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(54) **TOILET FOOTREST**

(57) A toilet footrest according to an embodiment comprises: a left footrest on which a user's left foot is placed; a right footrest on which the user's right foot is placed; and a connecting frame connecting the left footrest and the right footrest to each other, wherein each of the left footrest and the right footrest locates the front and rear portions of the user's sole at different heights, and the connecting frame includes a coupling groove vertically coupled to a groove formed in an outer wall of each of the left footrest and the right footrest. In addition, the toilet footrest may further comprise a height adjustment layer coupled to the lower end of a base layer of each of the left footrest and the right footrest in order to adjust a height at which the user's foot is placed.

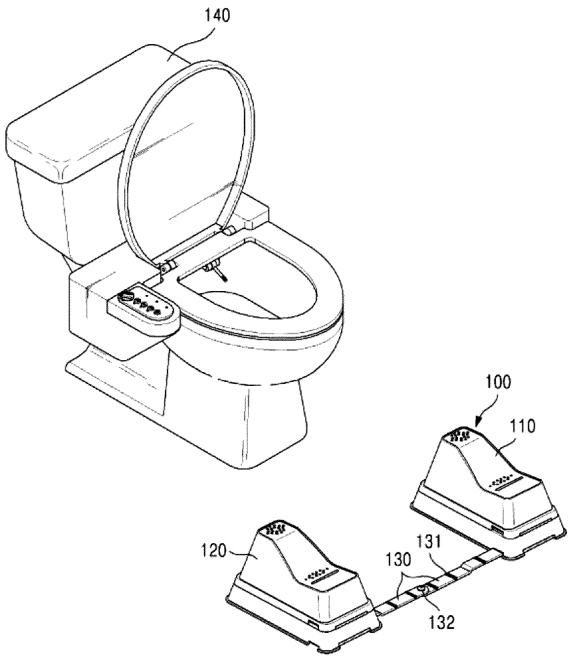

FIG.1

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Description

[TECHNICAL FIELD]

[0001] Embodiments of the inventive concepts described herein relate to a toilet footrest, and more particularly, relate to a toilet footrest for a user who uses a toilet.

[BACKGROUND ART]

[0002] A sitting toilet that is widely used in recent years has been designed to allow the user to sit on the sitting toilet and defecate. In this case, since the user uses the sitting toilet at a defecation posture in which an angle between thighs and an upper body increases, the puborectalis muscles of the user remain in a contracted state.

[0003] Accordingly, the puborectalis muscles of the user are not relaxed and remain in the contracted state, and this causes adefecationdisorder or constipation in which there is a difficulty in defecating comfortably.

[0004] Therefore, embodiments described hereafter suggest a toilet footrest that induces the defecation posture to relax the puborectalis muscles of the user and promotes defecation.

[DETAILED DESCRIPTION OF THE INVENTION]

[TECHINICAL PROBLEM]

[0005] Embodiments of the inventive concepts provide a toilet footrest that induces the defecation posture to relax the puborectalis muscles of the user using squatting effects.

[0006] In detail, embodiments of the inventive concepts provide a toilet footrest that allows front and rear portions of a user's sole to be at different heights in the defecation posture and uses the squatting effects.

[0007] In addition, embodiments of the inventive concepts provide a toilet footrest that is in close contact with the user's sole to prevent the user's sole from slipping in the defecation posture.

[0008] In addition, embodiments of the inventive concepts provide a toilet footrest that controls heights at which a user's foot is placed in the defecation posture.

[0009] In addition, embodiments of the inventive concepts provide a toilet footrest that controls at least one of a width or angle between the user's feet in the defecation posture.

[0010] Particularly, embodiments of the inventive concepts provide a toilet footrest that prevents a connecting frame from being separated when the user uses the toilet footrest after each of left and right footrests is connected to the connecting frame.

[TECHNICAL SOLUTION]

[0011] One aspect of embodiments of the inventive concept is directed to provide a toilet footrest including a left footrest on which a user's left foot is placed, a right footrest on which a user's right foot is placed, and a connecting frame connecting the left footrest and the right footrest to each other. Each of the left footrest and the right footrest locates front and rear portions of a user's sole at different heights, and the connecting frame includes a coupling groove vertically coupled to a groove formed in an outer wall of each of the left footrest and the right footrest.

[0012] The coupling groove may be provided in a plural number, and the coupling grooves are formed on the connecting frame to adjust a width between the left footrest and the right footrest.

