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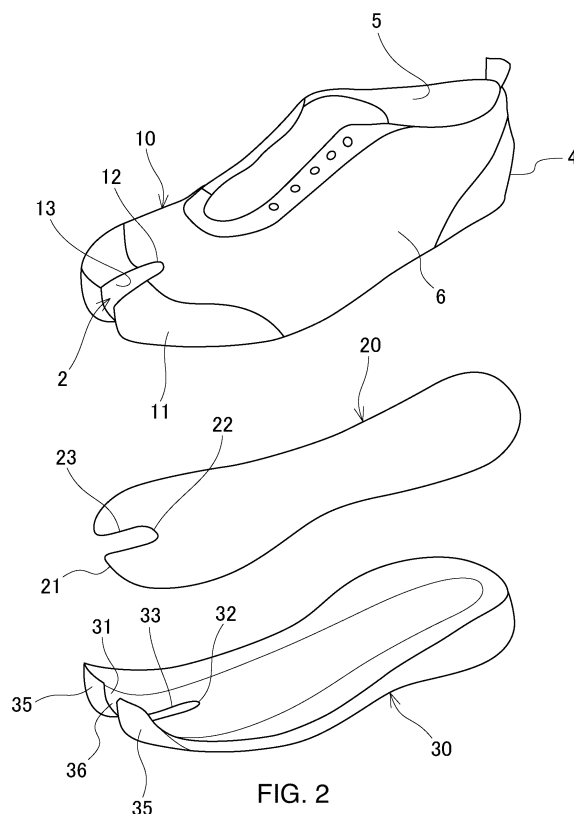
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(54) **SPLIT-TOE SHOE**

(57) Provided is a split-toe shoe in which the flexibility of a toe portion of the split-toe shoe is ensured so that the toes can freely move, and water permeation into the shoe from a joining portion of members is suppressed to prevent discomfort from occurring. The split-toe shoe has a partition between the first and second toes of the foot. The partition includes: a separating outer cover portion that separates the first and second toes of the foot by entering, toward the basal sides of the first and second toes of the foot, from an outer cover tip portion of a shoe outer cover portion that forms the exterior of the split-toe shoe and covers the foot; an insole cutout portion that is formed by entering, toward the basal sides of the first and second toes of the foot, from an insole tip portion of an insole portion disposed below the outer cover tip portion; and a shoe sole cutout portion that is formed by entering, toward the basal sides of the first and second toes of the foot, from a shoe sole tip portion of a shoe sole portion disposed below the insole portion. The outer cover edge of the separating outer cover portion enters from above the insole cutout portion to adhere to the rear surface side of the insole portion around the insole cutout portion, and the shoe sole portion adheres to the outer cover edge and adheres to the insole portion. Selected drawing: FIG. 2

drawing: FIG. 2



Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a split-toe shoe. More specifically, the present invention relates to a split-toe shoe that inhibits water penetration through a partition of a split-toe.

2. Description of Related Art

[0002] The split-toe shoe is mainly popularized by names such as tabi shoes. One of its characteristics is that it applies the function of tabi socks to shoes. The tabi socks have the advantage in that the first toe (foot thumb) and second toe (other toes) of the foot are capable of moving independently. For example, when a person stands or walks on uneven ground, the first toe and the other toes move separately, improving the grip on the ground by the toes. Accordingly, the split-toe shoes (tabi shoes) are a good example of shoes that require complex toe movements, such as for working and sports (see patent document 1, for example).

[0003] For example, in the case of the split-toe shoe represented in patent document 1, a member is inserted at predetermined intervals into two halves of the interior member of the shoe, formed by dividing its tip into the two halves thereby separating the first and second toes of the foot, to separate the first and second toes of the foot on left and right sides. The exterior of the shoe, a sole, for example, is then attached to complete the process. As described above, the first toe (foot thumb) is independently movable in the split-toe shoe.

[0004] However, the split-toe shoe represented in patent document 1 has a more complex toe shape than ordinary shoes do, resulting in a greater number of members and more complicated processing. Further, since the toe is split into two halves, the bonding portions of the outer cover, insole, and sole, for example, which configure the shoe, are easily vulnerable. In particular, in the split-toe shoes for working, sports, and other activities, increasing the rigidity of the toe portion of the shoe, which is divided into two halves, may limit the free movement of the toes of the foot. In contrast, forming the toe portion of the shoe, which is divided into two halves, too flexible may reduce the strength of the shoe, and water may penetrate into the shoe through the joint portion between the members, causing discomfort.

Prior Art Documents

Patent Documents

[0005] Patent Document 1: Japanese Laid-Open Patent Publication No. 2015-167670

SUMMARY OF THE INVENTION

Problems to be Solved by the Invention

[0006] The present invention has been made in view of the above described points, and provides a split-toe shoe that ensures the flexibility of the toe portion of the shoe, which is divided into two halves, to allow free movement of the toes of the foot, and also suppresses the penetration of water into the shoe through the joint portion between the members, thereby preventing discomfort.

Means to Solve the Problems

[0007] A split-toe shoe according to an embodiment is characterized by having a partition between the first and second toes of the foot. The partition includes: a separating outer cover portion that separates the first and second toes of the foot by entering, toward the basal side of the first and second toes of the foot, from an outer cover tip portion of a shoe outer cover portion that forms the exterior of the split-toe shoe and covers the foot; an insole cutout portion that is formed by entering, toward the basal side of the first and second toes of the foot, from an insole tip portion of an insole portion disposed below the outer cover tip portion; and a shoe sole cutout portion that is formed by entering, toward the basal side of the first and second toes of the foot, from a shoe sole tip portion of a shoe sole portion disposed below the insole portion. An outer cover edge of the separating outer cover portion enters from above the insole cutout portion to adhere to the rear surface side of the insole portion around the insole cutout portion, and the shoe sole portion adheres to the outer cover edge and adheres to the insole portion.

[0008] Further, in the split-toe shoe, the separating outer cover portion may be formed by a single member, and the separating outer cover portion may be sewn and integrated with the outer cover tip portion.

[0009] Moreover, in the split-toe shoe, an insole curved portion may be formed in the insole portion that is in contact with the insole cutout portion.

[0010] Furthermore, in the split-toe shoe, a shoe sole curved portion may be formed in the shoe sole portion that is in contact with the shoe sole cutout portion.

[0011] In addition, in the split-toe shoe, a protective piece may be provided in the shoe sole tip portion.

[0012] Further, in the split-toe shoe, a protective piece cutout portion may be formed in the protective piece.

