



EUROPEAN PATENT APPLICATION
published in accordance with Art. 153(4) EPC

(43) Date of publication:
20.11.2019 Bulletin 2019/47

(51) Int Cl.:
A43B 13/36 (2006.01) A43B 21/42 (2006.01)

(21) Application number: **18738476.3**

(86) International application number:
PCT/JP2018/000130

(22) Date of filing: **05.01.2018**

(87) International publication number:
WO 2018/131548 (19.07.2018 Gazette 2018/29)

(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:
MA MD TN

(71) Applicant: **Abilitier, Inc.**
Chuo-ku
Tokyo 104-0061 (JP)

(72) Inventor: **TAKAHISA, Tsutomu**
Ota-ku
Tokyo 146-0085 (JP)

(74) Representative: **Hübner, Gerd**
Rau, Schneck & Hübner
Patentanwälte Rechtsanwälte PartGmbB
Königstraße 2
90402 Nürnberg (DE)

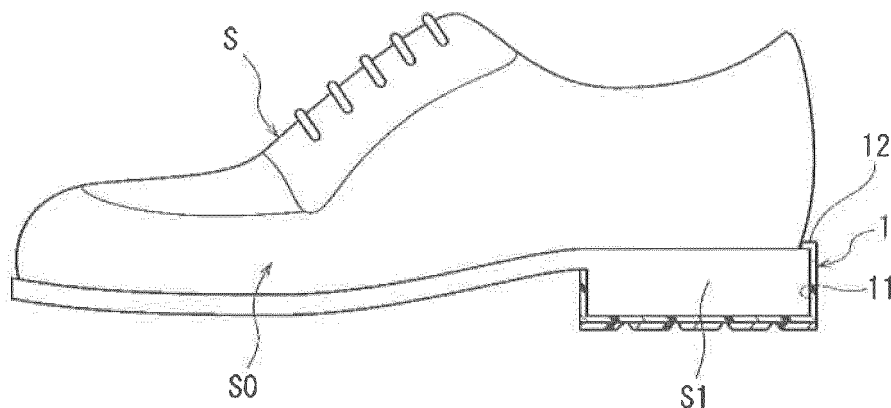
(30) Priority: **10.01.2017 JP 2017002010**

(54) **SHOE HEEL COVER**

(57) There is provided a shoe heel cover readily applicable, for example, to commercially available shoes. A shoe heel cover (1) has a configuration including a fitting section (11) detachably fitted to the heel section (S1) of a shoe (S) formed of a shoe body (S0) and a heel

section (S1). The shoe heel cover (1) further includes a latching section (12) that latches to a stepped section formed between the shoe body (S0) and the heel section (S1).

Fig. 1



Description

Brief Description of Drawings

Technical Field

[0009]

[0001] The present invention relates to a shoe heel cover.

5

[Figure 1] Figure 1 is a descriptive diagram showing the state in which a shoe heel cover according to Example 1 is fitted to a heel section of a shoe.

Background Art

[Figure 2] Figure 2 is a descriptive diagram showing a schematic configuration of the shoe heel cover according to Example 1.

[0002] In related art, whenever shoes are used, only a heel section of each of the shoes, in particular, wears, undesirably resulting in a decrease in the period for which the shoes are usable.

10

[Figure 3] Figure 3 is a cross-sectional view of the shoe heel cover taken along the line A-A in Figure 2.

[0003] Under the circumstances described above, Patent Literature 1, for example, discloses a shoe sole structure that allows exchange of only a most worn portion of the heel.

15

[Figure 4] Figure 4 shows schematic configurations of part of the side surface of a fitting section in Example 1.

[Figure 5] Figure 5 is a descriptive diagram showing the state in which a shoe heel cover according to Example 2 is fitted to a heel section of a shoe.

Citation List

20

[Figure 6] Figure 6 is a perspective view showing a schematic configuration of a shoe heel cover according to Example 3.

Patent Literature

[0004] Patent Literature 1: Japanese Utility Model Laid-Open No. 6-82905

25

[Figure 7] Figure 7 is a perspective view showing a schematic configuration of a shoe heel cover according to Example 4.

Summary of Invention

[Figure 8] Figure 8 is a cross-sectional view of the shoe according to Example 4 taken along the line B-B in Figure 7.

Technical Problem

30

[Figure 9] Figure 9 is a perspective view showing a schematic configuration of a shoe heel cover according to Example 5.

[0005] The shoe sole structure disclosed in Patent Literature 1 is, however, applicable only to custom-made shoes, and individuals themselves cannot readily apply the structure, for example, to commercially available shoes.

35

[Figure 10] Figure 10 is a perspective view showing a schematic configuration of a shoe heel cover according to Example 6.

[0006] An object of the present invention is to provide a shoe heel cover readily applicable, for example, to commercially available shoes.

[Figure 11] Figure 11 is a descriptive diagram for describing the configuration of air grooves in Example 6. Figure 11(a) is a front view of the air grooves, and Figure 11(b) is a cross-sectional view of the air grooves.

Solution to Problem

40

[Figure 12] Figure 12 is a cross-sectional view for describing the distribution of heights of suckers in Example 6.

[0007] To achieve the object described above, a shoe heel cover according to the present invention includes a fitting section detachably fitted to a heel section of a shoe formed of a shoe body and the heel section.

45

[Figure 13] Figure 13 is a plan view for describing the configuration of positioning means in Example 6. Figure 13(a) shows protruding pieces each having a right-angled triangular shape. Figure 13(b) shows protruding pieces each having a semicircular shape. Figure 13(c) shows cutouts. Figure 13(d) shows partial cutouts.

Advantageous Effects of Invention

50

[Figure 14] Figure is a descriptive diagram for describing the shape of the heel cover according to Example 6.

[0008] The shoe heel cover according to the present invention described above, which has the configuration described above, only fitting the heel cover to the heel section of the shoe suffices, whereby the configuration is readily applicable to commercially available shoes. The life of the shoe can be further prolonged by exchanging the heel cover before it is so worn that the shoe sole is reached.

55

[Figure 15] Figure 15 is a cross-sectional view for describing the shape of a bottom surface section of a fitting section according to Example 6.

[Figure 16] Figure 16 is a plan view of an outsole section of a heel cover according to Example 7.

[Figure 17] Figure 17 is a plan view of an outsole section of a heel cover according to a variation of

Example 7.

[Figure 18] Figure 18 is a plan view of an outsole section of a heel cover according to another variation of Example 7.

[Figure 19] Figure 19 is a perspective view of an adjustment member.

[Figure 20] Figure 20 is a cross-sectional view of a bellows taken along the plane C-C in Figure 16.

Description of Embodiment

[0010] An embodiment for implementing the present invention will be described below based on Examples 1 to 5 shown in the drawings. In the description, a "heel cover" used in the present invention is defined as a portion fitted at least to a heel section of a shoe to cover the heel section and can, of course, also be configured to cover a portion other than the heel section. In this sense, the "heel cover" according to the present invention can be expressed, for example, as a sole cover and an outsole cover.

Example 1

(Configuration)

[0011] The configuration of the shoe heel cover will first be described. Figure 1 shows the state in which a shoe heel cover 1 according to Example 1 is fitted to a heel section S1 of a shoe S, and Figure 2 shows a schematic configuration of the shoe heel cover 1 according to Example 1. The shoe heel cover 1 according to Example 1 is so presented by way of example as to be used as part of a shoe S used by men and having a semi-cylindrical heel section S1 having a curved portion facing rearward.

[0012] The shoe heel cover 1 according to Example 1 has a semi-cylindrical shape roughly similar to the shape of the heel section S1 of the shoe S and includes a fitting section 11 detachably fitted to the semi-cylindrical heel section S1 of the shoe S formed of a shoe body S0 and the heel section S1, as shown in Figure 1. The shape of the heel cover 1 is not limited to the shape roughly similar to the shape of the heel section S1 of the shoe S, and a difference to some extent from the shape of the heel section S1 of the shoe S can be absorbed as long as the shape of the heel cover 1 has an adequate elastic deformation capability.

[0013] The heel cover 1 includes an inwardly protruding, flange-shaped latching section 12, which is provided on the rear side of the fitting section 11 and along the right and left upper end edges thereof and latches to a stepped portion formed between the shoe body S0 and the heel section S1 (the stepped portion is an upward facing surface of a portion formed around the heel section S1 and jutting outward beyond the side surface of the shoe body S0), as shown in Figures 1 and 2. That is, the latching section 12 has an L-letter-shaped cross section

or a hook-shaped cross section that bends inward so that the latching section 12 latches to the stepped portion.

[0014] The side surface of the fitting section 11 is preferably made of wall-shaped rubber (synthetic rubber) or resin (synthetic resin) for tight fastening, and fastening the heel section S1 with the side surface allows an increase in the joining strength at which the heel cover 1 joins to the heel section S1. That is, the inner circumferential length of the fitting section 11 is so set as to be shorter than the outer circumferential length of the heel section S1. Therefore, to attach the heel cover 1 to the shoe S, the heel cover 1 is fitted to the heel section S1 with the fitting section 11 stretched with a hand.

[0015] The entire heel cover 1 is made of synthetic rubber, synthetic resin, or any other similar material, as described above. The upper side of the heel cover 1 that is the side where the fitting section 11 is provided is, however, made of readily stretchable synthetic rubber or synthetic resin that allows the heel cover 1 to be attached to the heel section S1 of shoes S having sizes different from one another to some extent. Silicon rubber, for example, is preferably used as an example of the readily stretchable synthetic rubber.

[0016] An outsole section that is a lower portion of the heel cover 1 is preferably made of harder synthetic rubber or synthetic resin so that the outsole portion is unlikely to wear. The material of the outsole section, which is the lower portion of the heel cover 1, can be a material typically used to form a sole. Further, rivets, spikes, or any other component can be placed on the outsole section, which is the lower portion of the heel cover 1, to allow the shoe to be used on a rough road, a snowy road, and a muddy road.

[0017] The upper and lower portions of the heel cover 1 may, of course, be made of the same material. Using the same material allows the entire heel cover 1 to be produced in a single injection molding process.