[0013] Each of the left footrest and the right footrest includes a first support member supporting a front portion of the user's sole, a second support member supporting an intermediate portion of the user's sole, anda third support member supporting a rear portion of the user's sole, and the first support member has a height lower than a height of the third support member.

[0014] The second support member is inclined and formed to connect the first support member and the third support member.

[0015] The second support member may have a curved shape to be in close contact with the intermediate portion of the user's sole.

[0016] At least one of the first support member, the second support member, or the third support member may include a protrusion formed on a surface thereof to prevent the user's sole from slipping.

[0017] At least one of the first support member or the third support member may be formed substantially parallel to a ground.

[0018] The first support member may be formed to be slightly inclined with respect to the ground based on a bending angle of the front portion of the user's sole.

[0019] The first support member may include an anti-slipping bump to prevent the front portion of the user's sole from slipping.

[0020] Each of the left footrest and the right footrest may further include a height adjustment layer coupled to a lower end of a base layer,on which the first support member, the second support member, and the third support member are disposed, to adjust a height at which the user's foot is placed.

[0021] The height adjustment layer may be in a plural number, and the height adjustment layers are coupled to the lower end of the base layer.

[0022] The coupling groove may be vertically coupled to a groove formed in an outer wall of the height adjustment layer.

[0023] Each of the left footrest and the right footrest further may include a slipping preventing member coupled to a bottom surface of each of the left footrest and the right footrest to prevent the left footrest and the right footrest from slipping.

[0024] The connecting frame includes at least one frame to adjust at least one of a width or an angle between

the left footrest and the right footrest.

[0025] In a case where the connecting frame includes a plurality of frames, the frames may be hinge-coupled to each other.

[0026] Another aspect of embodiments of the inventive concept is directed to provide a toilet footrest includinga footrest on which left and right feet of a user are placed, and portions of the footrest, on which the left and right feet are respectively placed, are integrally formed with each other without being separated from each other. The footrest includes a first support member supporting a front portion of the user's sole, a second support member supporting an intermediate portion of the user's sole, anda third support member supporting a rear portion of the user's sole. The front and rear portions of the user's sole are located at different heights from each other by the first support member, the second support member, and the third support member.

[ADVANTAGEOUS EFFECTS OF THE INVENTION]

[0027] Embodiments may provide the toilet footrest to induce the defecation posture that relaxes the puborectalis muscles of the user by using the squatting effects.

[0028] In detail, embodiments may provide the toilet footrest using the squatting effects by locating the front and rear portions of the user's sole at different heights from each other in the defecation posture.

[0029] Accordingly, embodiments may provide the toilet footrest that promotes the defecation of the user who sits on the toilet.

[0030] In addition, embodiments may provide the toilet footrest that isin close contact with the user's sole in the defecation posture to prevent the user's sole from slipping.

[0031] In addition, embodiments may provide the toilet footrest that adjusts the height at which the user's foot is placed in the defecation posture.

[0032] In addition, embodiments may provide the toilet footrest that adjusts at least one of the width or angle between the user's feet in the defecation posture.

[0033] Accordingly, embodiments may provide the toilet footrestthat increases the user's convenience in the process of inducing the defecation posturepromoting defecation.

[0034] In particular, embodiments may provide the toilet footrest that prevents the connecting frame from being separated when the user uses the toilet footrest after each of the left and right footrests is coupled to the connecting frame.

[DESCRIPTION OF THE DRAWINGS]

[0035]

FIG. 1 is a view showing a toilet footrest disposed with respect to a toilet according to an embodiment;
FIG. 2 is a view showing a toilet footrest according to an embodiment;
FIGS. 3A to 3C are views showing a base layer included in a toilet footrest according to an embodiment;
FIG. 4 is a view illustrating a height adjustment layer included in a toilet footrest according to an embodiment;
FIG. 5A is a view showing a connecting frame included in a toilet footrest according to an embodiment;
FIG. 5B is a view illustratinga structure in which the connecting frame is connected to each of left and right footrests; and
FIG. 6 is a view showing a slipping prevention member included in a toilet footrest according to an embodiment.

[BEST MODE]

[0036] Hereinafter, embodiments according to the present inventive concept will be described in detail with reference to accompanying drawings. However, the present inventive concept should not be limited to the embodiments. In addition, the same reference numerals in each drawing denote the same elements.