Advantageous Effects of the Invention

[0013] The split toe shoe according to the present invention is characterized by having a partition between the first and second toes of the foot. The partition includes: a separating outer cover portion that separates the first and second toes of the foot by entering, toward the basal side of the first and second toes of the foot, from an outer cover tip portion of a shoe outer cover por-

tion that forms the exterior of the split-toe shoe and covers the foot; an insole cutout portion that is formed by entering, toward the basal side of the first and second toes of the foot, from an insole tip portion of an insole portion disposed below the outer cover tip portion; and a shoe sole cutout portion that is formed by entering, toward the basal side of the first and second toes of the foot, from a shoe sole tip portion of a shoe sole portion disposed below the insole portion. The outer cover tip portion of the separating outer cover portion enters from above the insole cutout portion to adhere to the rear surface side of the insole portion around the insole cutout portion, and the shoe sole portion adheres to the outer cover edge and adheres to the insole portion. In the split-toe shoe, this ensures the flexibility of the toe of the shoe, which is divided into two halves, to allow free movement of the toes of the foot, and also prevents water from permeating into the shoe through the joint portion between the members to restrict the discomfort from occurring.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] Features, advantages, and technical and industrial significance of exemplary embodiments of the invention will be described below with reference to the accompanying drawings, in which like numerals denote like elements, and wherein:

FIG. 1 is an overall perspective view illustrating a split-toe shoe according to an embodiment,
 FIG. 2 is an exploded view illustrating the split-toe shoe according to the embodiment,
 FIG. 3 is a partially enlarged plan view illustrating a partition,
 FIG. 4 is a partially enlarged front view illustrating a separating outer cover portion,
 FIG. 5 is a schematic diagram illustrating a positional relationship between the separating outer cover portion and an insole cutout portion,
 FIG. 6 is a partially enlarged bottom view illustrating an insole portion,
 FIG. 7A is a partially enlarged plan view illustrating an insole portion,
 FIG. 7B is a cross sectional view of FIG. 7A taken along line A-A,
 FIG. 8A is a partially enlarged plan view illustrating a shoe sole portion, and
 FIG. 8B is a cross sectional view of FIG. 8A taken along line B-B.

DETAILED DESCRIPTION OF EMBODIMENTS

[0015] A split-toe shoe 1 (also referred to as a tabi shoe) according to an embodiment illustrated in FIG. 1 has a toe 3 as a tip portion of the shoe, which is divided into two halves, and a partition 2 between the first and second toes of the foot. The first toe (foot thumb) of the foot is separated from the second to fifth toes of the foot

by the partition 2 and movable independently. This allows the toes to freely move, for example, the first toe can be moved away from the second toe, spreading the toes apart, and even the first toe can be bent independently from the second to fifth toes of the foot. Accordingly, the shoe is useful for working, sports, and other applications that need adjustment of the body's center of gravity through the toes, posture maintenance, and other physical balance adjustments.

[0016] In such a split-toe shoe 1, the structure tends to be more complex than in a normal round shoe without a partitioned toe. Therefore, the split-toe shoe 1 according to the embodiment is configured to enhance the effect of inhibiting water permeation through the portion of the toe divided into two halves while satisfying the ease of movement of the first toe side of the foot. In the case of a shoe for working, sports, and other applications, for the outdoor use, the shoe is frequently wetted when a user walks on puddles of water. From this point of view, waterproof specifications are in high demand.

[0017] The split-toe shoe 1 according to the embodiment has the same overall configuration as an ordinary shoe, as shown in the perspective view in FIG. 1, and mainly includes an exterior 6 (instep of the shoe) that forms the body of the shoe and encases the foot, a shoe tip 3, a heel 4, and an instep opening 5. A partition 2 is formed in the shoe tip 3. The exterior 6 is configured by a shoe outer cover portion 10 made of natural leather, synthetic leather, or synthetic resin. The exterior 6 has holes for shoe laces, for example. A shoe sole portion 30, referred to as the outer sole, for example, is joined directly below the exterior 6. The illustrated split-toe shoe 1 corresponds to a disclosure of one embodiment, and other shoe shapes, forms, and designs, for example, other than those shown in FIG. 1 may be made as appropriate. If needed, shoe laces may be appropriately attached to the shoe outer cover portion 10 and spikes to the shoe sole portion 30, for example (not shown).

[0018] FIG. 2 is an exploded perspective view illustrating the main structure of the split-toe shoe 1. In the order from top to bottom, the split-toe shoe 1 mainly configured by including the shoe outer cover portion 10, an insole portion 20, and the shoe sole portion 30. Inner soles, fabrics, cushioning members, thickness adjusting members, and protective steel plates, for example, not shown in FIG. 2, may be added as needed.

[0019] The shoe outer cover portion 10 forms the exterior 6 of the split-toe shoe 1 and encases the toes, instep, and heel of the foot of the shoe wearer. The shoe outer cover portion 10 also includes an outer cover tip portion 11 as a member that reinforces the shoe tip 3 of the split-toe shoe 1. The shoe outer cover portion 10 and outer cover tip portion 11 may be constructed as a single piece of fabric or material, or they can be combined separately. The separating outer cover portion 13 is then provided on the outer cover tip portion 11 of the shoe outer cover portion 10. The partition 2 is formed in the outer cover tip portion 11 of the shoe tip 3. The partition

2 is a member that separates the first and second toes of the foot, and the separating outer cover portion 13 serves to separate the first and second toes. The separating outer cover portion 13 is a member that enters from the outer cover tip portion 11 to the basal side 12 of the first and second toes of the foot to separate the first and second toes of the foot.

[0020] The insole portion 20 is disposed below the shoe outer cover portion 10 and is in contact with the plantar surface of the foot of the wearer. The insole portion 20 is joined to the shoe outer cover portion 10 by adhesion. The toes, instep, and heel of the foot of the wearer are encased by the shoe outer cover portion 10, and the planter surface of the foot is encased and protected by the insole portion 20. The insole portion 20 has an insole cutout portion 23 formed by entering from the insole tip portion 21 toward the basal side 22 of the first and second toes of the foot. The insole cutout portion 23 is a notch-shaped portion for increasing the mobility of the first and second toes, and in the embodiment has an elongated U-shape.

[0021] The shoe sole portion 30 is disposed below the insole portion 20 and is in direct contact with the ground to mitigate the impact at the time of ground contact. The shoe sole portion 30 is joined to the insole portion 20 by adhesion. The shoe sole portion 30 has a shoe sole cutout portion 33 formed by entering from the shoe sole tip portion 31 toward the basal side 32 of the first and second toes of the foot. The shoe sole cutout portion 33 is a notch-shaped portion for increasing the mobility of the first and second toes, and in the embodiment has an elongated U-shape in the same manner as in the insole cutout portion 23. In addition, a protective piece 35 is provided on the shoe sole tip portion 31 of the shoe sole portion 30 according to the embodiment. Further, a protective piece cutout portion 36 is formed in the protective piece 35.