[0018] The bottom surface of the fitting section 11 (inner surface facing upward when heel cover is attached to shoe) includes a plurality of suckers 13 facing upward to increase the adhesion between the bottom surface of the fitting section 11 and the heel section S1, as shown in Figures 2 and 3. Although not shown, the bottom surface of the fitting section 11 may instead include one large sucker 13 facing upward. Further, a single sucker or a plurality of suckers can be placed on the side surface of the fitting section 11. Standing edge portions drawn in the dotted lines in Figure 3 can also be provided around each of the suckers 13. Further, a tongue-shaped section 21 protrudes frontward from an upper portion of the front side surface of the fitting section 11 of the heel cover 1, as shown in Figure 2, and the wearer can readily pinch the tongue-shape section 21 with fingers. Pinching and pulling the tongue-shaped section 21 with fingers allows the heel cover 1 to be readily attached and detached. The tongue-shaped section 21 can instead be placed at an upper portion of the rear side surface of the fitting section 11.

[0019] Figures (4a) to 4(c) show schematic configurations of part of the side surface of the fitting section. In each of the figures, the left side shows a front view, and the right side shows a cross-sectional view. Further, suckers 14,... each having an inverted scale of a fish and oriented inward, such as those shown in Figure 4(c), can be provided on the side surface of the fitting section 11. The suckers 14,..., each having an inverted scale of a fish, each form a scale-shaped (wedge-shaped) protrusion having a base portion facing downward, and a semispherical recess (sucking section) is provided in the vicinity of the center of the surface of the protrusion, whereby the fitting section 11 can be relatively smoothly fitted to the heel section S1. On the other hand, the shape of the protrusions as well as the sucking force produced by the suckers causes the fitting section 11 to be unlikely to be detached from the heel section S1. In other words, when the wearer causes the foot to step on the shoe, the side surface of the fitting section 11 moves in the direction in which the fitting section 11 is pushed against the heel section S1, whereas when the wearer lifts the foot (reduces stepping-on force), a base portion of each of the inverted scales locks to the heel section S1 and moves integrally with the heel section S1.

[0020] Instead, only a plurality of semispherical recesses (sucking sections) with no inverted-scale-shaped protrusions can be formed in the side surface in a zigzag pattern, as shown in Figure 4(a). Still instead, only downward scale-shaped protrusions with no semispherical recesses (sucking sections) can be placed in a zigzag pattern, as shown in Figure 4(b).

[0021] Although not shown, as means for joining the fitting section 11 to the heel section S1, a double-sided tape with no suckers 13 can be glued onto the bottom surface of the fitting section 11, or a double-sided tape can be added and glued onto a central portion of the upper surface of each of the suckers 13. Still instead, a double-sided tape can be glued onto a region around each of the suckers 13 (region between adjacent suckers 13).

[0022] Further, as the joining means, the double-sided tape may be replaced, for example, with an adhesive. In the case where an adhesive is used, an advantage of an increase in the joining strength is provided, whereas the attached adhesive needs to be carefully removed, for example, when a worn heel cover 1 is exchanged. Instead, viscous, sticky silicon gel used in many cases, for example, to fix furniture in preparation of earthquakes can be used.

[0023] Instead, as the joining means, a metal plate may be glued onto one of the bottom surface of the fitting section 11 and the heel section S1, and a magnet may be glued to the other to form a magnetic joint. Further, magnets can be placed on both the fitting section 11 and the heel section S1. Using magnetic force as described above allows not only an increase in the joining strength at which the heel section S1 joins to the heel cover 1 but easy exchange of a worn heel cover 1.

(Workings and effects)

[0024] Workings and effects provide by Example 1 will next be described in the form of a list.

5 **[0025]** The shoe heel cover 1 according to Example 1 includes the fitting section 11 detachably fitted to the heel section S1 of the shoe S formed of the shoe body S0 and the heel section S1.

10 **[0026]** In the configuration described above, only fitting the heel cover 1 to the heel section S1 of the shoe S suffices, whereby the configuration is readily applicable to commercially available shoes S. Further, the heel cover 1, which only needs to be fitted to the heel section S1, does not affect the upper portion of the shoe S and does not therefore compromise the exterior appearance of the shoe S.

15 **[0027]** On the other hand, the heel cover 1, which can be readily detached, can be readily temporarily detected, for example, when the wearer visits a customer and desires to make the exterior appearance of the shoes particularly beautiful. In addition, the heel cover 1 can prevent wear and damage of the side surface of the heel section S1. Conversely, since the heel cover 1 can be attached to a shoe S to be discarded because the outsole section of the heel section S1 of the shoe S has worn, whereby the shoe S can be reproduced.

20 **[0028]** The life of the shoe S can be further prolonged by exchanging the heel cover 1 before it is so worn that the shoe sole is reached. That is, since the outsole section of the heel section S1 does not wear, replacing a worn heel cover 1 with a new heel cover 1 can semi-permanently prevent wear of the outsole section of the heel section S1.

25 **[0029]** Since the heel cover 1 is made of an inexpensive material and has a simple shape suitable for volume production, the heel cover 1 is very inexpensive as compared with a case where the shoe S is repaired.

30 **[0030]** The heel cover 1 includes the latching section 12, which latches to the stepped portion formed between the shoe body S0 and the heel section S1. The latching force produced by the latching section 12 and acting on the stepped portion therefore allows the heel cover 1 to be unlikely to be detached from the heel section S1. That is, since the heel cover 1 is made of a stretchable material, latching the latching section 12 to the stepped portion with the heel cover 1 stretched can prevent the heel cover 1 from being detached.

35 **[0031]** The bottom surface (inner surface facing upward) of the fitting section 11 includes one or more suckers 13. The sucking force produced by the suckers 13 allows the heel cover 1 to be unlikely to be detached from the heel section S1. Further, since force in the direction in which the suckers 13 are pushed repeatedly acts on the suckers 13, the sucking force produced by the suckers 13 increases whenever the wearer causes the feet to step on the shoes S when walking. Further, in the case where the plurality of suckers 13 are provided, there are a plurality of distributed regions where the suckers 13

suck the bottom surface of the heel section S1, whereby the heel cover 1 is more unlikely to be detached from the heel section S1.

[0032] Further, the side surface of the fitting section 11 is provided with the suckers 14, ... each having an inverted scale of a fish. The configuration described above allows the heel cover 1 to be further unlikely to be detached from the heel section S1 based on the sucking force and return force produced by the suckers 14, ... each having an inverted scale of a fish. The suckers 13 can be arbitrarily placed on the fitting section 11. For example, the suckers 13 can be placed on the bottom and side surfaces of the fitting section 11, only on the bottom surface, or only on the side surface. Further, the planar arrangement of the suckers 13 on the bottom and side surfaces may be a zigzag arrangement, a lined-up arrangement, or any other arrangement. The size of the suckers 13 can vary on a location basis.

[0033] It is also preferable to provide a double-sided tape, as the means for joining the fitting section 11 to the heel section S1, on the bottom surface of the fitting section 11. The configuration described above allows the heel cover 1 to be further unlikely to be detached from the heel section S1 based on the joining force produced by the double-sided tape as the joining means. Further, for example, in a case where the heel section S1 has irregularities, the fitting section 11 can be bonded to the heel section S1 with an adhesive.

Example 2

[0034] Example 2 will next be described. The same or equal portions in terms of contents as those described in Example 1 have the same reference characters in the description of Example 2.

[0035] The shoe heel cover 1 according to Example 2 primarily differs from the shoe heel cover 1 according to Example 1 in that three I-letter-shaped arms 15, ..., which each have a hook-shaped front end that latches to an edge of the shoe body S0 that is the edge along which the foot is inserted into the shoe body S0, as shown in Figure 5, and that the latching force produced by the arms 15, ... and acting on the shoe body S0 causes the heel cover 1 to be further unlikely to be detached from the heel section S1.

[0036] The front end of each of the arms 15, ... is so chamfered as not to hurt the foot of the person who wears the shoe S. Instead, the arms 15 may be formed of only an arm that latches to a rear portion of an edge of the shoe body S0 that is the edge along which the foot is inserted into the shoe body S0, or the arms 15 may be formed of arms that latch to inner and outer portions of the edge. That is, the number of arms 15 is not limited to three and may instead be one, two, or even four or more. Further, the arms 15 each do not necessarily have the I-letter shape shown in Figure 5 and may have any shape. For example, the arms 15 may each have a T-letter shape or a Y-letter shape having a branched front

end or may each be formed of arms intersecting each other in an X-letter shape.

[0037] The arms 15 may have the same color of as that of the shoe S or may be transparent so that the arms 15 do not compromise the original design of the shoe S, or the arms 15 may have a fluorescent color in consideration of the nighttime safety of children and elderly persons, in particular. The latching section 12 in Example 1 can, of course, further be provided in addition to the arms 15.

[0038] The other configurations and workings/effects of Example 2 are roughly the same as those in Example 1 and will therefore not be described.

Example 3

[0039] Example 3 will next be described. The same or equal portions in terms of contents as those described in Examples 1 and 2 have the same reference characters in the description of Example 3.

[0040] The shoe heel cover 1 according to Example 3 primarily differs from the shoe heel cover 1 according to Example 1 in that the heel cover 1 extends to a toe section of the shoe S, and that a toe cover 16 is provided at the front end of the heel cover 1 to also prevent wear of the toe section, as shown in Figure 6. The bottom surface of the toe cover 16 can be thicker than the other extending section of the heel cover 1 in consideration of wear.

[0041] The configuration described above can prevent wear of an outsole section of the toe section of the shoe S. Further, latching the heel cover 1 to the shoe S in such a way that the toe cover 16 covers the toe allows an increase in the strength at which the heel cover 1 is attached to the shoe S, whereby the entire heel cover 1 is unlikely to be detached from the shoe S.

[0042] The other configurations and workings/effects of Example 3 are roughly the same as those in Example 1 and will therefore not be described.

Example 4

[0043] Example 4 will next be described. The same or equal portions in terms of contents as those described in Examples 1 to 3 have the same reference characters in the description of Example 4. The shoe heel cover 1 according to Example 4 primarily differs from the shoe heel cover 1 according to Example 1 in that the heel cover 1 is configured to cover the entire circumference of the shoe S, and that the heel cover 1 includes an overhanging section 17 having a waterproof function, as shown in Figures 7 and 8.