[0037] In addition, terminologies used in the present disclosure are for the purpose of describing particular embodiments only and is not intended to be limiting of the inventive concept and may be changed according to users, operator's intention or custom of the field to which the present inventive concept pertains. Therefore, the definitions of the terminologies should be made according to throughout the present disclosure.

[0038] FIG. 1 is a view showing a toilet footrestdisposed with respect to a toilet according to an embodiment;

[0039] Referring to FIG. 1, the toilet footrest 100 according to the embodiment may include a left footrest 110, a right footrest 120, and a connecting frame 130 connecting the left footrest 110 and the right footrest120 to each other and may be located at a position at which user's left and right feet are placed when the user sits on the toilet 140.

[0040] For example, when the user sits on the toilet 140, the user's left foot may be placed on the left footrest 110 of the toilet footrest 100, and the user's right foot may be placed on the right footrest 120 of the toilet footrest 100.

[0041] In this case, the connecting frame 130 includes a coupling groove 131 and may be coupled to each of the left footrest 110 and the right footrest 120. In particular, the coupling groove 131 is provided in a plural number to the connecting frame 130, and thus, a width between the left footrest 110 and the right footrest 120 may be adjusted. In addition, the connecting frame 130 includes a plurality of frames that is connected to each other by a hinge connection 132, and thus at least one of the width or angle between the left footrest 110 and

the right footrest 120 may be adjusted. Hereinafter, the hinge connection 132 means a coupling method in which the frames rotate freely in a horizontal direction with respect to a point of the hinge connection 132, but are prevented from being separated in a vertical or horizontal direction.

[0042] Accordingly, since at least one of the width or angle between the left footrest 110 and the right footrest 120 is adjusted by the connecting frame 130, a position and a direction of each of the left footrest 110 and the right footrest 120 with respect to the toilet 140 may be determined. This will be described in detail with reference to FIGS. 5A and 5B.

[0043] As described above, the toilet footrest 100 disposed at an arbitrary position with respect to the toilet 140 allows front and rear portions of a user's sole to be at different heights from each other, and thus a defecation posture that relaxes the puborectalis muscles of the user using squatting effects is induced. This will be described in detail with reference to FIGS. 3A to 3C.

[0044] FIG. 2 is a view showing a toilet footrest according to an embodiment.

[0045] Referring to FIG. 2, each of a left footrest 210 and a right footrest 220 of a toilet footrest 200 according to the embodiment includes a base layer 230 allowing front and rear portions of the user's sole to be at different heights from each other and a height adjustment layer 240 coupled to a lower end of the base layer 230. Detailed descriptions of the base layer 230 will be described with reference to FIGS. 3A to 3C.

[0046] In this case, the height adjustment layer 240 is adaptively coupled to a lower end of the base layer 230 to adjust the height at which the user's foot is placed, and thus the defecation posture may be induced by taking into account a physical structure, such as a user's height or leg length, of the user who uses the toilet footrest 200. This will be described in detail with reference to FIG. 4.

[0047] In the present embodiment, a connecting frame 250 may connect the height adjustment layer 240 of the left footrest 210 and the height adjustment layer 240 of the right footrest 220 to each other. In a case where only the base layer 230 is disposed after the height adjustment layer 240 of each of the left footrest 210 and the right footrest 220 is removed, the connecting frame 250 may connect the base layer 230 of the left footrest 210 and the base layer 230 of the right footrest 220 to each other.

[0048] In addition, a slipping prevention member 260 may be coupled to a bottom surface of the height adjustment layer 240 of each of the left footrest 210 and the right footrest 220 to prevent the toilet footrest 200 from slipping.

[0049] In this case, the slipping prevention member 260 is coupled to a front side of the bottom surface of the height adjustment layer 240 of each of the left footrest 210 and the right footrest 220 as shown in FIG. 2, however, it should not be limited thereto or thereby. That is, the slipping prevention member 260 may be coupled to a rear side of the bottom surface of the height adjustment layer 240. In addition, the slipping prevention member 260 may be coupled to a front and/or rear side of a bottom surface of the base layer 230 of each of the left footrest 210 and the right footrest 220. This will be described in detail with reference to FIG. 6.

[0050] Although not shown in figures, the toilet footrest may include an integral footrest on which both the left and right feet of the user are placed instead of including the left footrest 210 and the right footrest 220. That is, the one footrest may be integrally formed as a single unitary and individual unit without being divided into a portion on which the user's left foot is placed and a portion on which the user's right foot is placed.

