which is suitable for being the point where the upper (T) and the sole are joined.

[0035] Moreover, each of said flaps (32) is joined with the corresponding end of said lower border (3b) of the back portion (3) of the upper (T) by means of a deep rounded cut (33).

[0036] With reference to Fig. 5, said back portion (3) is internally provided, for its entire length, with a leather lining (34) that is substantially shaped like a ribbon; it being provided that said lining (34) and said back portion (3) are firmly joined by means of a continuous seam line (L2) that surrounds said two flaps (32) of said back portion (3) and extends for the entire length of said upper border (3a).

[0037] The principal peculiarity of said lining (34) consists in the fact that it is provided with two ending edges (34a) with substantially triangular shape, which partially protrude through said rounded cuts (33) of the back portion (3) of the upper (T).

[0038] As a matter of fact, each of said substantially

triangular edges (34a) of the lining (34) is defined by a horizontal border (34a') that lays at a higher height than the one occupied by said lower horizontal border (3b) of the back portion (3) of the upper (T), and by a rounded border (34a") with substantially vertical direction.

[0039] With reference to Fig. 6, a similar back portion (3) of the upper (T) is suitable for being joined with a covering layer (4) made of a thermo-insulation fabric, and is also suitable for being disposed in the same substantially elliptical position as the back portion (3) of the upper (T) during use, as shown in the aforementioned Figs. 3 and 7.

[0040] As shown in Fig. 6, said covering layer (4) is basically provided with a ribbon-like structure, which is defined by a lower horizontal border (4b) and by an upper horizontal border (4a) that are provided at the ends with flaps (42) that are identical to the flaps (32) of the back portion (3).

[0041] In each of its lateral ends, said covering layer (4) is provided, under the flap (42), with a rounded border (41) with substantially vertical direction that is joined with the longitudinal end of said lower horizontal border (4b).

[0042] In particular, said rounded border (41) is shaped in such a way to be disposed, when the upper (T) is used, in a position that is exactly behind said rounded border (34a") with substantial vertical direction, which belongs to the end (34a) of said lining (34) of the back portion (3).

[0043] This description continues with an illustration of the modes provided by the process of the invention during the assembly of the parts of the upper (T).

[0044] Reference is made to Figs. 7 to 10.

[0045] With reference to said Figures, the covering layer (4) is disposed in the back portion (3) of the upper (T) and is fixed in said position in only one point by means of a short horizontal seam line (L3) at the top of said central counter (31).

[0046] Successively, the back portion (3) of the upper (T) is joined with the vamp (1) and the covering layer (4) of the back portion (3) is joined with the covering layer (2) of the vamp (1).

[0047] With reference to Figs. 7 and 8, the two lateral ends (12a, 12b) of the vamp (1) are inserted in said back portion (3) of the upper (T) in such a way to be exactly disposed inside said rounded cuts (33) of the upper (T) and firmly fixed in such a position by means of seam lines (L4) that follow the profile of said cuts (33).

[0048] In such a position, each end (12a, 12b) of the vamp (1) - and, more precisely, each one of the rounded profiles (12a', 12b') - is disposed in intermediate position between the quarter (30) of the back portion (3) of the upper (T) and the lining (34) of the quarter (30), as shown in Fig. 9.

[0049] The two symmetric transverse profiles (22a, 22b) of the covering layer (2) of the vamp (1) are inserted in said covering layer (4) of the back portion (3) of the upper (T), in such a way to be perfectly aligned with said lateral rounded edges (41) of said covering layer (4) and firmly fixed in such a position by means of seam lines (L5) that simultaneously join said rounded borders (34a") of the two edges (34a) of the lining (34).

[0050] It can be otherwise said that, because of the provision of each one of said seam lines (L5), which substantially follows the profile of said rounded border (34a") of the lining (34), the covering layer (4) of the back portion (3) of the upper (T) is tightened between the covering layer (2) of the vamp (1) and the lining (34) of said back portion (3).

[0051] In order to firmly join the parts of the upper (T), as shown in Fig. 8, two additional seam lines (L6) are provided in the two flaps (32) of the back portion (3) of the upper (T) and on the two sides of the tongue (24) of the covering layer (2) of the vamp (1), as shown in Fig. 9.

[0052] In fact, each one of said seam lines (L6) joins the entire internal lining of the upper (T) with the leather structure of the upper (T), substantially at the height of each one of said points where the covering layer (2) of the vamp (1) is overlapped with the covering layer (4) of the back portion (3) of the upper (T).

[0053] As shown in Fig. 7, the two seam lines (L6) remain visible also from the outside of the upper (T), substantially at the base of each one of said flaps (32) of the back portion (3).

Claims

1. Manufacturing process of a padded upper for winter shoes, comprising the following operating steps:

   a) provision of a vamp (1) of the upper (T), wherein said vamp (1) comprises a front edge (10), two longitudinal borders (11a, 11b) and one back transverse border (12) with two ends provided with symmetrical profiles (12a', 12b'); said vamp (1) comprising a central tongue (14) in intermediate position between the two symmetrical profiles (12a', 12b');

   b) laying of a internal covering layer (2) of thermal-insulation material on the inside of said vamp (1), which comprises a front border (20), two longitudinal borders (21a, 21b) and one back transverse border with two ends provided with symmetrical rounded profiles (22a, 22b); wherein said covering layer (2) of said vamp (19 is provided with a central tongue (24) in intermediate position between said two lateral profiles (22b, 22b), said central tongue (24) being substantially identical to the central tongue (14) of the vamp (1); wherein said covering layer (2) is joined to said vamp (1) by means of a seam line (L1) obtained in the two central tongues (14, 24) after overlapping said two central tongues (14, 24);

   c) provision of a back portion (3) of the upper (T), wherein said back portion (3) is formed of two symmetrical quarters (30) joined in a central

counter (31) and frontally ending with symmetrical ends (32);
d) laying of a covering layer of thermal-insulation fabric (4) on the inside of said back portion (3) of the upper (T), said covering layer (4) being frontally provided with two symmetrical ends (42); wherein said covering layer (4) is joined to said back portion (3) by means of only one horizontal seam line (L3) made in the central counter (31) of said back portion (30);
e) joining of the symmetrical lateral profiles (12a', 12b') of the vamp (1) in said front ends (32) of the back portion (3) of the upper (T) by means of seam lines (L4);
f) joining of the lateral profiles (22a, 22b) of the covering layer (2) of the vamp (1) at the front ends (42) of the covering layer (4) of the back portion (3) by means of seam lines (L5).