[0022] FIG. 3 is an enlarged plan view illustrating a portion of the partition 2 of the split-toe shoe 1. As understood from FIGS. 2 and 3, in the partition 2 of the split-toe shoe 1, the upper shoe outer cover portion 10 to the lower shoe sole portion 30 is separable from left to right in the front view of the shoe tip 3. As described above, the first toe (foot thumb) of the foot can move up and down or side to side independently of the other two to five toes of the foot, and the range of motion of the first toe is extended.

[0023] FIG. 4 is a front schematic diagram illustrating the separating outer cover portion 13, which is configured as the partition 2 of the shoe outer cover portion 10, spread out. As understood from FIG. 4, the separating outer cover portion 13 is formed by a single member. In particular, it is formed of the same natural leather, synthetic leather, or synthetic resin or other materials as those of the outer cover tip portion 11 of the shoe outer cover portion 10. The separating outer cover portion 13 of the single member is then sewn and integrated with the outer cover tip portion 11 side of the shoe outer cover

portion 10. A cutout adhering portion 14 in FIG. 4 will be described with reference to FIG. 6 below.

[0024] To form the partition 2 in the outer cover tip portion 11 and partition the first toe from the second toe by the separating outer cover portion 13, a fine curvature corresponding to the toes is needed. A curved surface portion is formed by adjusting the seam allowance when multiple members are sewn. Dividing the portion into smaller portions and sewing them to form the curved surface portion of the partition increase the sewing processes and the weight of them. In addition, water can easily penetrate through the sewn portions. Accordingly, to form the curved surface portion with both suppression of water penetration and reduction of sewing points, in the same manner as in the separating outer cover portion 13 shown in FIG. 4, the separating outer cover portion 13 is a single member, but a configuration is employed in which the separating outer cover portion 13 and the outer cover tip portion 11 side are integrated by sewing.

[0025] FIG. 5 is a schematic diagram illustrating a positional relationship of the separating outer cover portion 13 that enters the insole cutout portion 23. The separating outer cover portion 13 is folded in a V-shape in plan view and sewn to the outer cover tip portion 11 side (see FIG. 4). The folded separating outer cover portion 13 is then inserted into the insole cutout portion 23. As shown in FIG. 5, the separating outer cover portion 13 contacts the insole cutout portion 23 of the insole tip portion 21 of the insole portion 20, which is divided into two halves. Thus, the shoe tip 3 is divided into two sections: the first toe (foot thumb) and the second to fifth toes of the foot.

[0026] FIG. 6 is a partially enlarged bottom view illustrating a portion in the vicinity of the insole tip portion 21 of the insole portion 20. The outer cover edge (cutout adhering portion 14 and adhering portion 15) of the separating outer cover portion 13 enters from above the insole cutout portion 23 and adheres to the shoe sole surface portion 28 side of the rear surface of the insole portion 20 around the insole cutout portion 23. As shown in FIGS. 1 and 3, for example, the shoe sole portion 30 then adheres to the outer cover edge (cutout adhering portion 14, and adhering portion 15) and the insole portion 20.

[0027] In the illustration, the shoe outer cover portion 10 covers the insole portion 20 and fixed in place, and the adhering portion 15 (glue allowance) that adheres the shoe outer cover portion 10 to the insole portion 20 is shown. The adhering portion 15 is then folded and adhered to an insole bottom surface portion 28 of the insole portion 20, and the shoe outer cover portion 10 is fixed to the insole portion 20. Simultaneously, the folded separating outer cover portion 13 is inserted into the insole cutout portion 23 (see FIG. 5), and the cutout adhering portion 14 (glue allowance) of the separating outer cover portion 13 is also shown. The cutout adhering portion 14 is also folded in the same manner as the adhering portion 15 and adhered to the insole bottom surface portion 28 of the insole tip portion 21 around the insole cutout portion 23 (see FIG. 5). To correspond to the U-shaped

cutout shape of the insole cutout portion 23, the cutout adhering portion 14 includes an appropriate cut portion to improve the ease of bending process in addition to the flexibility of the material itself.

[0028] As the structure of the partition 2 can easily become complicated, it is preferable to form the partition 2 as a single water-resistant member, as shown in the separating outer cover portion 13 according to the embodiment, if water penetration from the sewing points is to be suppressed as much as possible. Accordingly, the separating outer cover portion 13 is formed as long enough to provide the cutout adhering portion 14. For this purpose, the partition 2 is configured without compromising the integrity of the separating outer cover portion 13. In particular, the area around the basal sides 12, 22 of the first and second toes of the foot at the time of ground contact is protected without any breaks by the folds of the separating outer cover portion 13 and the cutout adhering portion 14, thereby improving the water resistance performance.

[0029] FIG. 7A is a partially enlarged plan view illustrating a portion of the insole tip portion 21 of the insole portion 20, and FIG. 7B is a cross sectional view of FIG. 7A taken along line A-A. An insole curved portion 24 is formed in the insole portion 20 that is in contact with the insole cutout portion 23. That is, the insole curved portion 24 is formed around the U-shaped circumference of the insole cutout portion 23 including the basal side 22. Further, in the insole portion 20 according to the embodiment, the insole curved portion 24 is formed around the entire circumference of the insole portion 20.

[0030] The formation of the insole curved portion 24 around the U-shaped circumference of the insole cutout portion 23 rounds the insole bottom surface portion 28 (see FIG. 6) side of the partition 2. Accordingly, when the cutout adhering portion 14 of the separating outer cover portion 13 is adhered to the shoe sole surface portion 28 of the insole cutout portion 23, the curvature of the insole curved portion 24 causes the cutout adhering portion 14 to be less likely damaged by the corners. In addition, the curvature of the insole curved portion 24 follows the shape of the first toe (foot thumb) and second toe of the foot, improving the shoe comfort.

[0031] FIG. 8A is a partially enlarged plan view illustrating a shoe sole tip portion 31 of the shoe sole portion 30, and FIG. 8B is a cross sectional view of FIG. 8A taken along line B-B. A shoe sole curved portion 34 is formed in the shoe sole portion 30 that is in contact with the shoe sole cutout portion 33. That is, the shoe sole curved portion 34 is formed around the U-shaped circumference of the shoe sole cutout portion 33 including the basal side 32. Further, in the shoe sole portion 30 according to the embodiment, the shoe sole curved portion 34 is formed around the entire circumference of the shoe sole portion 30. FIG. 8A shows a schematic cross sectional view and if needed, the rear surface (ground contact surface) of the shoe sole portion 30 includes appropriate shoe grooves, anti-slip, and spikes, for example (not shown).