[0044] In other words, the heel cover 1 according to the present example is configured to cover not only the heel section S1 of the shoe S but the portion from a foot arch section to a toe section so that heel cover 1 covers the entire sole (outsole section) of the shoe S. In addition, the heel cover 1 according to the present example includes the overhanging section 17, which is curved in-

ward at the upper end of the L-letter-shaped latching section 12 and protrudes in the form of eaves, as shown in the cross-sectional view of Figure 8. The front end of the overhanging section 17 preferably extends inward beyond an imaginary position of the upper section of the shoe S in the state in which the heel cover 1 is not fitted to the shoe S, so that the overhanging section 17 is so deformed as to come into intimate contact with the upper section with no gap therebetween in the state in which the heel cover 1 is fitted to the shoe S.

[0045] The configuration described above can prevent not only wear of the entire sole of the shoe S but entry of water via the sole of the shoe S to enhance the waterproofness of the shoe S. Further, since the overhanging section 17 is provided, the overhanging section 17 is in contact with the upper section and other sections of the shoe S with no gap therebetween, whereby the prevention of entry of water, for example, via the upper section can enhance the waterproofness of the shoe S.

[0046] The other configurations and workings/effects of Example 4 are roughly the same as those in Example 1 and will therefore not be described.

Example 5

[0047] Example 5 will next be described. The same or equal portions in terms of contents as those described in Examples 1 to 4 have the same reference characters in the description of Example 5.

[0048] The shoe heel cover 1 according to Example 5 primarily differs from the shoe heel cover 1 according to Example 1 in that the heel cover 1 is configured to cover the entire shoe S including an upper section 18, as shown in Figure 9. The upper section 18, which corresponds to the instep, is provided with a cutout 18a, and belts 19 are each laid over the portion between the opposite sides of the cutout 18a and fastened and fixed with a snap 19a. In other words, the heel cover 1 according to the present example is configured to cover not only the heel section S1 of the shoe S but the upper section 18 corresponding to the instep so that heel cover 1 covers the entire shoe S.

[0049] The configuration described above can prevent not only wear of the entire sole of the shoe S but entry of water via the sole and the side surface of the shoe S to enhance the waterproofness of the shoe S. Further, also covering the upper section 18 of the shoe S prevents entry of water via the upper section 18 to further enhance the waterproofness of the shoe S. In addition, since the entire shoe S is fitted into the heel cover 1, the heel cover 1 is unlikely to be detached, and fixing the heel cover 1 with the belts 19 and the snaps 19a further causes the heel cover 1 to be unlikely to be detached.

[0050] The other configurations and workings/effects are roughly the same as those in Example 1 and will therefore not be described.

Example 6

[0051] Example 6 will next be described with reference to Figures 10 to 13. The same or equal portions in terms of contents as those described in Examples 1 to 5 have the same reference characters in the description of Example 6.

[0052] The shoe heel cover 1 according to Example 6 is configured to include a fitting section 11 that has a semi-cylindrical shape and is detachably fitted to the semi-cylindrical heel section S1, as shown in Figure 10. The shape of the shoe heel cover 1 is not limited to a shape roughly similar to the shape of the heel section S1 of the shoe S, as will be described later. The fitting section 11 includes a bottom surface section 31 and a side surface section 32. The fitting section 11 has air grooves 41 formed in the inner surface of the fitting section 11, and air that travels from the bottom surface section 31 to the side surface section 32 passes through the air grooves 41. The bottom surface 31 of the fitting section 11 (inner surface facing upward when heel cover is attached to shoe) includes a plurality of suckers 13, ... facing upward to increase the adhesion between the bottom surface 31 of the fitting section 11 and the heel section S1. The heel cover 1 according to the present example further includes a relatively large, triangular tongue-shaped section 21 and is bonded to the shoe sole via a double-sided tape 210 glued to the tongue-shaped section 21. In place of the double-sided tape 210, it is also preferable to bond the heel cover 1 to the shoe sole, for example, via a viscous, sticky agent or suckers. Further, a double-sided tape, a viscous, sticky agent, or suckers can be glued to the entire upper surface of the tongue-shaped section 21.

[0053] The air grooves 41 are so formed as to be continuous from the bottom surface section 31 to the side surface section 32. The air grooves 41 are so formed that the height thereof gradually decreases with distance to the upper side of the side surface section 32, as shown in Figures 11(a) and 11(b). The configuration described above forms an air outlet when the suckers 13 suck the shoe sole, so that a negative pressure state is likely to be created in the suckers 13, whereby the degree of intimate contact between the heel cover 1 and the shoe S can be increased. Further, since an upper portion of each of the air grooves 41 is so tapered as to be shallower, and the upper end of each of the air grooves 41 is not open, preventing entry of rainwater and other substances into the heel cover 1 from above. In addition to the above, the upper edge of the side surface section 32 is so tapered toward the interior of the heel cover 1 as to be thinner.

[0054] The air grooves 41 in the present example further includes a plurality of air grooves 41, ... into which the central air groove 41 branches off leftward and rightward and which extend obliquely upward. The configuration described above allows the air to be likely to exit via the plurality of branching air grooves 41, Further, the right and left branching air grooves 41 each have a

downward wedge shape, which causes the heel cover 1 to be unlikely to be detached in the state in which the inner surface of the fitting section 11 being in contact with the outer surface of the heel section S1. The air grooves 41 do not each necessarily have the branching shape described above and may be formed only of the central air groove 41 or may have any other shape. Further, the branching air grooves 41 can be so formed as to extend obliquely downward or laterally (horizontally).

[0055] The plurality of suckers 13, ... are higher in the vicinity of the outer circumference of the bottom surface section 31 and lower in the vicinity of the center of the bottom surface section 31, as shown in Figure 12. The configuration described above allows a load exerted from the heel section S1 of the shoe S to be roughly uniformly distributed over and received by the entire bottom surface section 31, whereby a greater number of suckers 13 contribute to an increase in the degree of the intimate contact between the shoe S and the heel cover 1.

[0056] It is also preferable that the three-dimensional shape of the bottom surface section 31 is so formed that the center thereof and therearound is raised in advance toward the interior of the heel cover 1 into a convex shape, as shown in Figure 15. The convex shape of the bottom surface section 31 improves the overall degree of fitting (fitness) when the heel cover 1 is fitted to the heel section S1 with the bottom surface section 31 stretched. That is, in the case where the bottom surface section 31 is formed in a convex shape in advance, the shape of the bottom surface section 31 approaches a planar shape when the bottom surface section 31 is stretched, resulting in better fitness between the heel cover 1 and the heel section S1.

[0057] It is further preferable that the plurality of suckers 13, ... are so placed as to have random heights in the bottom surface section 31, as shown in Figure 15. That is, a specific sucker 13 is surrounded by suckers 13 having different heights. The configuration described above allows any of the suckers 13 to suck the bottom surface of the heel section S1 having a variety of patterns, whereby the intimate contact between the shoe S and the heel cover 1 can be similarly enhanced for the entire variety of patterns.

[0058] Further, in the present example, the heel cover 1 is so formed that a convex portion having one shoe sole pattern corresponds to two suckers 13, 13. Instead, one convex portion may correspond to three suckers 13, 13, 13, or one convex portion may correspond to one sucker 13. Conversely, one sucker 13 may correspond to two convex portions, or one sucker 13 may correspond to three convex portions. In addition, the correspondence between the number of suckers 13 and the number of corresponding convex portions may be arbitrarily determined. In detail, the height, depth, and width of the suckers and the height and width of the convex portion of a shoe sole pattern may be arbitrarily determined. For example, in a case where the suckers 13 have three different heights, three different depth, and three different widths, there are $3 \times 3 \times 3 = 27$ sucker combinations, and

a larger number of combinations are conceivable in consideration of the positions of the suckers relative to the heel section S1. Further, a still larger number of combinations are conceivable in consideration of the combinations of the suckers 13 and the above-mentioned convex portions each having a sole pattern. In addition, the material of the heel cover 1 may vary on a location basis.

[0059] In addition, the side surface section of the shoe heel cover 1 preferably has a circular or elliptical planar shape, as shown in Figure 13. In this case, the circular or elliptical heel cover 1 is made of a material having adequate elasticity. Further, the elliptic shape is so sized that the outer perimeter of the heel cover 1 is one size shorter than the outer perimeter of the heel section S1. The configuration described above allows the heel cover 1 to be stretched and attached to the heel section S1 with no gap (intimately).

[0060] A plurality of protruding pieces 51, ..., which serve as positioning means, are so formed in the vicinity of the upper edge of the side surface section 32 on the side close to the front of the fitting section 11 as to be adjacent to each other in the circumferential direction, as shown in Figures 13(a) and 3(b). The protruding pieces 51 as the positioning means, which are disposed in the vicinity of the positions corresponding to the front-side corners of the heel section S1 of the shoe S, can define the positional relationship with the heel section S1 of the shoe S. The protruding pieces 51 further have the function of preventing rotation of the heel cover 1 relative to the heel section S1. Moreover, the plurality of protruding pieces 51, ... disposed as described above allow the heel cover 1 to be used with a variety of heel sections S1 of the shoe S.

[0061] In Figure 13(a), the protruding pieces 51 are each drawn as a right-angled triangle, but not necessarily, and may have any shape. The protruding pieces 51 may each have a semi-circular shape, as shown, for example, in Figure 13(b). The side surface section 32 on the side close to the front of the fitting section 11 is preferably provided with a plurality of cutouts 52 as the positioning means, as shown in Figure 13(c). In this case, the cutouts 52 do not need to pass through the sidewall in the upward/downward direction, and it is also preferable to provide only a heightwise portion of the sidewall with the cutouts 52, as shown in Figure 13(d). The configuration described above prevents entry and exit of air via the cutouts 52 to allow the degree of vacuum to be maintained. This point holds true for Figures 13(a) and 13(b), and the protruding pieces 51 can be provided throughout the entire height of the sidewall or partially provided in heightwise halfway positions on the sidewall.