2. The process of claim 1, wherein:

- said back portion (3) extends between an upper longitudinal border (3a) and a lower longitudinal border (3b)
- said front ends of said back portion (3) consist in flaps (32), each of them being joined with the corresponding end of said lower longitudinal border (3b) by means of a deep rounded cut (33)
- said covering layer (4) of said back portion (3) extends between an upper longitudinal border (4a) and a lower longitudinal border (4b)
- said front ends of said covering layer (4) consist in flaps (42) that are identical to said flaps (32) of said back portion (3); wherein each of said flaps (42) is joined with the longitudinal end of said lower longitudinal border (4b) by means of a rounded border (41) with substantially vertical direction,
- said lateral profiles (12a', 12b') of said vamp (1) are inserted in said two cuts (33) of said back portion (3), in such a way that said seam lines (L4) that join the vamp (1) with the back portion (3) follow the profile of said cuts (33)
- said two lateral profiles (22a, 22b) of the covering layer (2) of the vamp (1) are inserted in said rounded borders (41) of the covering layer (4) of the back portion (3), in such a way that the seam lines (L5) that join said covering layers (2, 4) follow the profile of said rounded borders (41).

3. The process of claim 1 or 2, wherein:

- said back portion (3) of the upper (T) is internally provided with a corresponding lining (34) that is defined on each of its two free ends by a rounded border (34a") with substantially vertical direction, as well as provided with a profile identical to the one of said rounded borders (41) of said covering layer (4) of the back portion (3)
- said rounded borders (34a") of said lining (34) are exactly disposed on the outside of said rounded borders (41) of said covering layer (4) of the back portion (3), in such a way that said seam lines (L5) that join the covering layers (2, 4) of the vamp (1) and the back portion (3) firmly join the ends of said lining (34) to the covering layer (4) of said back portion (3).

4. The process of one of the preceding claims, wherein the flaps (32) of the back portion (3) of the upper (T) are provided with holes (F) for shoe laces.

5. The process of one of the preceding claims, wherein said covering layer (2) of the vamp (1) is joined to said leather back portion (3) of the upper (T).

6. The process of claim 5, wherein the covering layer (2) of the vamp (1) is joined to said leather back portion (3) by means of two seam lines (L6) that join said two first flaps (32) of the back portion (3) in two points of the covering layer (2) of the vamp (1).