[0032] The formation of the shoe sole curved portion 34 around the U-shaped circumference of the shoe sole cutout portion 33 improves the adhesion with the insole portion 20 including the insole curved portion 24 in FIGS. 7A and 7B above. The slope and curvature of the shoe sole curved portion 34 is defined in consideration of, for example, the wall thickness of the insole curved portion 24 as well as the cutout adhering portion 14 and adhering portion 15 attached thereto, and the thickness of the fold of the adhering portion 15, for example, created by the bending process. Thus, the insole curved portion 24 of the insole portion 20 and the shoe sole curved portion 34 of the shoe sole portion 30 are more integrated, and when the first toe (foot thumb) of the foot is moved, the partition 2 has better following performance to the movement of the first toe, thereby improving the comfort and mobility.

[0033] Here, as understood from FIGS. 2, 3, 8A and 8B, a protective piece 35 is provided on the shoe sole tip portion 31. The protective piece 35 may be made of the same material as the shoe sole portion 30, or a material different from that of the shoe sole portion 30 may be separately joined. In the embodiment, the shoe sole portion 30 is configured by two layers of a synthetic resin material, with the outermost ground contacting portion extended to form the protective piece 35. The protective piece 35 protects the shoe tip 3 and outer cover tip portion 11 from impact. In the case of a shoe for working, sports, and other applications, the shoe tip 3 is easily hit against other objects. In addition, with a conventional rounded shoe tip, impact may be dispersed throughout the shoe tip, and impact to the toes is mitigated. Since the split-toe shoe 1 includes the partition 2, however, the impact cannot be distributed over the entire shoe tip. Accordingly, the protective piece 35 receives the impact in advance, limiting the impact to be directly transmitted to the first and second toes in the separating outer cover portion 13.

[0034] In addition, a protective piece cutout portion 36 is formed in the protective piece 35. The protective piece cutout portion 36 is formed for separation of the left and right sides as the partition 2. If the protective piece 35 is assumed to be a single member, the single protective piece 35 may reduce the mobility of the individual toes at the partition 2. Accordingly, the protective piece cutout portion 36 is provided in the protective piece 35 so that the shoe sole cutout portion 33 is independently movable between the first and second toes.

[0035] As described in the series of descriptions, the partition allows the first toe and the second to fifth toes of the foot to move independent from each other in the split-toe shoe 1 (tabi shoe), and thus the split-toe shoe 1 is useful for working, sports, and other applications that need adjustment of the center of gravity of the body through the toes, and adjustment of the physical balance such as posture maintenance. The partition separating the first and second toes is sewn without complicating the structure, and in addition, the water penetration control effect is enhanced at the portion of the partition that

divides the foot into two halves, mainly at the basal side of the toe. This reduces the discomfort of water damage when the shoes are continuously worn.

Description of Reference Numerals

[0036]

1: Split-Toe Shoe	
2: Partition	10
3: Shoe Tip	
4: Heel	
5: Instep Opening	
6: Exterior	
10: Shoe Outer Cover Portion	15
11: Outer Cover Tip Portion	
12: Basal Side of the First and Second Toes of the Foot	
13: Separating Outer Cover Portion	
14: Cutout Adhering Portion	20
15: Adhering Portion	
20: Insole Portion	
21: Insole Tip Portion	
22: Basal Side of the First and Second Toes of the Foot	25
23: Insole Cutout Portion	
24: Insole Curved Portion	
28: Shoe Sole Surface Portion	
30: Shoe Sole Portion	
31: Shoe Sole Tip Portion	30
32: Basal Side of the First and Second Toes of the Foot	
33: Shoe Sole Cutout Portion	
34: Shoe Sole Curved Portion	
35: Protective Piece	35
36: Protective Piece Cutout Portion	

Claims

1. A split-toe shoe comprising a partition between first and second toes of a foot, wherein the partition includes:

a separating outer cover portion that separates the first and second toes of the foot by entering from an outer cover tip portion of a shoe outer cover portion that forms an exterior of the split-toe shoe and encases the foot to a basal side of the first and second toes of the foot; 45 50

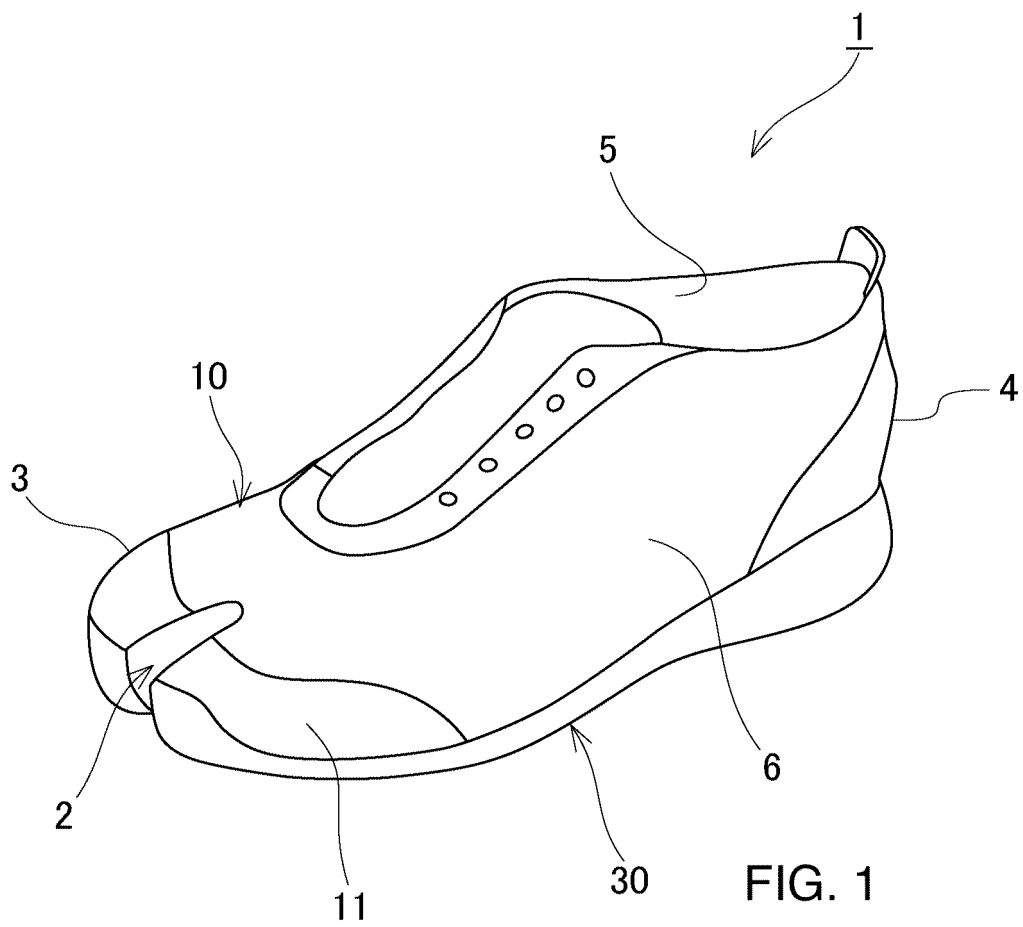
an insole cutout portion formed by entering from an insole tip portion of an insole portion disposed below the shoe outer cover portion to the basal side of the first and second toes of the foot; and 55