[0062] Further, the case where the side surface section has an elliptical shape in the plan views has been described with reference to Figure 13(a), but not necessarily. It is also preferable that the side surface section is formed in a "semi-cylindrical shape with no corners" or a "semi-cylindrical shape with rounded corners (or "quadrangular shape with rounded corners")," as

shown in the lower portion of Figure 14. Forming the side surface section in a "semi-cylindrical shape with no corners" allows the heel cover 1 to be fitted in an arbitrary position relative to the heel section S1. The front edge (upper edge in Figure 14) and the side edges (right and left edges in Figure 14) of the "semi-cylindrical shape with no corners" may or may not each have a straight portion and can each be formed in an arcuate shape with no straight portion.

[0063] The reason for this is that a "(typical) semi-cylindrical shape (with corners)" possibly causes the corners of the semi-cylindrical shape to protrude if the size of the heel section S1 differs from the size of the heel cover 1, as shown in the upper and middle portions of Figure 14. Specifically, in a case where the heel cover 1 is narrow in the lateral direction and long in the longitudinal direction as compared with the heel section S1, the right and left portions of the front edge protrude in the form of ears, as shown in the upper portion of Figure 14. On the other hand, in a case where the heel cover 1 is wide in the lateral direction and short in the longitudinal direction as compared with the heel section S1, the front portions of the side edges protrude rightward and leftward in the form of ears, as shown in the middle portion of Figure 14. In these cases, the heel cover 1 does not conform to the heel section S1, and the heel cover 1 possibly comes off the heel section S1 because the inside air leaks out through the ear-shaped gaps or water enters the heel cover 1. Further, since the protruding ear-shaped portions are likely to latch to an external structure, so that the safety of the wearer who is walking could be compromised, and the heel cover 1 is more likely to come off the heel section S1. In contrast, the heel cover 1 according to the present embodiment, which has corners rounded in advance, can prevent the corners from protruding.

[0064] The other configurations and workings/effects are roughly the same as those in Example 1 and will therefore not be described.

Example 7

[0065] Example 7 will next be described with reference to Figures 16 to 18. The same or equal portions in terms of contents as those described in Examples 1 to 6 have the same reference characters in the description of Example 7.

(Configuration)

[0066] The shoe heel cover 1 according to Example 7 is characterized in that an outsole section 60, which forms the outer surface of the bottom surface section 31, includes a bellows 62, as shown in Figure 16. That is, the outsole section 60 includes a patterned section 61, which serves as cleats, such as those in related art, and the bellows 62, which causes the entire bottom surface section 31 to extend in the in-plane direction of the bottom

surface section 31.

[0067] The bellows 62 has a bellows-shaped (accordion-shaped, zigzag) cross section formed of a plurality of protrusions and recesses along the direction from the center of the bottom surface section 31 toward the outer circumference thereof, as shown in the cross-sectional view of Figure 20. The heel cover 1 including the bellows 62, when it is entirely made of a flexible (elastic) material, can extend or contract in the in-plane direction of the bottom surface section 31 from the center toward the outer circumference thereof.

[0068] The bellows 62 preferably has a shape in the plan view similar to the shape in the plan view (shape of outer circumferential portion) of the bottom surface section 31, as shown in Figure 16. Specifically, in the case where the bottom surface section 31 has a quadrangular outer shape with rounded corners, the bellows 62 is preferably formed also in a quadrangular shape with rounded corners in the vicinity of the outer edge of the bottom surface section 31. The shape of the bellows 62 may not be similar to the outer shape of the bottom surface section 31, as will be described later. In addition, a variety of variations of the shape of the bellows 62 and the number thereof are conceivable, as will be described below.

(Variation 1)

[0069] For example, it is also preferable that a first bellows 62 and a second bellows 62a form double bellows 62 and 62a, as shown in a variation shown in Figure 17. Specifically, the outsole section 60 of the heel cover 1 is preferably formed of the outer first bellows 62 and the inner second bellows 62a. A patterned section 61 is formed between the first bellows 62 and the second bellows 62a. Further, as another aspect in accordance with which the present invention is implemented, only the inner (second) bellows (62a) may be provided, and the outer (first) bellows (62) may not be provided. The configuration described above is advantageous in that the bellows (62a) can be placed in a position excluding the vicinity of the outer circumference of the outsole section 60, which is likely to wear.

(Variation 2)

[0070] Further, roughly cross-shaped bellows 62b and 62c can also be formed, as in a variation shown in Figure 18. Specifically, the outsole section 60 of the heel cover 1 is preferably formed of the vertical bellows 62b, which ensures expansion in the horizontal direction, the horizontal bellows 62c, which ensures expansion in the vertical direction, and the patterned section 61, which is divided into four. In addition to the above, the combination of bellows similar to each other (62, 62a) and cross-shaped bellows (62b, 62c) is also conceivable.

(Workings and effects)

[0071] Workings and effects provided by the heel cover 1 according to the present example will next be described.

(1) The outsole section 60 of the bottom surface section 31 of the fitting section 11 of the heel cover 1 according to the present example includes the bellows 62, which has a shape roughly similar to the shape of the bottom surface section 31 in the plan view so that the bottom surface section 31 readily extends and contracts in the in-plane direction thereof. The heel cover 1 is therefore likely to extend in the in-plane direction of the bottom surface section 31, whereby the heel cover 1 is likely to conform to the heel section S1 of the shoe S.

In this case, the double bellows 62 and 62a can also be placed. The double bellows 62 and 62a allow the heel cover 1 to further readily extend and contract, whereby the heel cover 1 is more likely to conform to the heel section S1 of the shoe S.

(2) The outsole section 60 of the bottom surface section 31 of the fitting section 11 preferably includes the roughly cross-shaped bellows 62b and 62c so that the bottom surface section 31 readily extends and contracts in the in-plane direction thereof. The heel cover 1 is therefore likely to extend in the in-plane direction of the bottom surface section 31, whereby the heel cover 1 is likely to conform to the heel section S1 of the shoe S.

[0072] The other configurations and workings/effects are roughly the same as those in Example 1 and will therefore not be described.

[0073] An embodiment for implementing the present invention has been described in detail with reference to the drawings and based on Examples 1 to 6, but the specific configuration of the embodiment is not limited to those in Examples 1 to 6, and a change in design to the extent that the change does not depart from the substance of the present invention falls within the scope of the present invention.

[0074] For example, above Examples 1 to 6 have been described with reference only to the case where the heel cover 1 is used as part of a shoe S used by men, but not necessarily, and can, or course, be used as part of a shoe used by women. In addition, the heel cover 1 can be used as part of child shoes, boots, and other shoes. Further, the heel cover 1 can be used as part of boots used by men and women.

[0075] Example 1 has been described with reference to the case where the heel cover 1 fitted to the heel section S1 includes the L-letter-shaped latching section 12, but not necessarily, and may include an I-letter-shaped cross section having no latching section. Conversely, Example 4 has been described with reference to the case where the heel cover 1 has the L-letter-shaped cross

section with the latching section 12 provided along the entire circumference thereof, but not necessarily, and may have having an I-letter-shaped cross section having no latching section provided along the entire circumference thereof. Further, for example, in a case where the heel cover 1 is used as part of sandals having a wedge sole, the combination of an L-letter-shaped cross section and an I-letter-shaped cross section can be used along the entire circumference of the heel cover 1, for example, the front side has an L-letter-shaped cross section, and the rear side has an I-letter-shaped cross section.

[0076] Example 6 has been described with reference to the case where the side surface section is provided with the air grooves 41, but not necessarily, and the side surface section may be provided with no air groove 41. In this case, the vacuum state can be maintained in two stages. That is, the plurality of suckers 13, ... can maintain the vacuum state in a redundant manner, and the side surface section that surrounds the entire bottom surface section can achieve a vacuum state all over the entire bottom surface section. Further, frictional force produced between the inner surface of the side surface section and the outer surface of the heel section S1 also causes the heel cover 1 to be unlikely to be detached.

[0077] In a case where the heel section S1 has a concave shape or the heel section S1 and the fitting section 11 differ from each other in size, a gap is undesirably created between the heel cover 1 and the heel section S1, as shown in Figure 19. To fill the gap, the heel cover 1 preferably further includes an adjustment member 70. The adjustment member 70 is made of the same material as that of the fitting section 11 and is so formed as to have a thin semi-cylindrical cross section with one side surface formed of a flat surface and the other side surface formed of a cylindrical surface. The adjustment member 70 is preferably roughly flush with the heel section S1 in the height direction. The shape and size of the adjustment member 70 are not limited to those described above and can be another shape and size.

[0078] It is also preferable that the adjustment member 70 is bonded to the heel cover (main body) 1, for example, with an adhesive. Further, instead of providing the adjustment member 70 as a separate member, it is also preferable to provide an adjustment member 71 (dashed line in Figure 19) integrally molded with the heel cover 1 in advance.

Reference Signs list

[0079]

1:	Shoe heel cover
11:	Fitting section
12:	Latching section
13:	Sucker
14:	Sucker having inverted scale of fish
15:	Arm
16:	Toe cover

17: Overhanging section
 18: Upper section
 18a: Cutout
 19: Belt
 19a: Snap
 31: Bottom surface section
 41: Air groove
 51: Protruding piece
 60: Outsole section
 61: Patterned section
 62: Bellows
 62a to 62d: Bellows
 70: Adjustment member
 S: Shoe
 S0: Shoe body
 S1: Heel section

Claims

1. A shoe heel cover for a shoe formed of a shoe body and a heel section, comprising:
 a fitting section detachably fitted to the heel section.
2. The shoe heel cover according to claim 1, further comprising a latching section that latches to a stepped section formed between the shoe body and the heel section.
3. The shoe heel cover according to claim 1 or 2, wherein the shoe heel cover comprises one or more suckers at least in a bottom surface section of the fitting section.
4. The shoe heel cover according to any one of claims 1 to 3, wherein the shoe heel cover comprises a sucker having an inverted scale of a fish on a side surface of the fitting section.
5. The shoe heel cover according to any one of claims 1 to 4, wherein the fitting section is further provided with means for joining the fitting section to the heel section of the shoe.
6. The shoe heel cover according to any one of claims 1 to 5, further comprising an arm that latches to the shoe body.
7. The shoe heel cover according to any one of claims 1 to 6, wherein
 the fitting section has a bottom surface section and a side surface section, and
 an air groove through which air travels from the bottom surface section to the side surface section is formed in the fitting section.
8. The shoe heel cover according to claim 7, wherein the air groove is so formed that a height thereof grad-

ually decreases with distance to an upper side of the side surface section to prevent entry of water from above via the air groove.