[0051] In this case, also, the integral footrest may include a base layer allowing the front and rear portions of the user's sole to be at different heights from each other and a height adjustment layer coupled to a lower end of the base layer. In addition, the slipping prevention member 260 may be coupled to a front and/or rear side of a bottom surface of the height adjustment layer (or the base layer) included in the integral footrest. However, in the case where the toilet footrest includes integral footrest, the toilet footrest does not need to include the connecting frame 250.

[0052] FIGS. 3A to 3C are views showing a base layer included in a toilet footrest according to an embodiment. In more detail, FIG. 3A is a perspective view showing the base layer, FIG. 3B is a top view showing the base layer, and FIG. 3C is a side view showing the base layer.

[0053] Referring to FIGS. 3A to 3C, each of left and right footrests 300 included in the toilet footrest according to the embodiment may include a first support member 310 supporting a front portion of the user's sole, a second support member 320 supporting an intermediate portion of the user's sole, and a third support member 330 supporting a rear portion of the user's sole.

[0054] Hereinafter, the front portion of the user's sole means a ball of the user's foot, the rear portion of the user's sole means a heel of the user's foot, and the intermediate portion of the user's sole means a portion between the ball and the heel of the user's foot.

[0055] In particular, since the first support member 310 is formed to have a height lower than that of the third support member 330 in each of the left and right footrests 300, the front and rear portions of the user's sole are located at different heights from each other, and thus the squatting effects may be acquired. Accordingly, each of the left and right footrests 300 may induce the defecation posture that relaxes the puborectalis muscles of the user using the first support member 310 and the third support member 330.

[0056] In addition, since the first support member 310 is formed to have the height lower than that of the third support member 330 in each of the left and right footrests 300, a user's convenience may be increased in the process of inducing the defecation posture that relaxes the puborectalis muscles of the user.

[0057] For instance, the second support member 320

is formed obliquely to connect the first support member 310 and the third support member 330 to each other, and thus the second support member 320 may stably support the intermediate portion of the user's sole. In addition, the second support member 320 may be formed in a curved shape to be in close contact with the intermediate portion of the user's sole.

[0058] As another example, a protrusion may be formed on a surface of at least one of the first support member 310, the second support member 320, and the third support member 330 to prevent the user's sole from slipping. In this example, the protrusion may provide the user with not only the slipping prevention effect but also an acupressure effect to the user's sole. Further, the first support member 310 may include an anti-slipping bump 311 to prevent the front portion of the user's sole from slipping.

[0059] As another example, the first support member 310 and the third support member 330 may be formed substantially parallel to a ground so that the user may feel a sense of stability.

[0060] As another example, the first support member 310 may be formed to be slightly inclined with respect to the ground based on a bending angle of the front portion of the user's sole instead of being formed parallel to the ground, and thus the user may feel the sense of the stability, and the front portion of the user's sole may be prevented from slipping due to a shift of center of gravity.

[0061] In addition, in the case where the toilet footrest includes the integral footrest on which both of the left and right feet are placed instead of including the left footrest and the right footrest, which are separated from each other, the integra footrest may include the first support member 310 supporting the front portion of the user's sole, the second support member 320 supporting the intermediate portion of the user's sole, and the third support member 330 supporting the rear portion of the user's sole. In this case, the first support member 310, the second support member 320, and the third support member 330 included in the integral footrest have the same structure and function as those of the first support member 310, the second support member 320, and the third support member 330 included in each of the left and right footrests 300, and thus details thereof will be omitted.

[0062] FIG. 4 is a view illustrating a height adjustment layer included in a toilet footrest according to an embodiment.

[0063] Referring to FIG. 4, the height adjustment layer 400 according to the embodiment is coupled to the lower end of the base layer described with reference to FIGS. 3A to 3C to raise the height of the toilet footrest.

[0064] Accordingly, the toilet footrest, which includes the base layer adaptively coupled to or separated from the height adjustment layer 400,may induce the defecation posture of the user by taking into account a physical structure, such as a user's height or leg length, of the user.

[0065] In the above descriptions, one height adjustment layer 400 is included in each of the left and right footrests, but the number of the height adjustment layers 400 should not be limited thereto or thereby. That is, a plurality of height adjustment layers may be included in each of the left and right footrests.