7. Padded upper for winter shoes obtained according to the process described in one or more of the preceding claims.

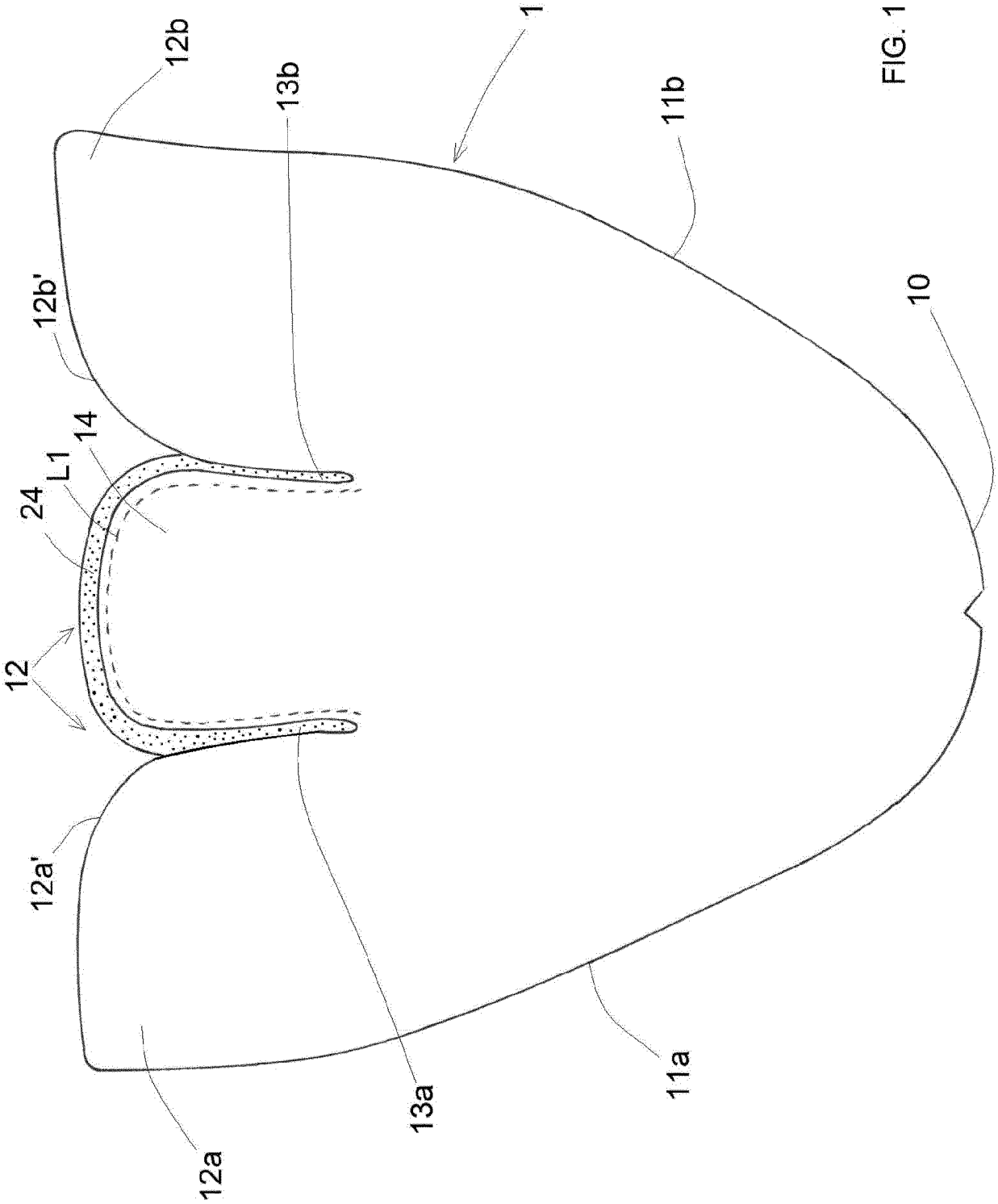

FIG. 1

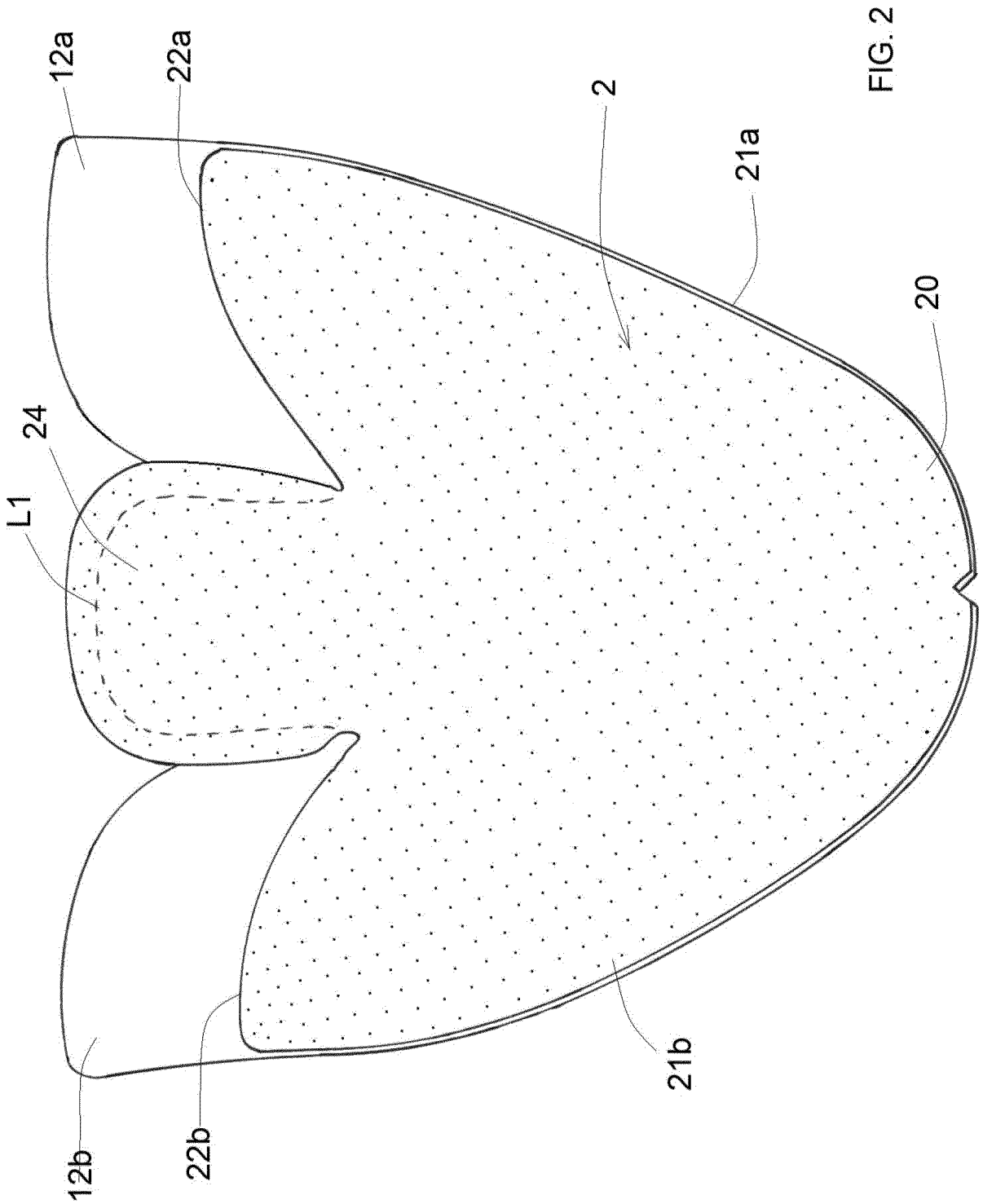

FIG. 2

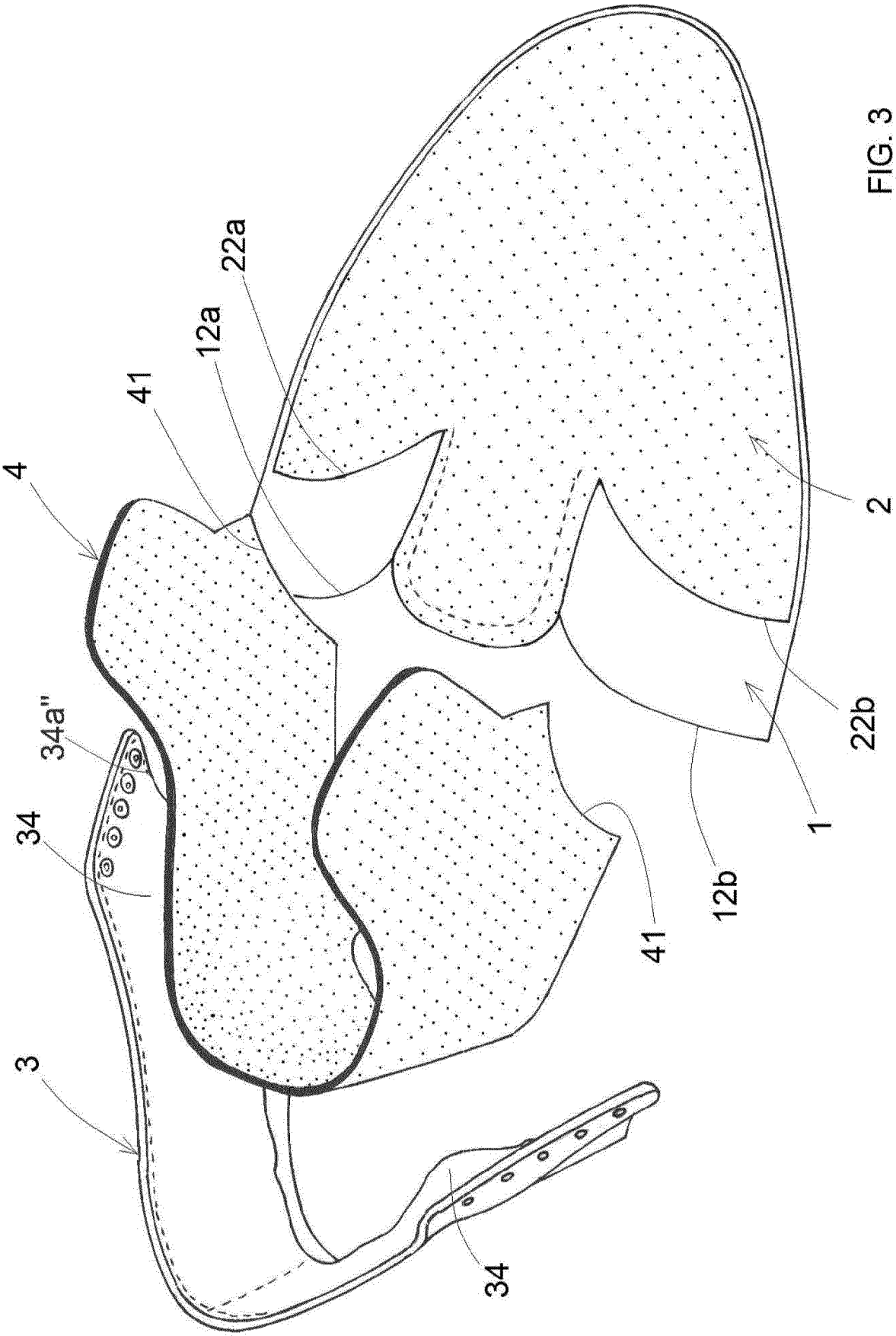

FIG. 3