9. The shoe heel cover according to claim 3, wherein a plurality of suckers are provided in the bottom surface section of the fitting section, and that the plurality of suckers are higher in a vicinity of an outer circumference of the bottom surface section and lower in a vicinity of a center of the bottom surface section.
10. The shoe heel cover according to any one of claims 1 to 9, wherein the fitting section includes positioning means for defining a positional relationship with respect to the heel section of the shoe.
11. The shoe heel cover according to any one of claims 1 to 10, wherein
 the fitting section includes a bottom surface section and a side surface section, and
 a shape of the side surface section in a plan view is a circular shape, an elliptical shape, a semi-cylindrical shape having no corners, a semi-cylindrical shape having rounded corners, or a quadrangular shape having rounded corners.
12. The shoe heel cover according to claim 3, wherein a plurality of suckers are provided in the bottom surface section of the fitting section, and that the plurality of suckers are so placed as to have random heights in the bottom surface section.
13. The shoe heel cover according to any one of claims 1 to 12, wherein a bellows is formed in the bottom surface section of the fitting section so that the bottom surface section readily extends and contracts in an in-plane direction thereof.
14. The shoe heel cover according to claim 13, wherein a shape of the bellows is so formed as to be roughly similar to a shape of the bottom surface section in the plan view.
15. The shoe heel cover according to claim 13, wherein the bellows is so formed as to be a roughly cross-shaped bellows.
16. The shoe heel cover according to any one of claims 1 to 15, further comprising an adjustment member pushed into a gap between the heel section and the fitting section to fill the gap.