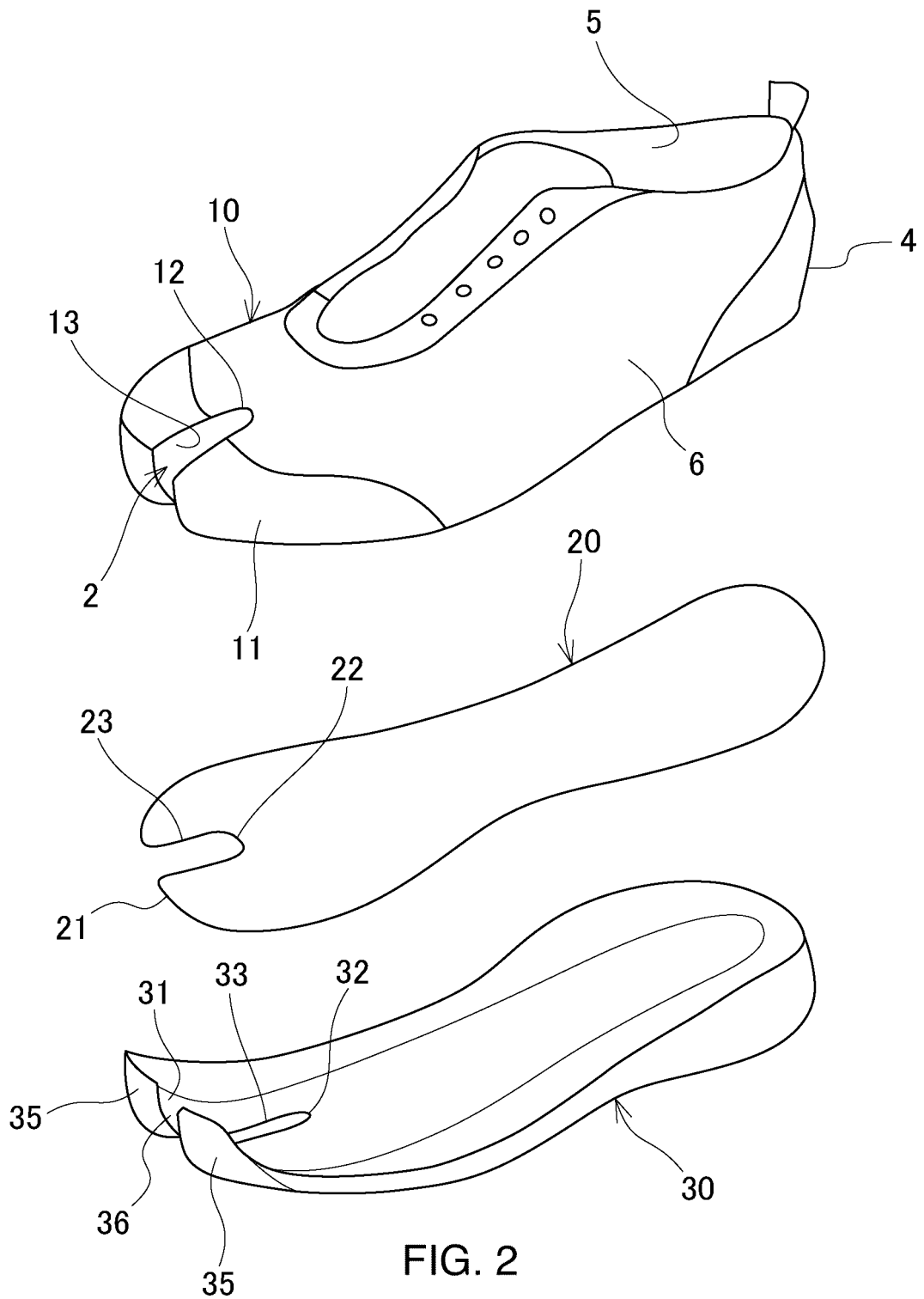
a shoe sole cutout portion formed by entering from a shoe sole tip portion of a shoe sole portion disposed below the insole portion to the basal side of the first and second toes of the foot,

wherein

an outer cover edge of the separating outer cover portion includes a cutout adhering portion having a cut portion corresponding to a U-shaped cutout shape of the insole cutout portion, the cutout adhering portion enters from above the insole cutout portion and is folded and adheres to a rear surface side of the insole portion around the insole cutout portion, and the shoe sole portion closely adheres to the outer cover edge and adheres to the insole portion, and an insole curved portion is formed around the U-shaped cutout shape of the insole cutout portion including a basal side in the insole portion in contact with the insole cutout portion to round an insole bottom surface portion of the partition such that a curvature of the insole curved portion follows a shape of the first and second toes of the foot.

2. The split-toe shoe according to claim 1, wherein the separating outer cover portion is formed by a single member and the separating outer cover portion is sewn and integrated with the outer cover tip portion.
3. The split-toe shoe according to claim 1, wherein a shoe sole curved portion is formed in the shoe sole portion that is in contact with the shoe sole cutout portion.
4. The split-toe shoe according to claim 1, wherein a protective piece is provided in the shoe sole tip portion.
5. The split-toe shoe according to claim 4, wherein a protective piece cutout portion is formed in the protective piece.