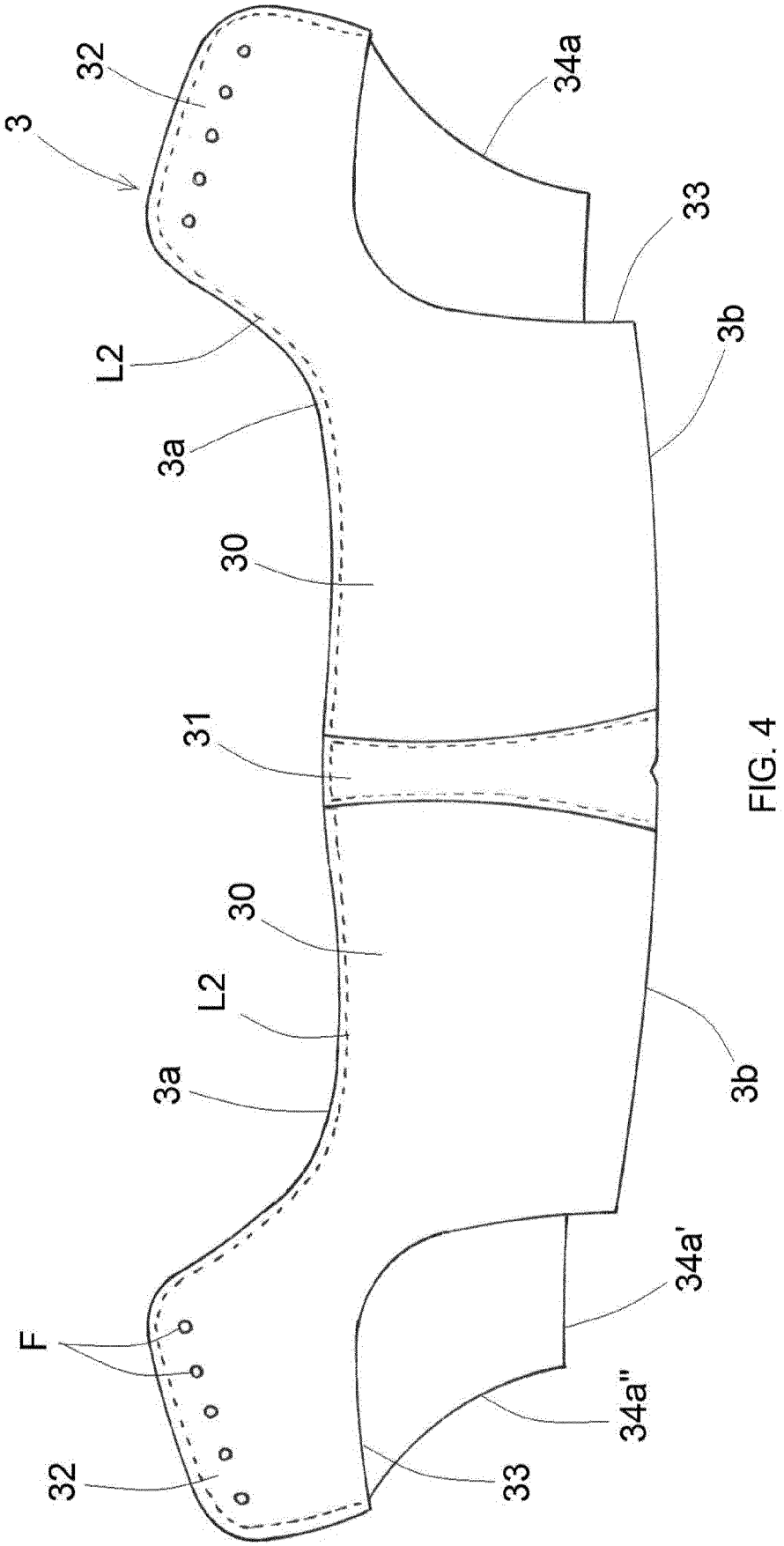

FIG. 4

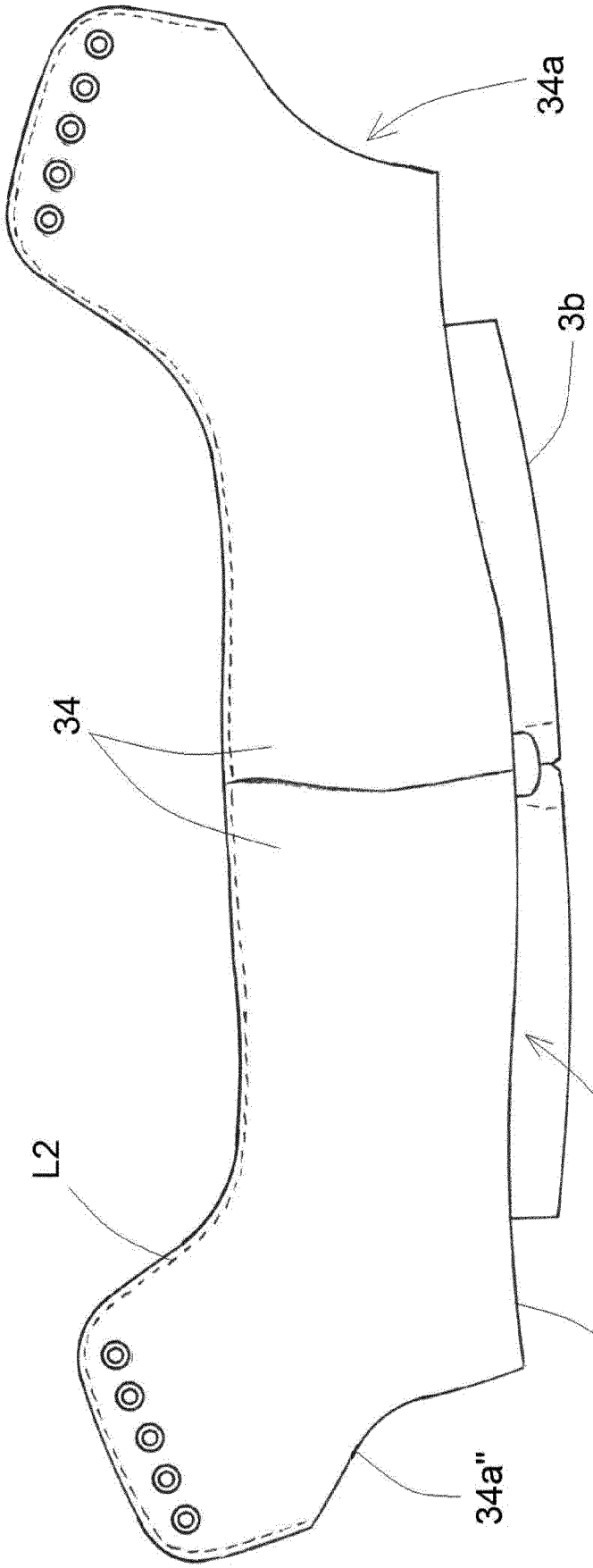

FIG. 5

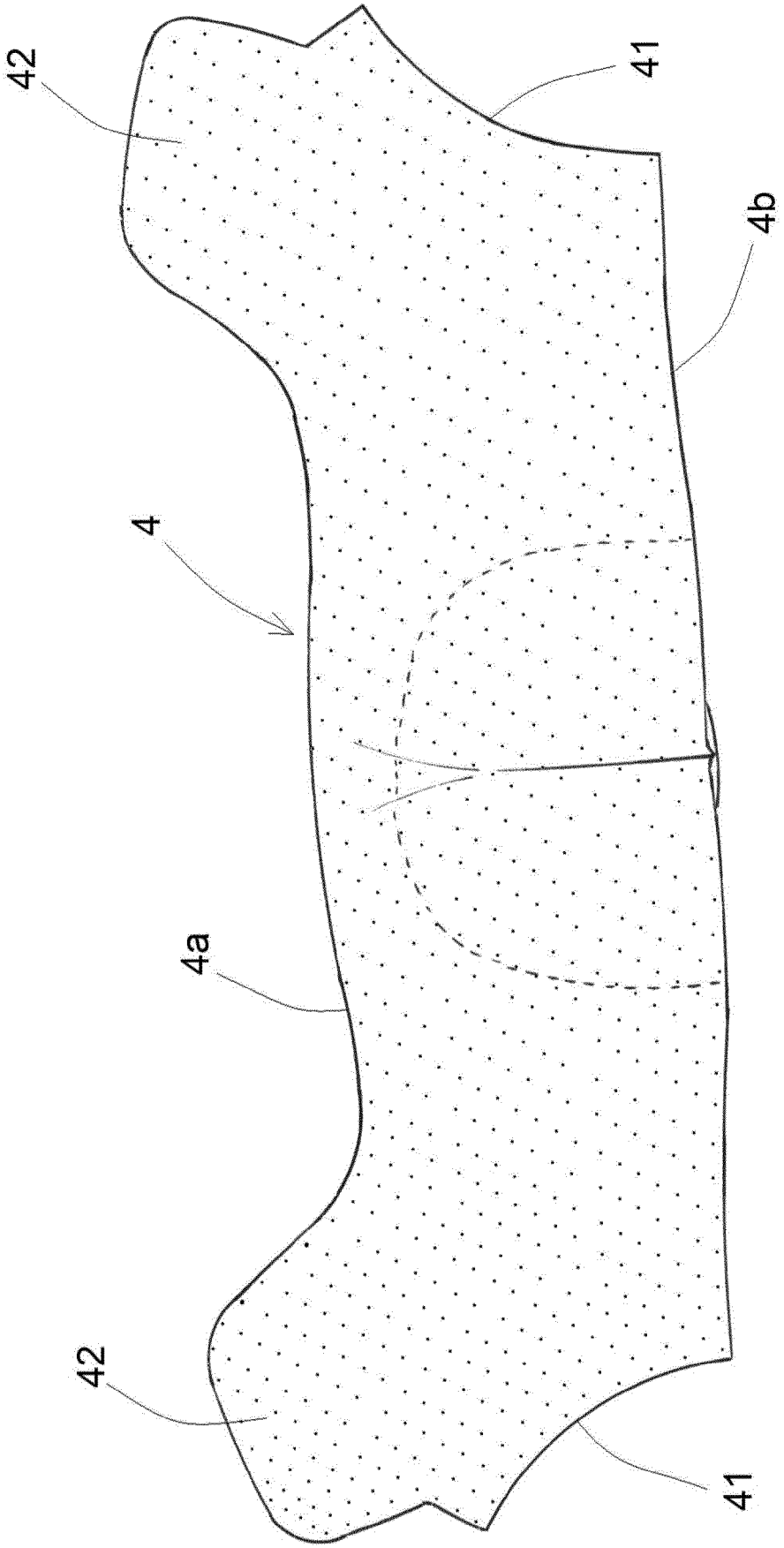

FIG. 6

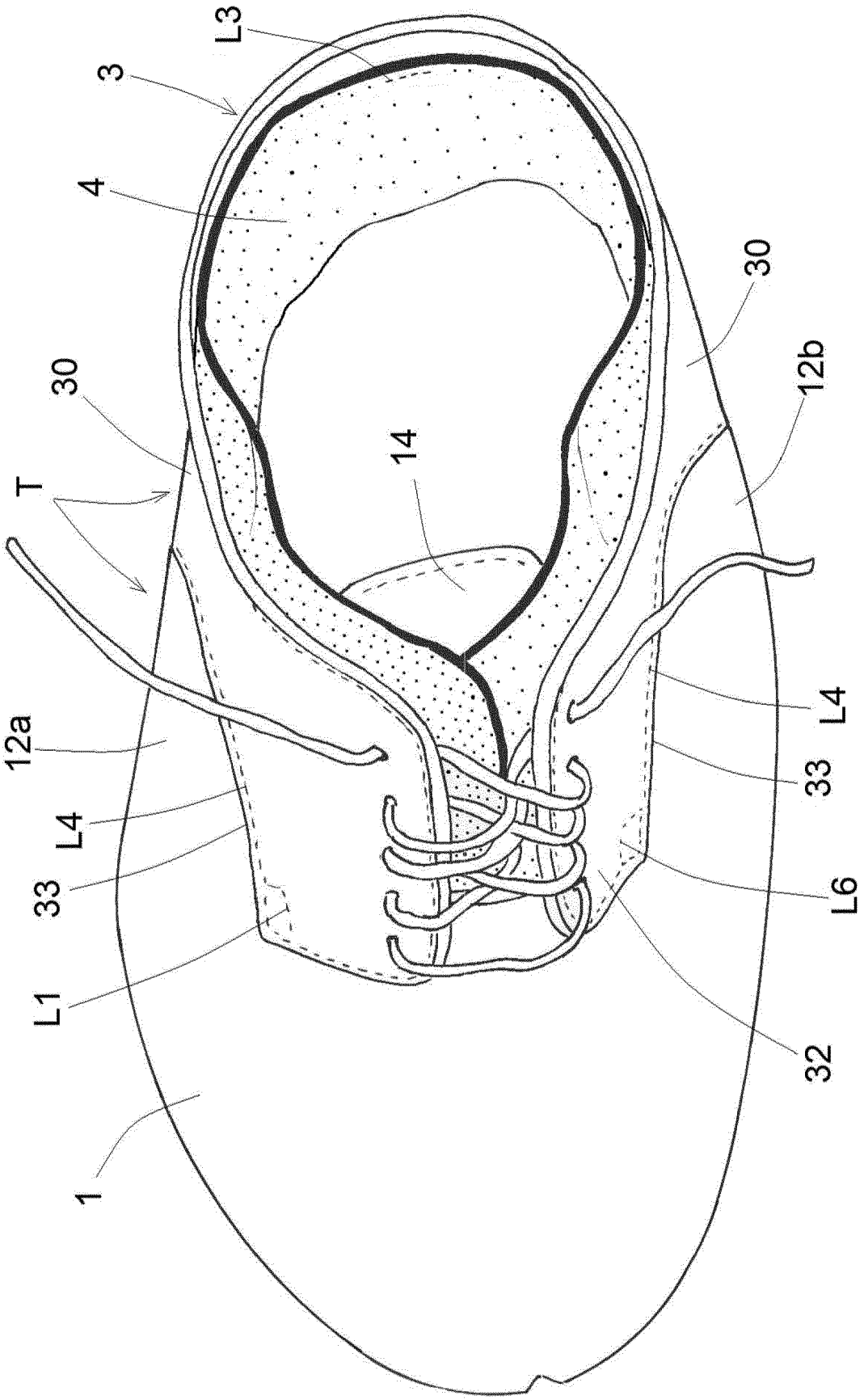

FIG. 7

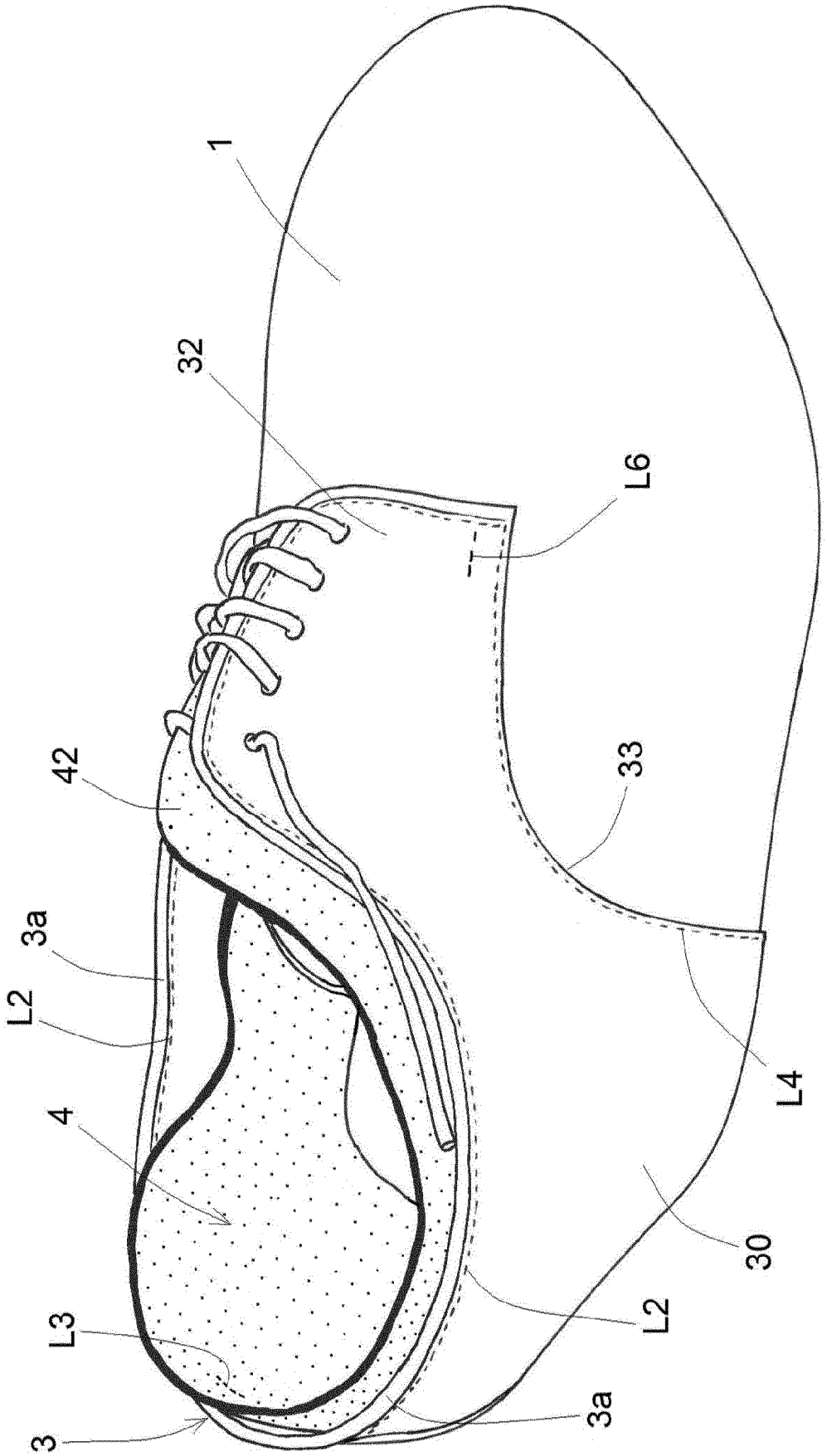

FIG. 8

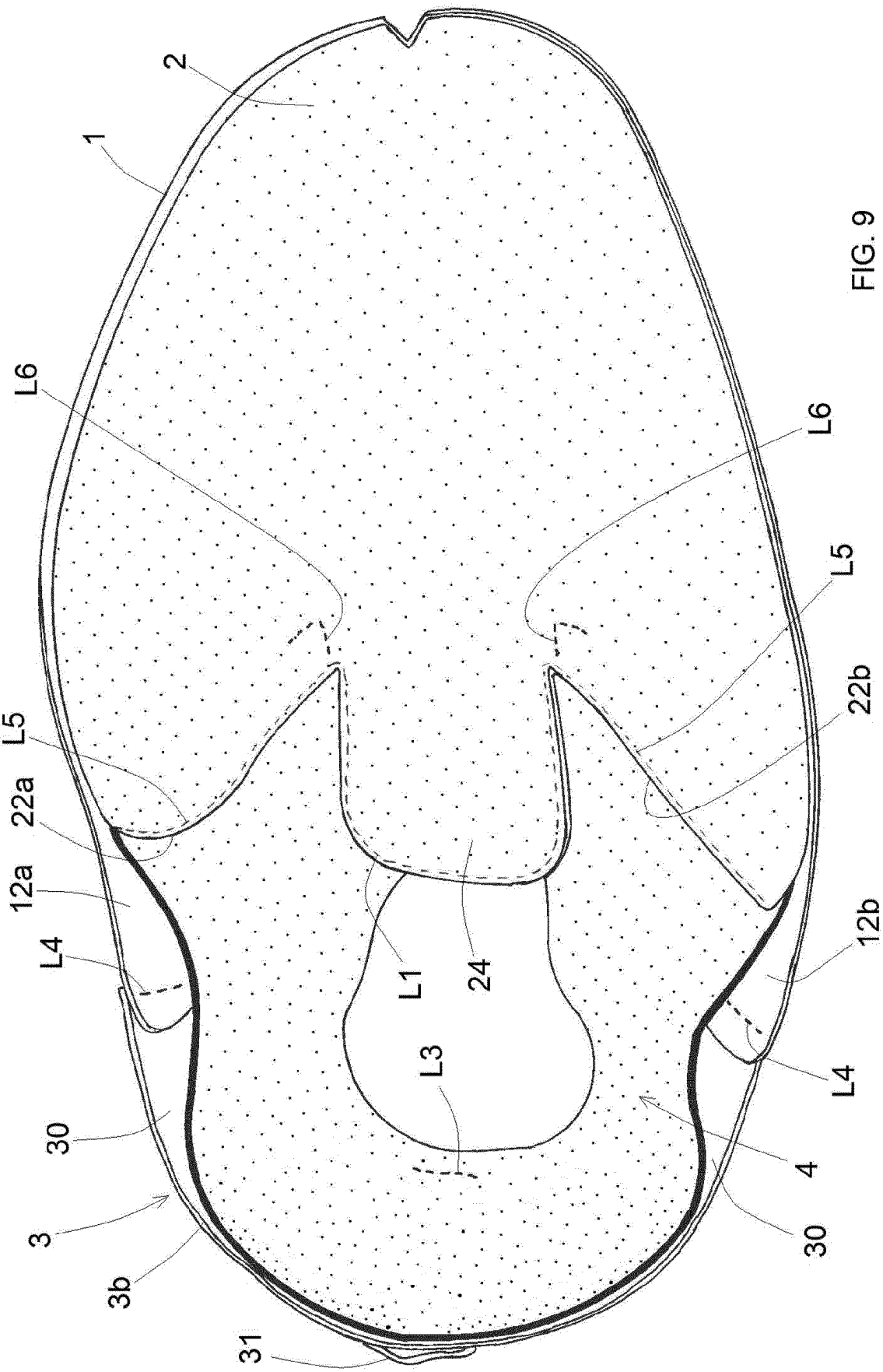

FIG. 9