Fig. 1

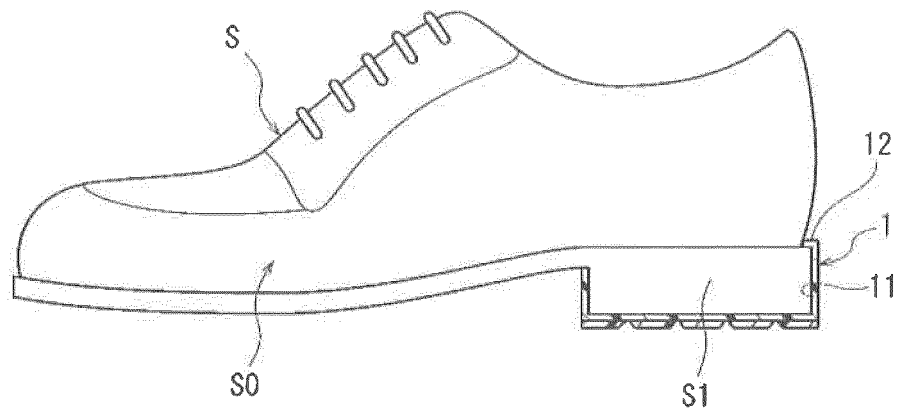


Fig. 2

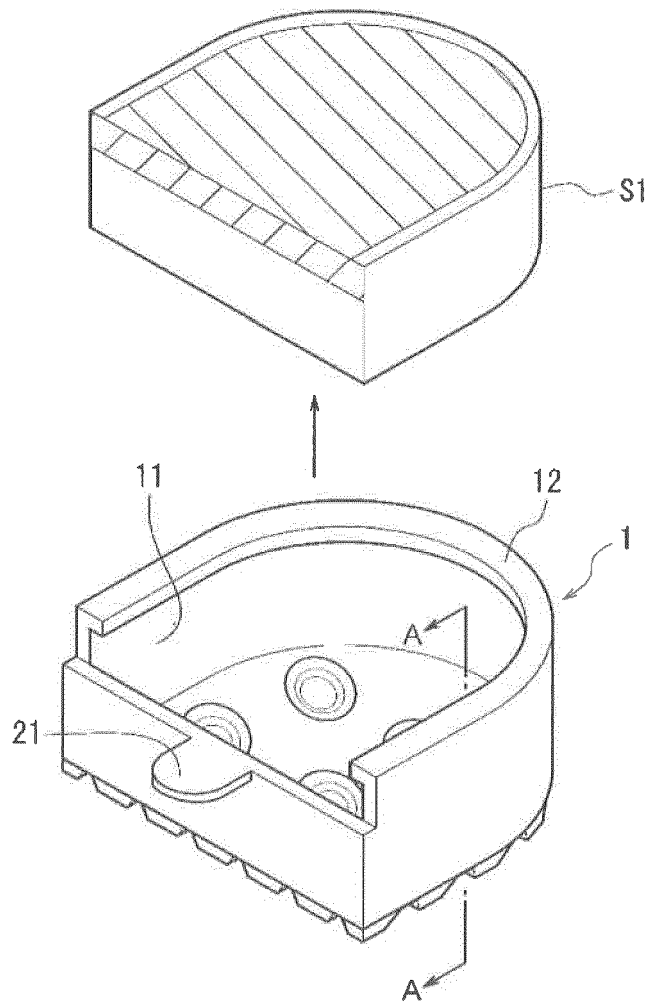


Fig. 3

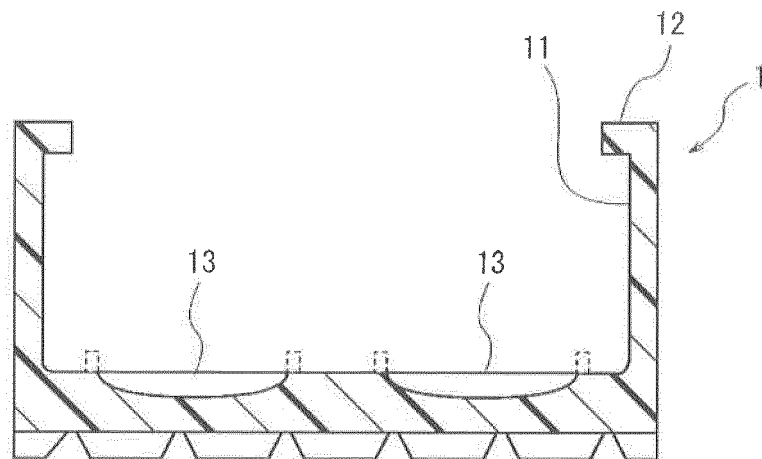


Fig. 4

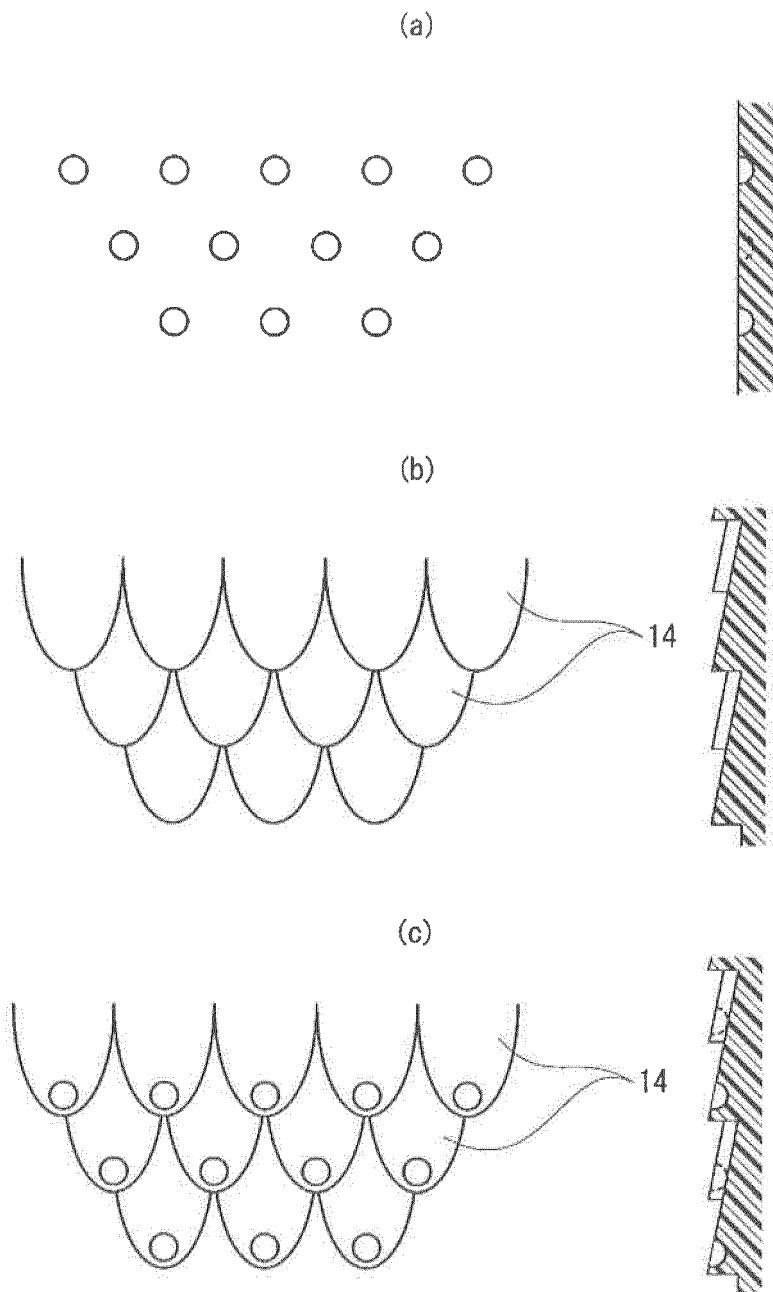


Fig. 5

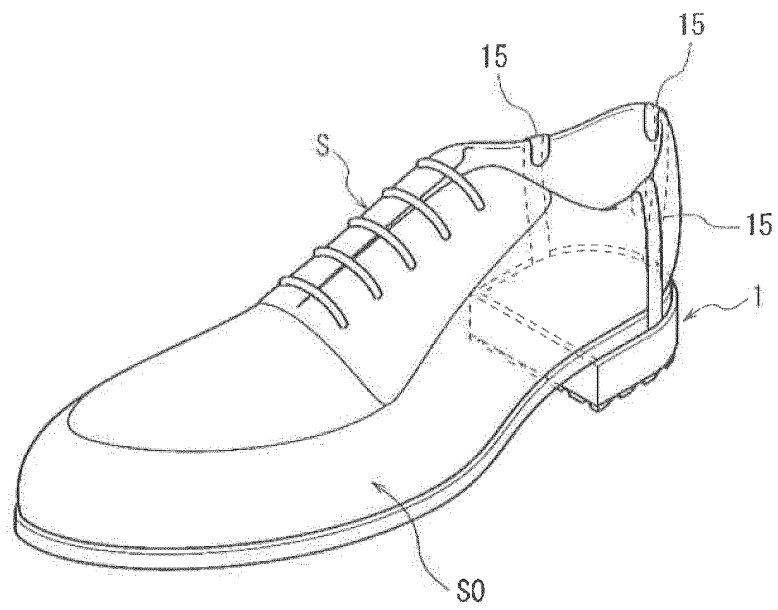


Fig. 6

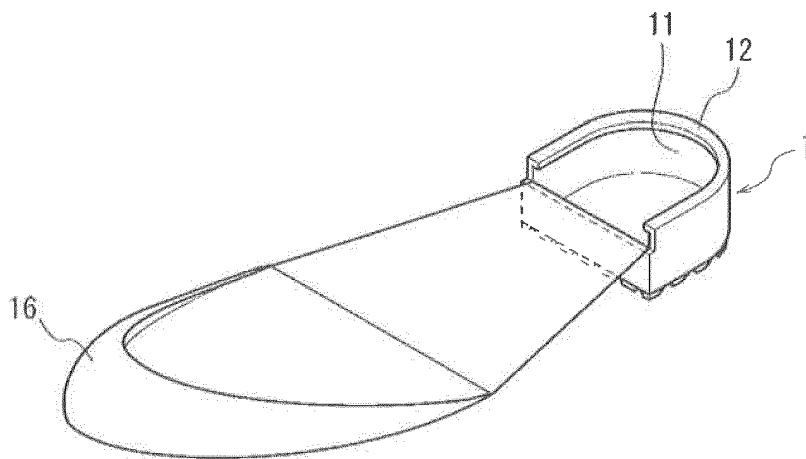


Fig. 7

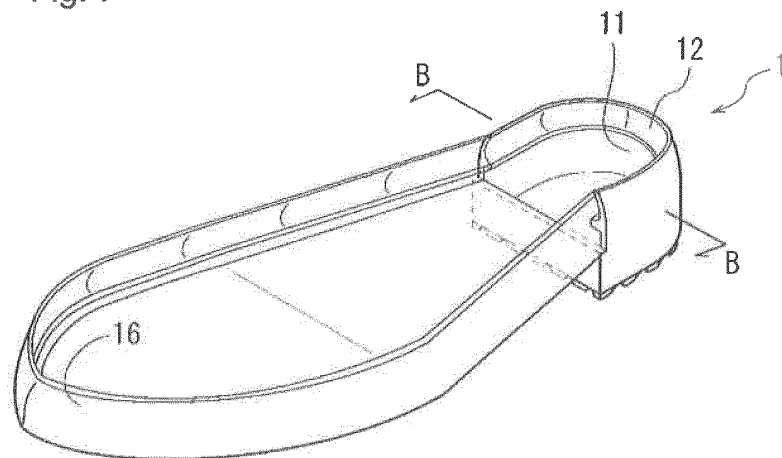


Fig. 8

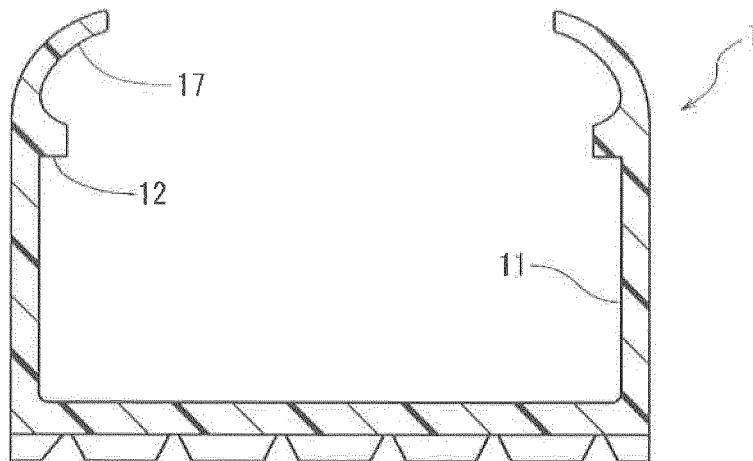