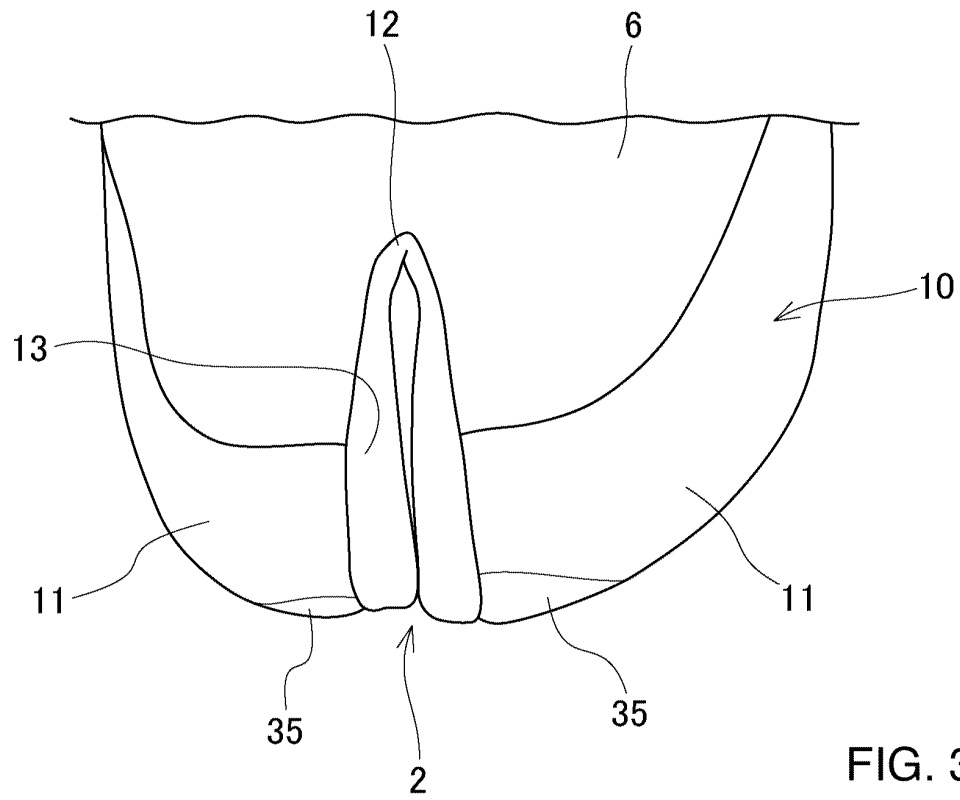


FIG. 3

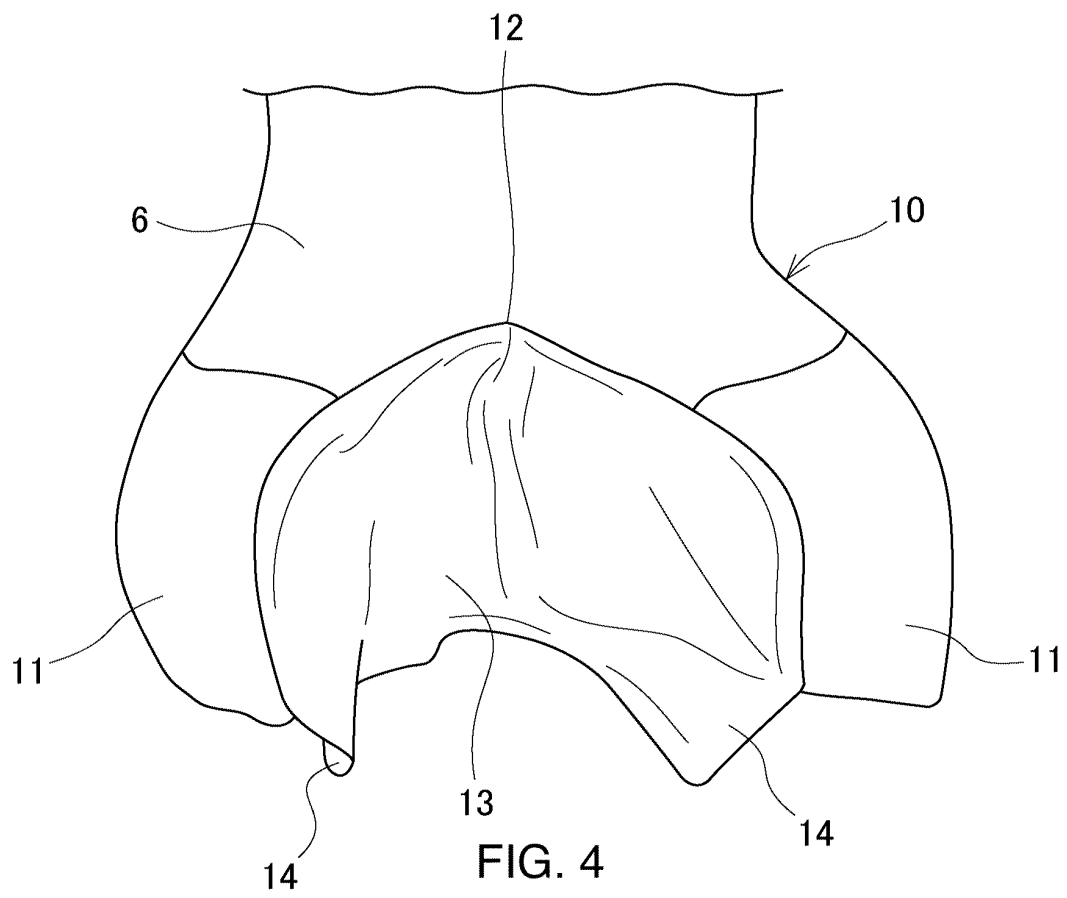


FIG. 4

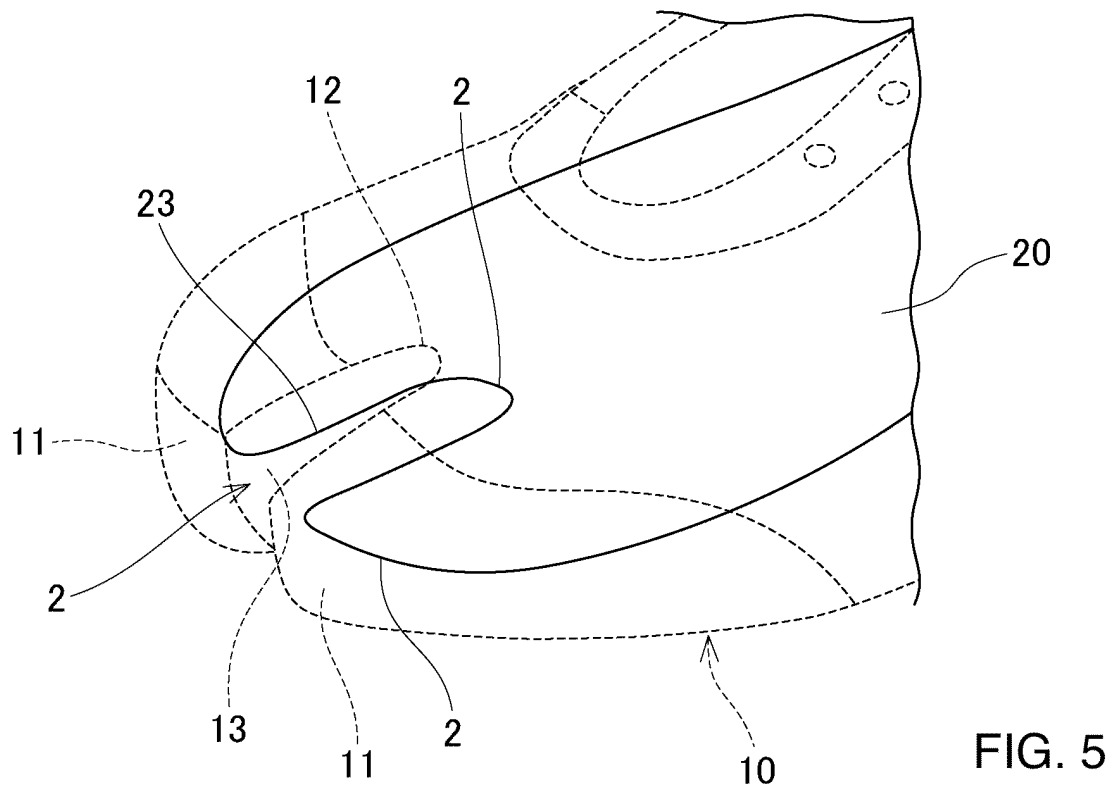


FIG. 5

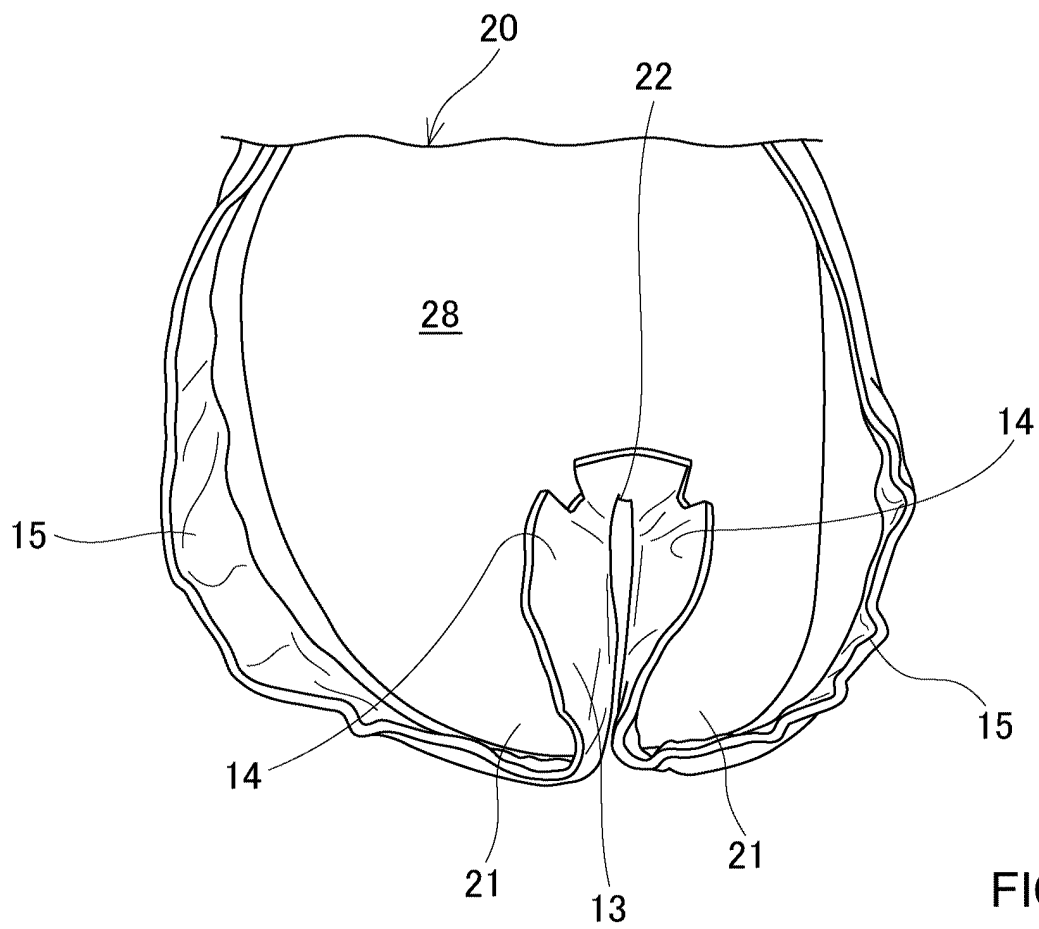


FIG. 6

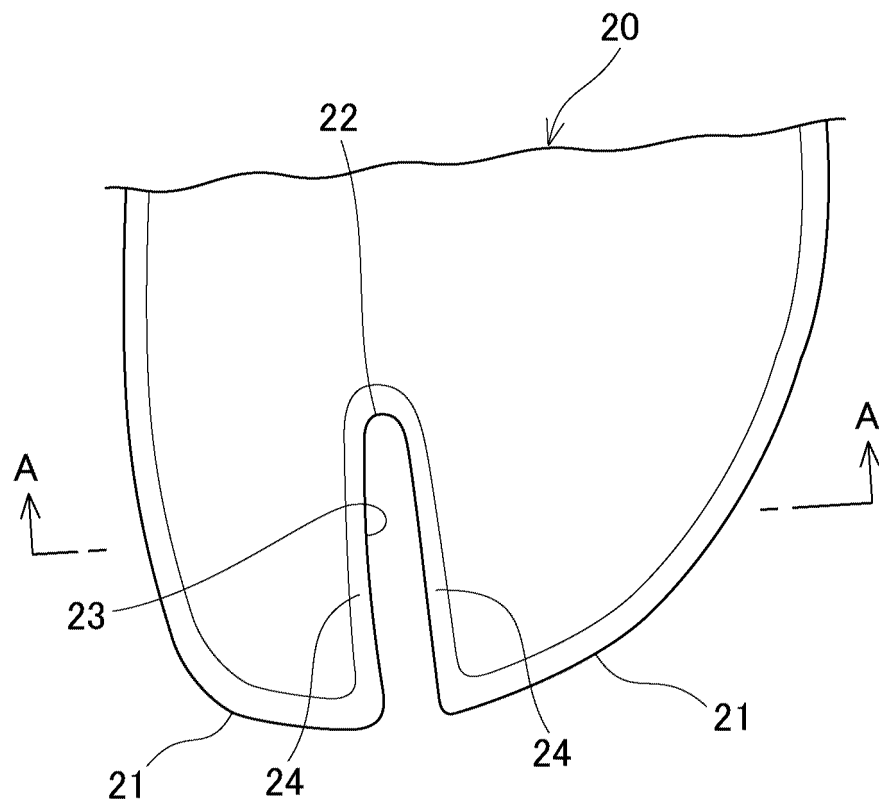


FIG. 7A

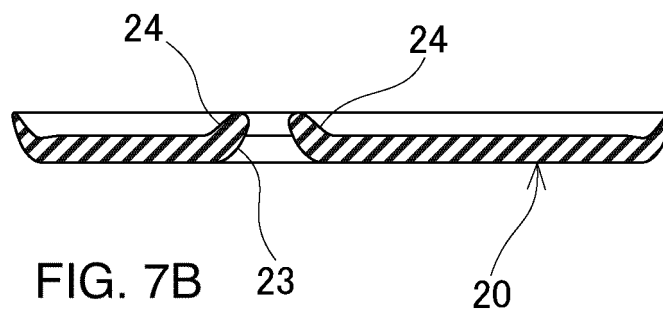


FIG. 7B

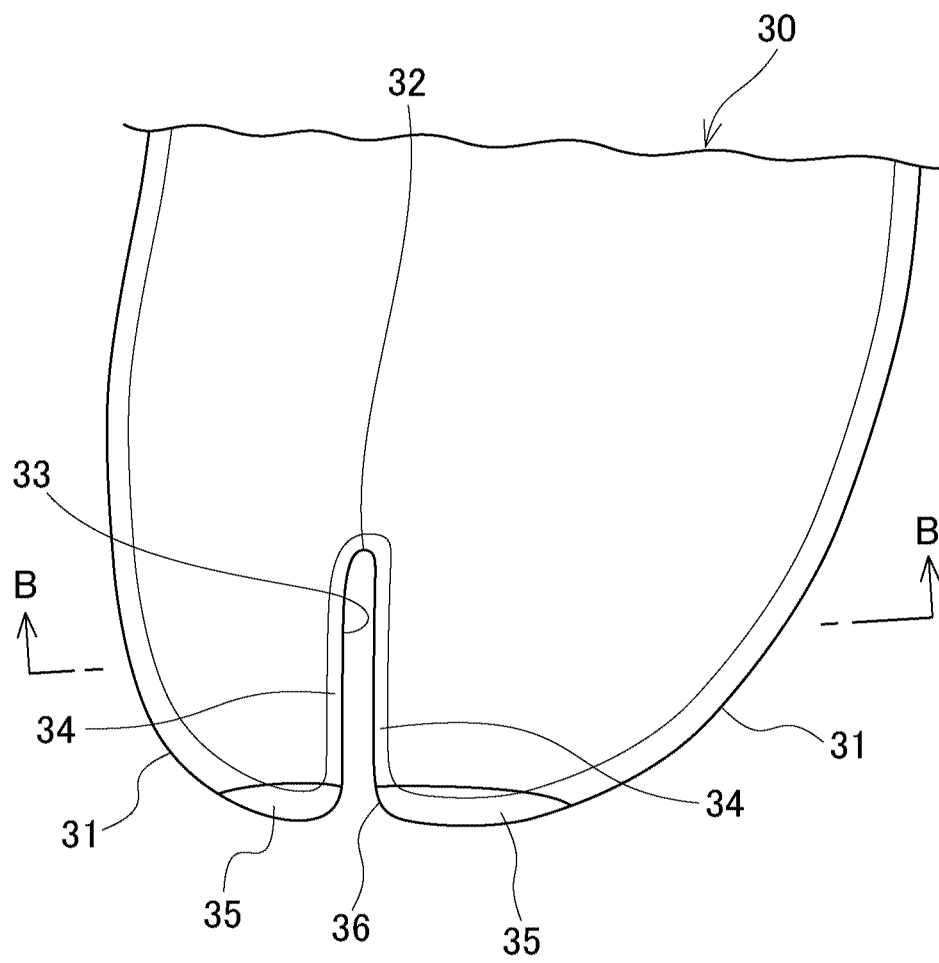


FIG. 8A

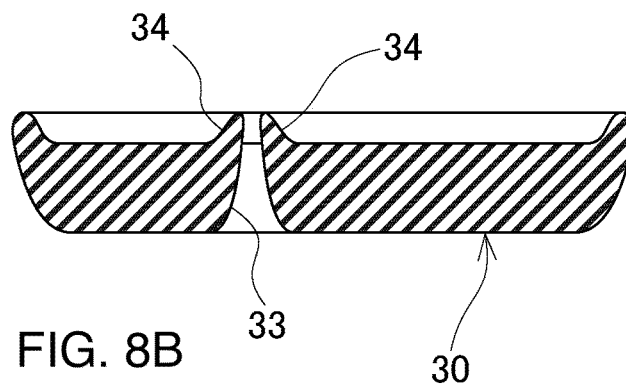


FIG. 8B

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2022/042863

A. CLASSIFICATION OF SUBJECT MATTER**A43B 3/00**(2022.01)i; **A43B 7/26**(2006.01)i; **A43B 23/02**(2006.01)i

FI: A43B3/00 101; A43B7/26; A43B23/02 102

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)

A43B1/00-23/30; A43C1/00-19/00; A43D1/00-999/00

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

Published examined utility model applications of Japan 1922-1996

Published unexamined utility model applications of Japan 1971-2022

Registered utility model specifications of Japan 1996-2022

Published registered utility model applications of Japan 1994-2022

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CD-ROM of the specification and drawings annexed to the request of Japanese Utility Model Application No. 4252/1992 (Laid-open No. 63301/1993) (MAMIYA-OP CO., LTD.) 24 August 1993 (1993-08-24), abstract, fig. 1	1-5
A	JP 10-14601 A (DAIJIYOUNBU TABI KK) 20 January 1998 (1998-01-20) abstract, fig. 1	1-5
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☒ Further documents are listed in the continuation of Box C.
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Date of the actual completion of the international search

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Date of mailing of the international search report

10 January 2023

Name and mailing address of the ISA/JP

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

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