[0066] For example, two height adjustment layers 400 may be provided, a first height adjustment layer may be coupled to the lower end of the base layer, and a second height adjustment layer may be coupled to a lower end of the first height adjustment layer, thereby increasing the height of the toilet footrest even further.

[0067] FIG. 5A is a view showing a connecting frame included in a toilet footrest according to an embodiment.

[0068] Referring to FIG. 5A, a left footrest and a right footrest, which are included in a toilet footrest according to the embodiment, may be connected to each other by the connecting frame 500.

[0069] In the present embodiment, the connecting frame 500 may include at least one frame to adjust at least one of the width or angle between the left footrest and the right footrest.

[0070] For example, the connecting frame 500 may include a plurality of frames 510 and 520 hinge-coupled to each other. Accordingly, the connecting frame 500 may adjust at least one of the width or angle between the left footrest and the right footrest by controlling angles between the frames 510 and 520 hinge-coupled to each other.

[0071] FIG. 5A shows a structure in which two frames 510 and 520 are hinge-coupled to each other to form the connecting frame 500, however, the number of the frames should not be limited to two. That is, three or more frames may be hinge-coupled to each other.

[0072] In addition, the frames 510 and 520 of the connecting frame 500 may have a structure in which a protrusion and a hole are respectively formed in both end portions of each of the frames 510 and 520 and an intermediate portion (the intermediate portion means a remainder portion except for the both end portions) of each of the frames 510 and 520 may bebent. Accordingly, the frames 510 and 520 may be coupled to each other to form the connecting frame 500 without limiting the number of frames.

[0073] In addition, a coupling groove 530 may be formed in the intermediate portion of each of the frames 510 and 520 of the connecting frame 500 to be coupled to at least one of the base layer or the height adjustment layer included in each of the left footrest and the right footrest. Accordingly, the connecting frame 500 may be coupled to at least one of the base layer or the height adjustment layer by the coupling groove 530. This will be described in detail with reference to FIG. 5B.

[0074] FIG. 5B is a view illustrating a structure in which the connecting frame is connected to each of left and right footrests. Hereinafter, a structure in which the connecting frame 500 including one frame is coupled to a left footrest 540 will be described, and the connecting frame 500 may be coupled to a right footrest in the same

way. In addition, the above-described structure may be applied to the connecting frame 500 including the plural frames as shown in FIG. 5A.

[0075] The coupling groove 530 is formed in the connecting frame 500 to be coupled to the left footrest 540, a groove 541 is formed in an outer wall of the left footrest 540, and the groove 541 has an inverted shape to that of the coupling groove 530. Accordingly, the coupling groove 530 of the connecting frame 500 may be vertically coupled to the groove 541 of the left footrest 540, and thus the connecting frame 500 may be coupled to the left footrest 540.

[0076] Therefore, although the user drags the left footrest 540 on a floor and moves the left footrest 540 in every direction after the connecting frame 500 is coupled to the left footrest 540, the connecting frame 500 is not separated from the left footrest 540.

[0077] That is, since the connecting frame500 and the left footrest 540 are coupled to each other by the coupling groove 530 and the groove 541 vertically coupled to the coupling groove 530, the connecting frame 500 may be prevented from being separated from the toilet footrest when the user uses the toilet footrest.

[0078] Similarly, since the coupling groove 530 of the connecting frame 500 is vertically connected to a groove formed in the right footrest, the connecting frame 500 may be coupled to the right footrest.

[0079] In particular, as shown in figures, since the coupling groove 530 is formed in the connecting frame 500 in a plural number, each of the left footrest 540 and the right footrest is arbitrarily coupled to one of the coupling grooves, and a coupling length (a distance between the coupling grooves respectively coupled to the left footrest 540 and the right footrest) may be adjusted.Accordingly, a width between the left footrest 540 and the right footrest may be adjusted.

[0080] In addition, although not shown separately, a groove is formed in an outer wall of a height adjustment layer coupled to a lower end of the left footrest 540, and thus the connecting frame 500 may be coupled to the height adjustment layer in the same way as being coupled to the left footrest 540 (base layer).

[0081] FIG. 6 is a view showing a slipping prevention member included in a toilet footrest according to an embodiment.

[0082] Referring to FIG. 6, the slipping prevention member 600 according to the embodiment is coupled to a bottom surface (at least one of front and rear portions) of at least one of a base layer or a height adjustment layer included in each of left and right footrests to prevent the toilet footrest from slipping.