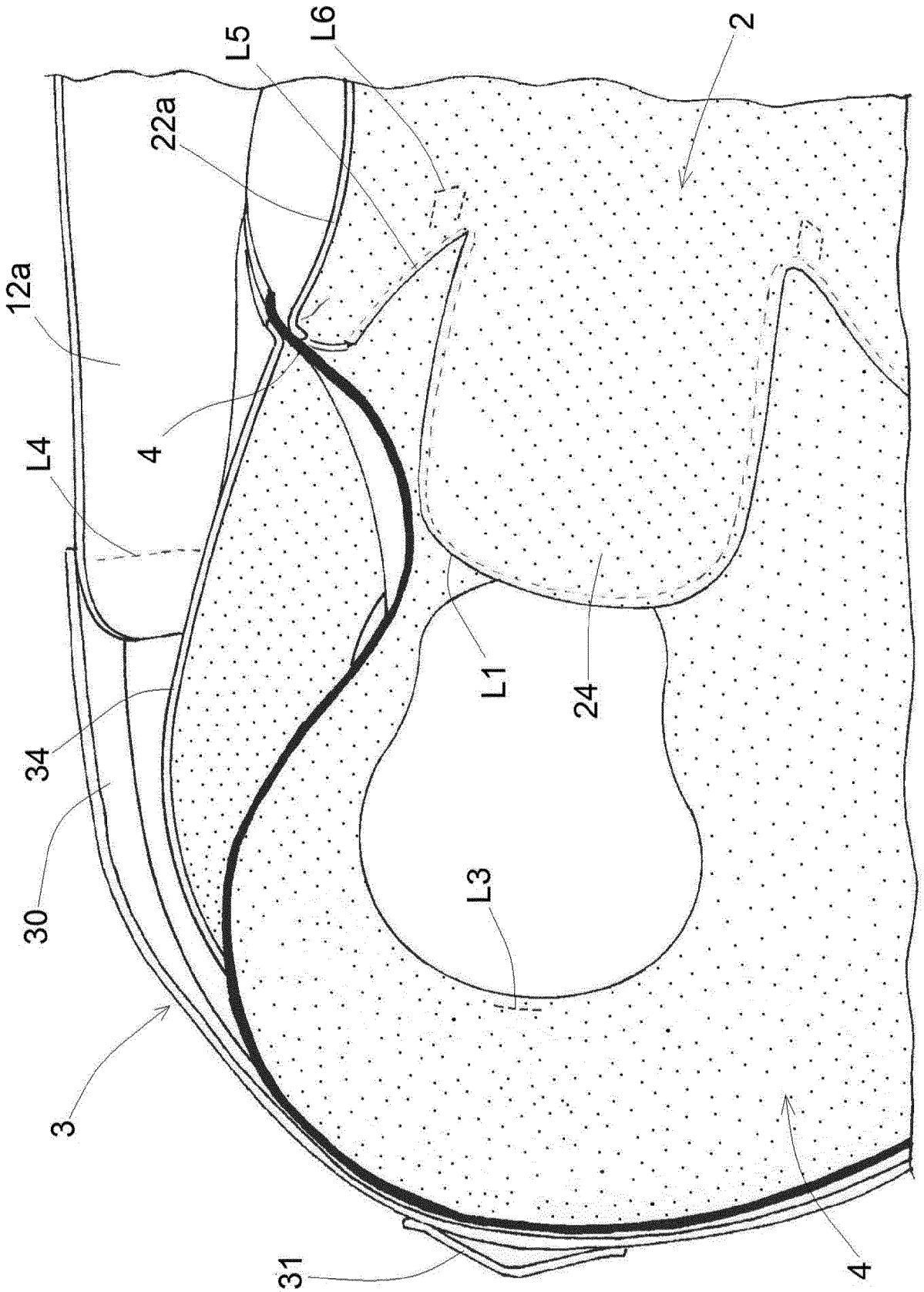

FIG. 10

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EUROPEAN SEARCH REPORT

Application Number
EP 20 15 7457

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 1 835 967 A (REED HARVEY D ET AL) 8 December 1931 (1931-12-08) * the whole document *	1-7	INV. A43B23/02 A43B23/07 A43B9/02
A	US 1 922 051 A (MORRIS LAPIDUS) 15 August 1933 (1933-08-15) * the whole document *	1-7	
A	US 1 873 222 A (SHAW ESTLE H) 23 August 1932 (1932-08-23) * the whole document *	1-7	
A	US 2010/319221 A1 (MCCLASKIE THOMAS E [US]) 23 December 2010 (2010-12-23) * paragraphs [0039] - [0043]; figures 6,7 *	1-7	

TECHNICAL FIELDS SEARCHED (IPC)

A43B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	9 July 2020	Espeel, Els

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 20 15 7457

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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09-07-2020

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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US 1922051 A	15-08-1933	NONE	
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82