Fig. 9

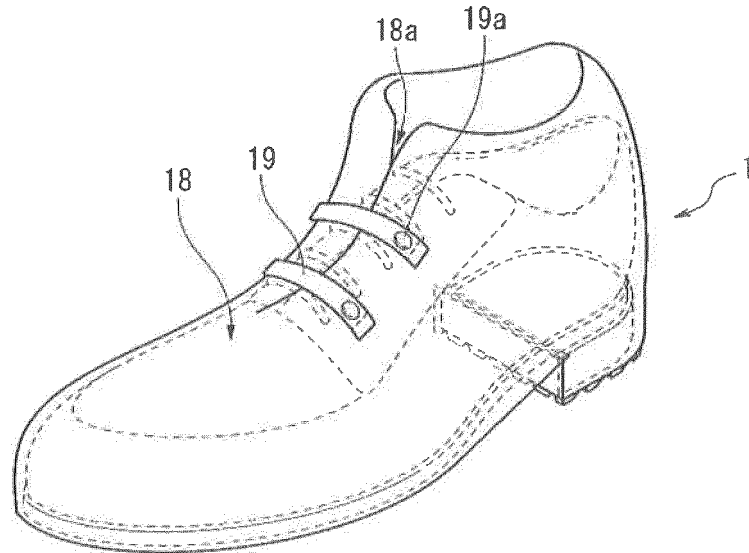


Fig. 10

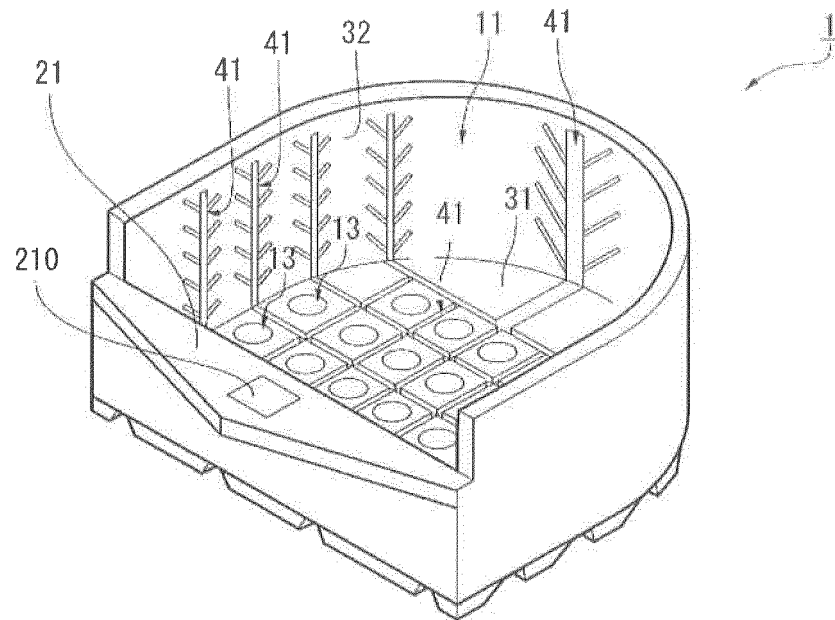


Fig. 11

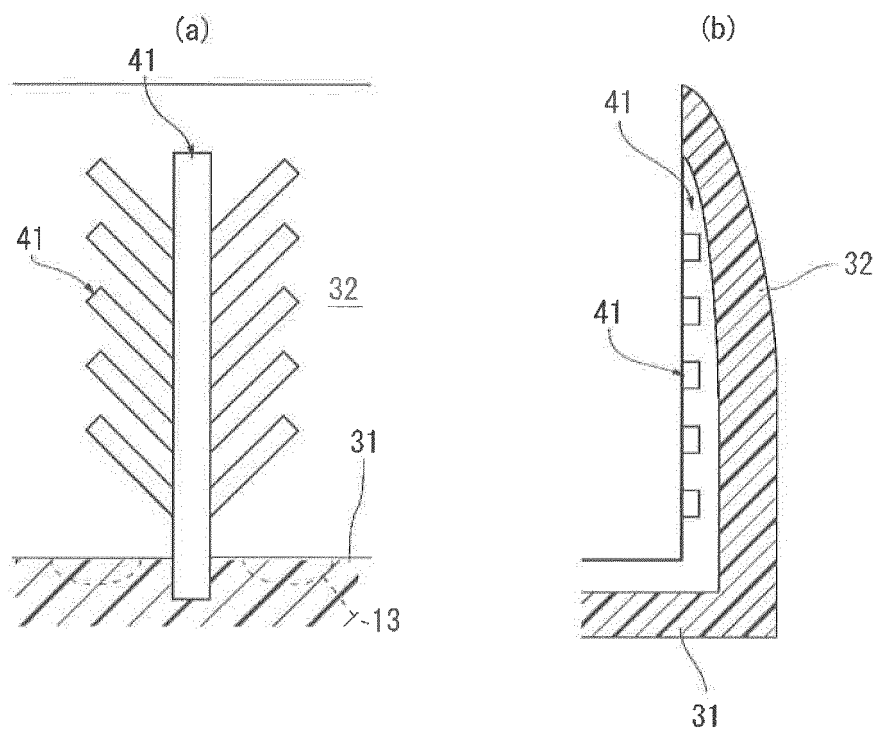


Fig. 12

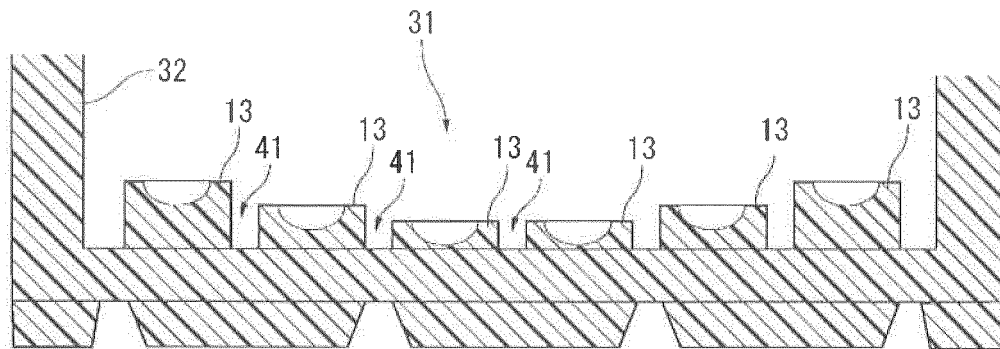


Fig. 13

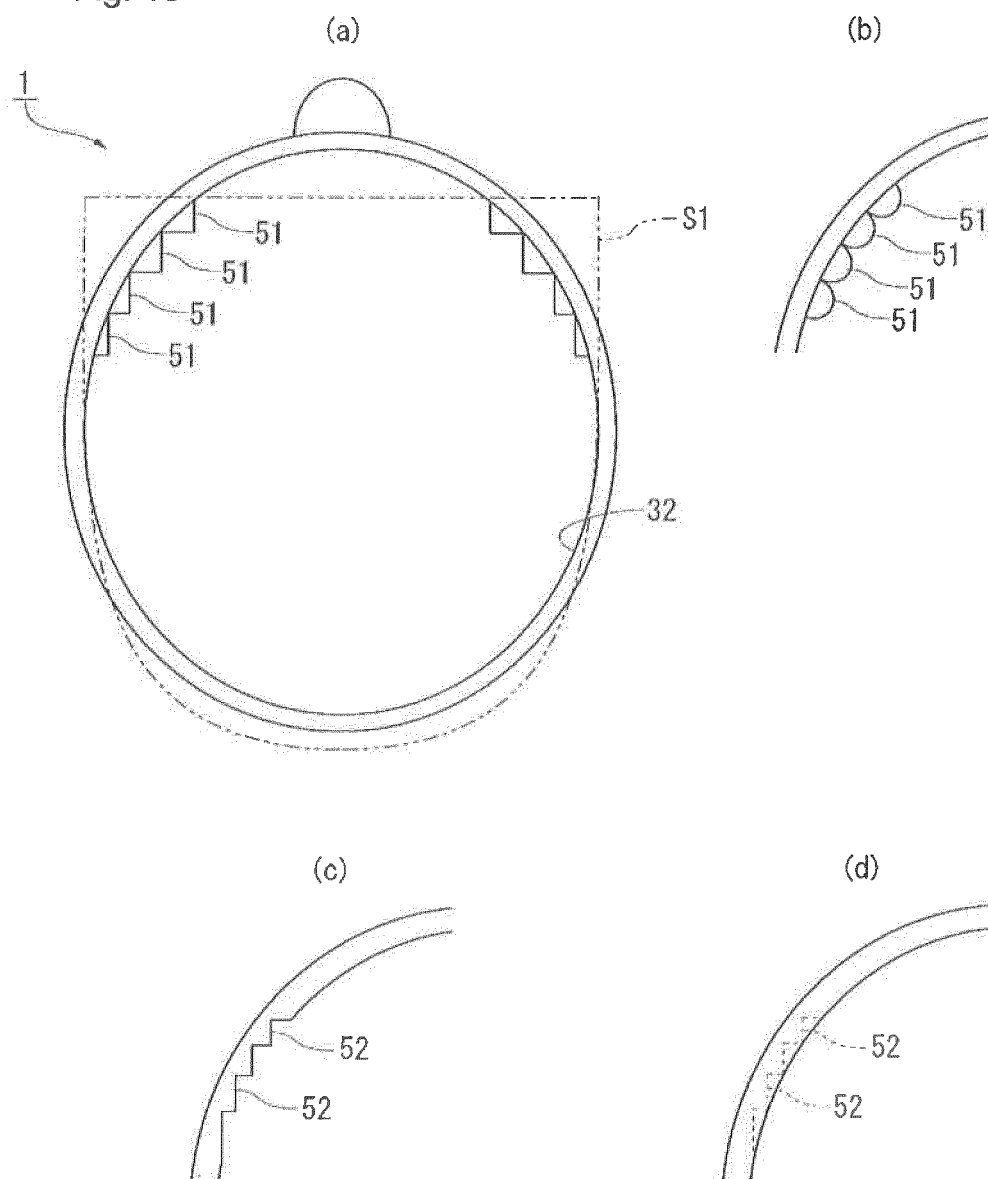


Fig. 14

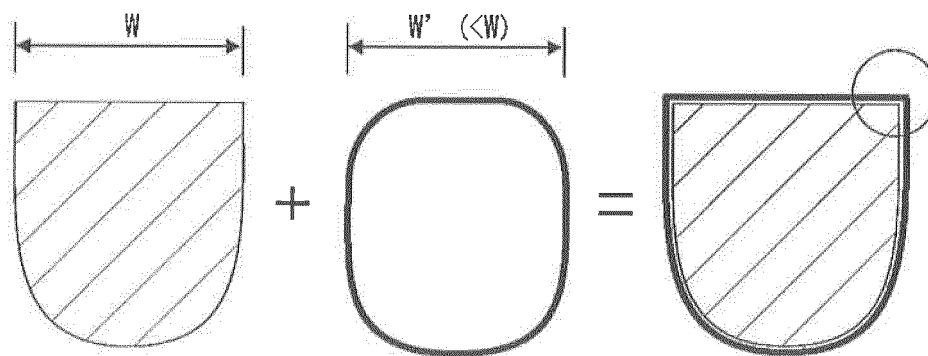
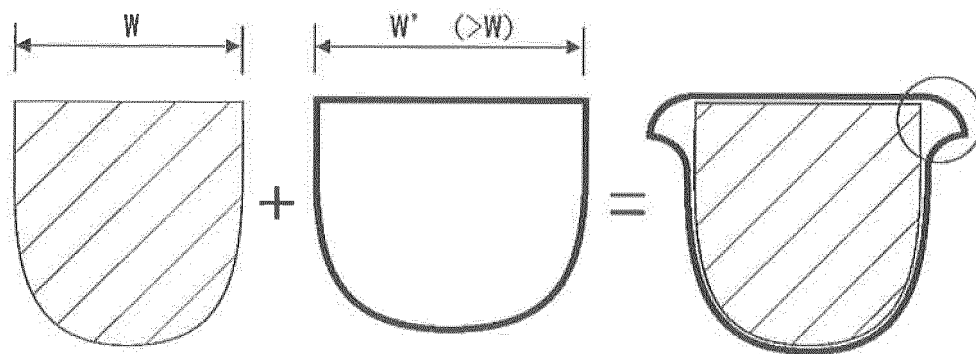
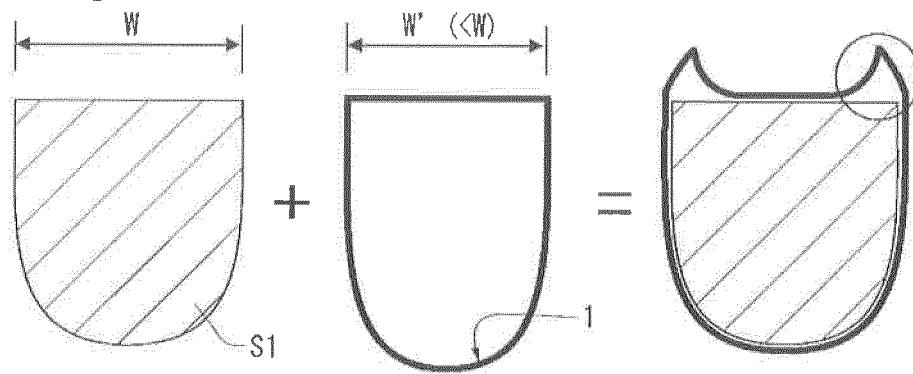