[0083] Accordingly, the slipping prevention member 600 may have a structure capable of being coupled to or separated from the bottom surface of the base layer or the bottom surface of the height adjustment layer. For instance, a protrusion, which is inserted into a portion (a front or rear portion) of the bottom surface of the base layer or the bottom surface of the height adjustment layer, may be formed on an upper surface of the slipping prevention member 600.

[0084] Similarly, the bottom surface of the base layer and the bottom surface of the height adjustment layer may have a structure supporting the slipping prevention member 600 to be coupled or separated. For instance, a groove may be formed in the front and rear portions of the bottom surface of the base layer and the bottom surface of the height adjustment layer to allow the protrusion formed on the upper surface of the slipping prevention member 600 to be inserted into the groove.

[0085] In addition, the slipping prevention member 600 may be provided in a plural number, and thus the plural slipping prevention members 600 may be coupled to the bottom surface of the base layer or the bottom surface of the height adjustment layer. For example, four slipping prevention members 600 may be respectively coupled to the front portion, the rear portion, and both side portions of the bottom surface of the base layer and the bottom surface of the height adjustment layer. In this case, the slipping prevention member 600 may be formed of a variety of materials that increases a coefficient of friction between the toilet footrest and a surface of the floor in a space where the toilet footrest is used. In addition, a groove or protrusion having a dot, line, or grid shape may be formed in the bottom surface of the slipping prevention member 600 to increase the coefficient of friction between the toilet footrest and the surface of the floor in the space where the toilet footrest is used.

[INDUSTRIAL APPLICABILITY]

[0086] While this disclosure includes specific examples, it will be apparent to one of ordinary skill in the art that various changes in form and details may be made in these examples without departing from the spirit and scope of the claims and their equivalents.

[0087] Therefore, the scope of the disclosure is defined not by the detailed description, but by the claims and their equivalents, and all variations within the scope of the claims and their equivalents are to be construed as being included in the disclosure.

Claims

1. A toilet footrest comprising:

a left footrest on which a user's left foot is placed;
a right footrest on which a user's right foot is placed; and
a connecting frame connecting the left footrest and the right footrest to each other,wherein each of the left footrest and the right footrest locates front and rear portions of a user's sole at different heights, and the connecting frame comprises a coupling groove vertically coupled to a groove formed in an outer wall of each of the left footrest

and the right footrest.

2. The toilet footrest of claim 1, wherein the coupling groove is provided in a plural number, and the coupling grooves are formed on the connecting frame to adjust a width between the left footrest and the right footrest.

3. The toilet footrest of claim 1, wherein each of the left footrest and the right footrest comprises:

a first support member supporting a front portion of the user's sole;
a second support member supporting an intermediate portion of the user's sole; and
a third support member supporting a rear portion of the user's sole, and the first support member has a height lower than a height of the third support member.

4. The toilet footrest of claim 3, wherein the second support member is inclined and formed to connect the first support member and the third support member.

5. The toilet footrest of claim 4, wherein the second support member has a curved shape to be in close contact with the intermediate portion of the user's sole.

6. The toilet footrest of claim 3, wherein at least one of the first support member, the second support member, or the third support member comprises a protrusion formed on a surface thereof to prevent the user's sole from slipping.

7. The toilet footrest of claim 3, wherein at least one of the first support member or the third support member is formed substantially parallel to a ground.

8. The toilet footrest of claim 7, wherein the first support member is formed to be slightly inclined with respect to the ground based on a bending angle of the front portion of the user's sole

9. The toilet footrest of claim 3, wherein the first support member comprises an anti-slipping bump to prevent the front portion of the user's sole from slipping.

10. The toilet footrest of claim 3, wherein each of the left footrest and the right footrest further comprises a height adjustment layer coupled to a lower end of a base layer,on which the first support member, the second support member, and the third support member are disposed, to adjust a height at which the user's foot is placed.

11. The toilet footrest of claim 10, wherein the height adjustment layer is provided in a plural number, and the height adjustment layers are coupled to the lower end of the base layer.

12. The toilet footrest of claim 10, wherein the coupling groove is vertically coupled to a groove formed in an outer wall of the height adjustment layer.

13. The toilet footrest of claim 1, wherein each of the left footrest and the right footrest further comprises a slipping preventing member coupled to a bottom surface of each of the left footrest and the right footrest to prevent the left footrest and the right footrest from slipping.