Fig. 15

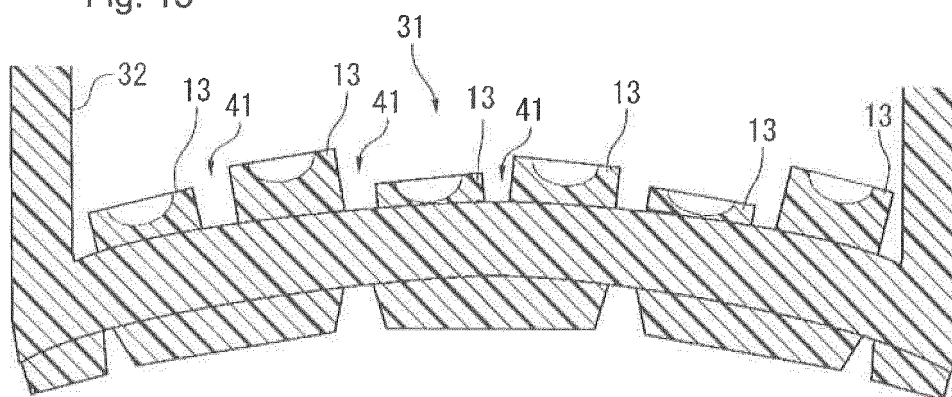


Fig. 16

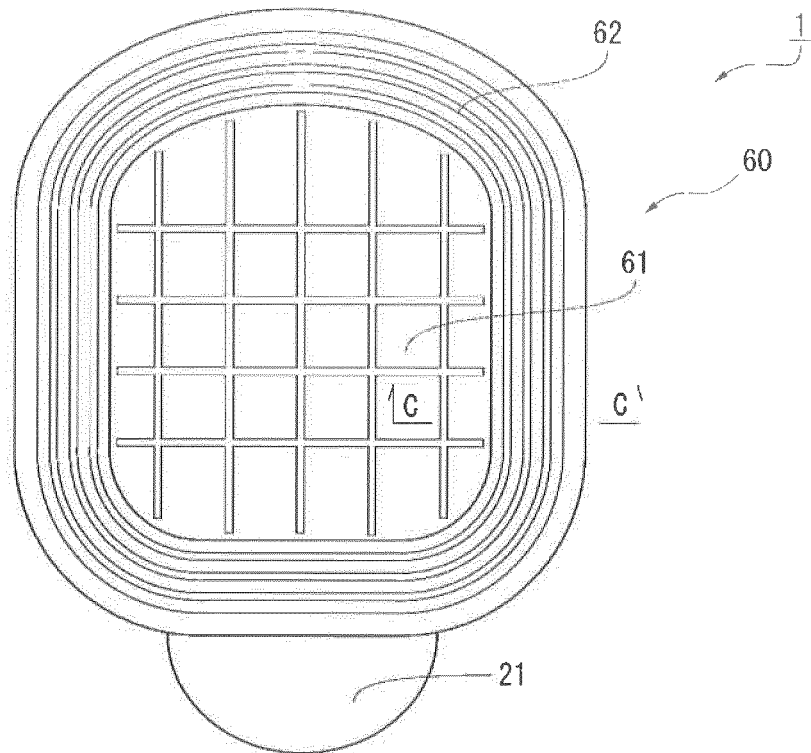


Fig. 17

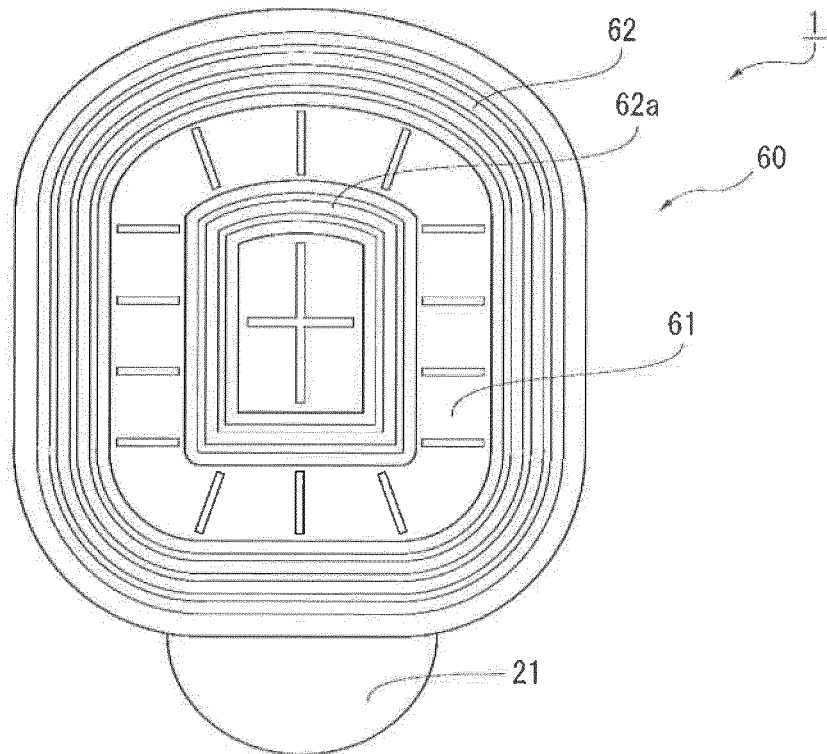


Fig. 18

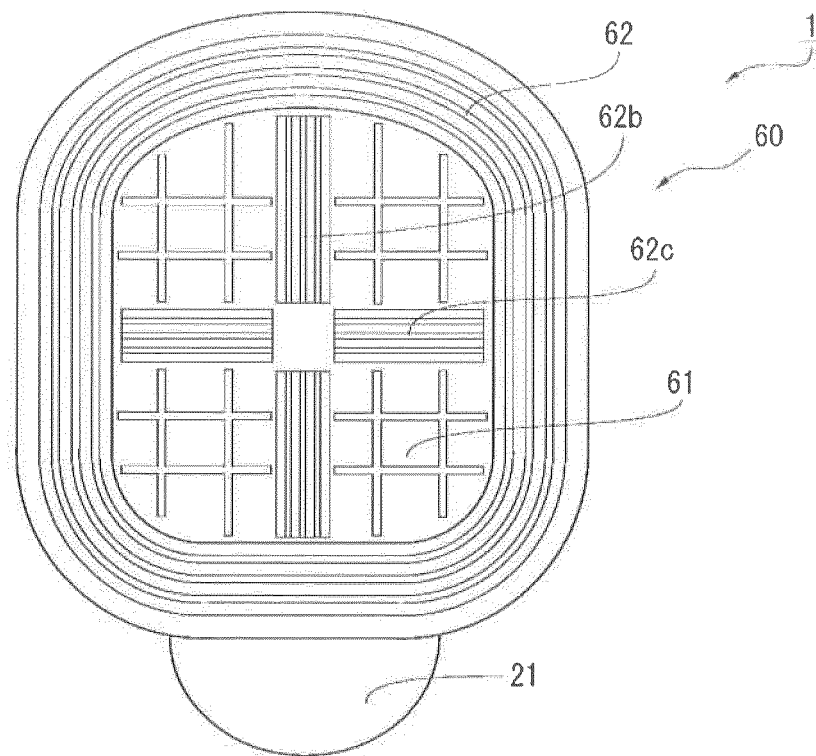


Fig. 19

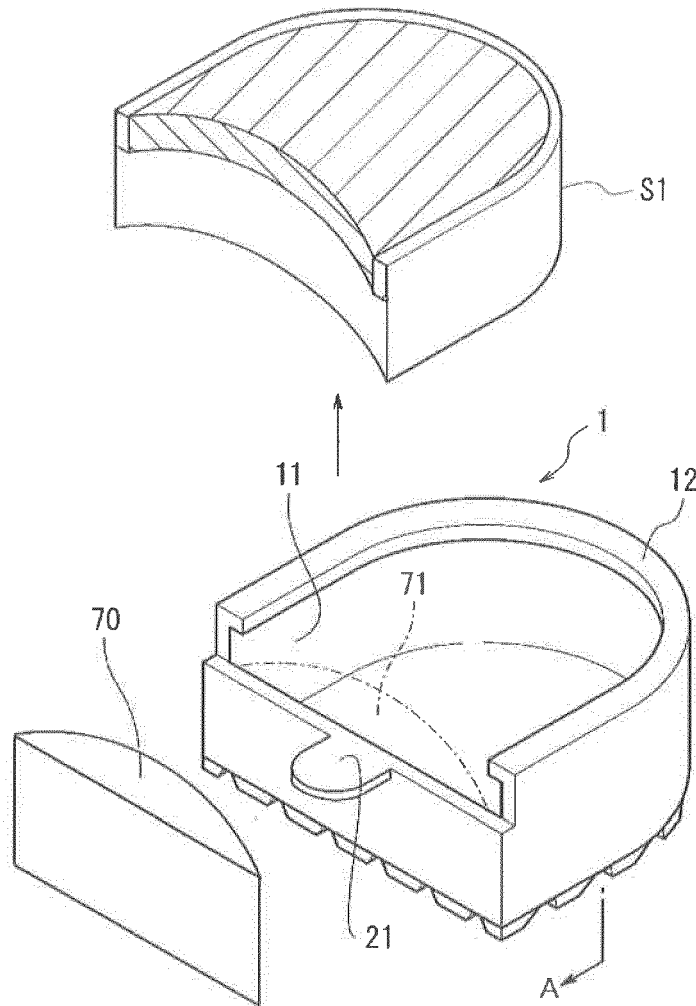
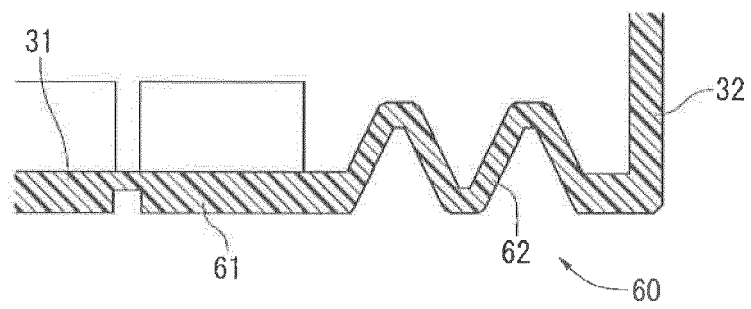


Fig. 20



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2018/000130

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl. A43B13/36 (2006.01) i, A43B21/42 (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)

Int.Cl. A43B13/36, A43B21/42

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 1971-2018

Registered utility model specifications of Japan 1996-2018

Published registered utility model applications of Japan 1994-2018

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.
X Y A	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 170736/1982 (Laid-open No. 75110/1984) (YOSHIHARA, Kazuhiko) 22 May 1984, page 1, line 1 to page 7, line 9, fig. 1-7 (Family: none)	1 2-7, 9-16 8



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
17 April 2018 (17.04.2018)Date of mailing of the international search report
01 May 2018 (01.05.2018)Name and mailing address of the ISA/
Japan Patent Office
3-4-3, Kasumigaseki, Chiyoda-ku,
Tokyo 100-8915, Japan

Authorized officer

Telephone No.

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2018/000130

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 162945/1975 (Laid-open No. 74827/1977) (NARIHARA, Takeshi) 04 June 1977, page 2, line 8 to page 4, line 14, fig. 1-3 (Family: none)	1-2 2-7, 9-16 8
X Y A	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 050935/1977 (Laid-open No. 146450/1978) (OSAKA GLASS CO., LTD.) 17 November 1978, page 2, line 19 to page 9, line 4, fig. 1-4 (Family: none)	1 2, 7, 10-11, 13-16 3-6, 8-9, 12
X Y A	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 76337/1990 (Laid-open No. 34907/1992) (TAKEOKA, Reiko) 24 March 1992, page 1, line 1 to page 4, line 16, fig. 1-4 (Family: none)	1 2 3-16

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- JP 6082905 A [0004]