14. The toilet footrest of claim 1, wherein the connecting frame comprises at least one frame to adjust at least one of a width or an angle between the left footrest and the right footrest.

15. The toilet footrest of claim 14, wherein the connecting frame comprises a plurality of frames, and the frames are hinge-coupled to each other.

16. A toilet footrest comprising:
a footrest on which left and right feet of a user are placed, portions of the footrest, on which the left and right feet are respectively placed, being integrally formed with each other without being separated from each other, the footrest comprising:

a first support member supporting a front portion of the user's sole;
a second support member supporting an intermediate portion of the user's sole; and
a third support member supporting a rear portion of the user's sole, wherein the front and rear portions of the user's sole are located at different heights from each other by the first support member, the second support member, and the third support member.

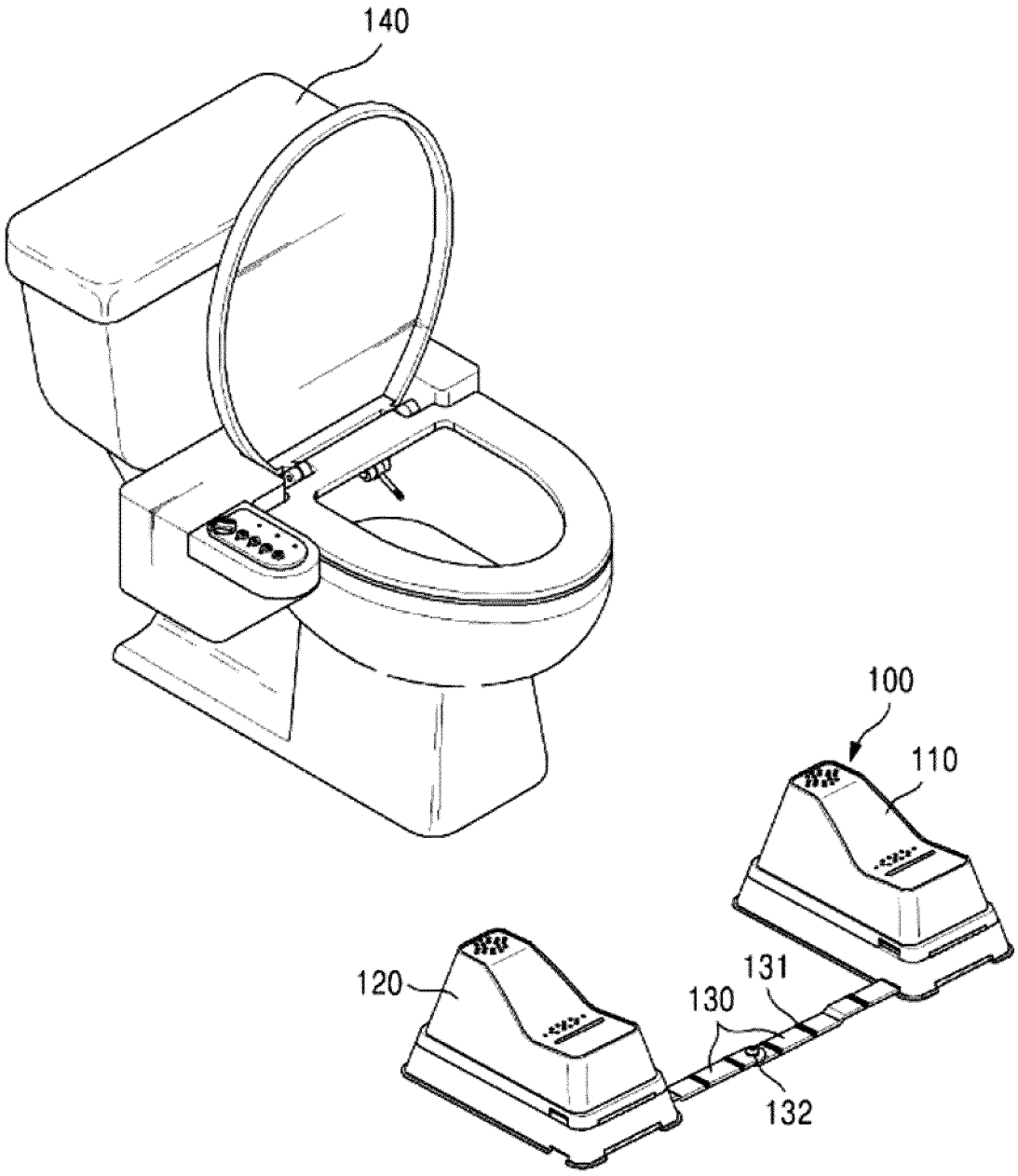

FIG.1

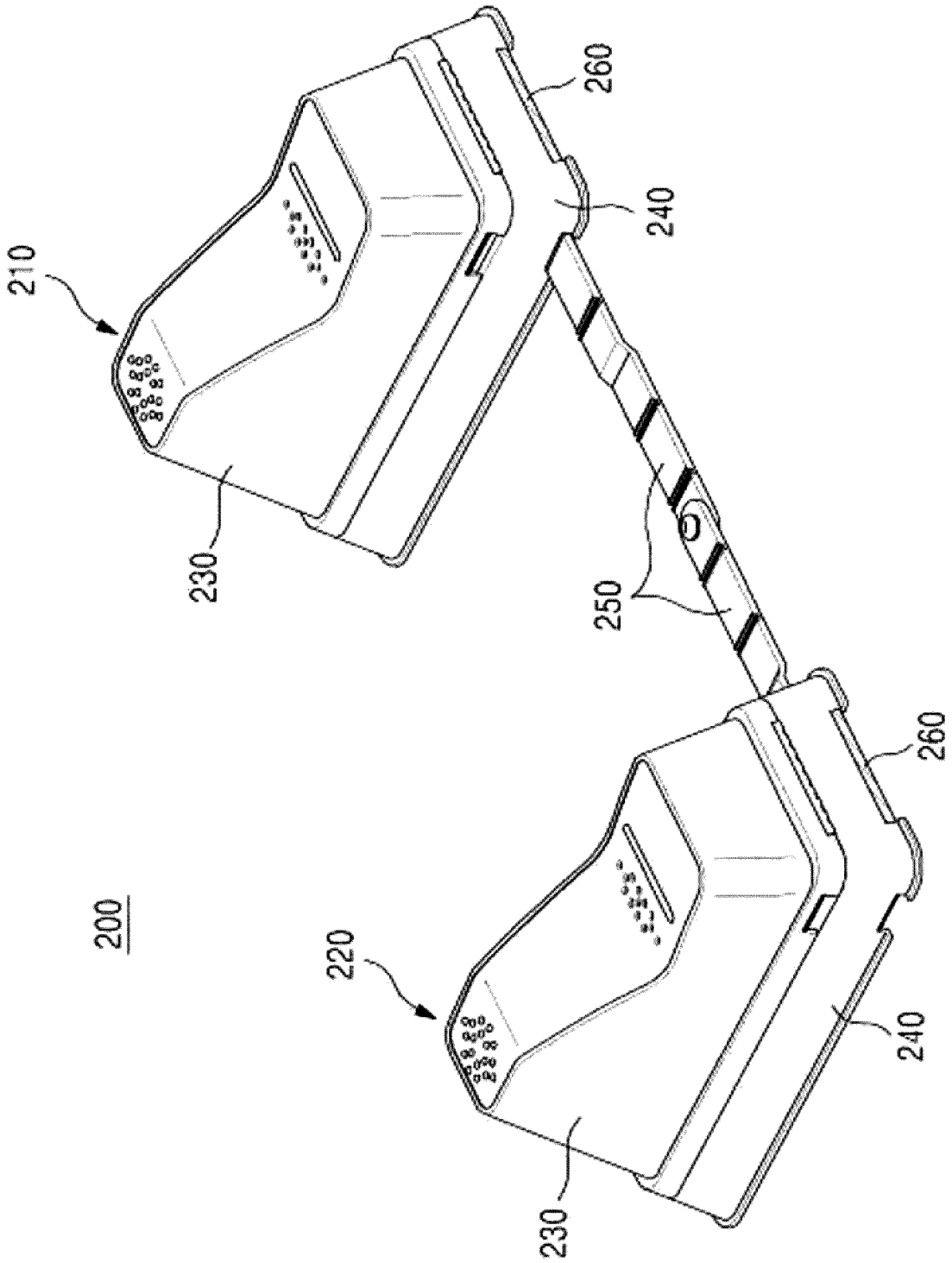

FIG.2

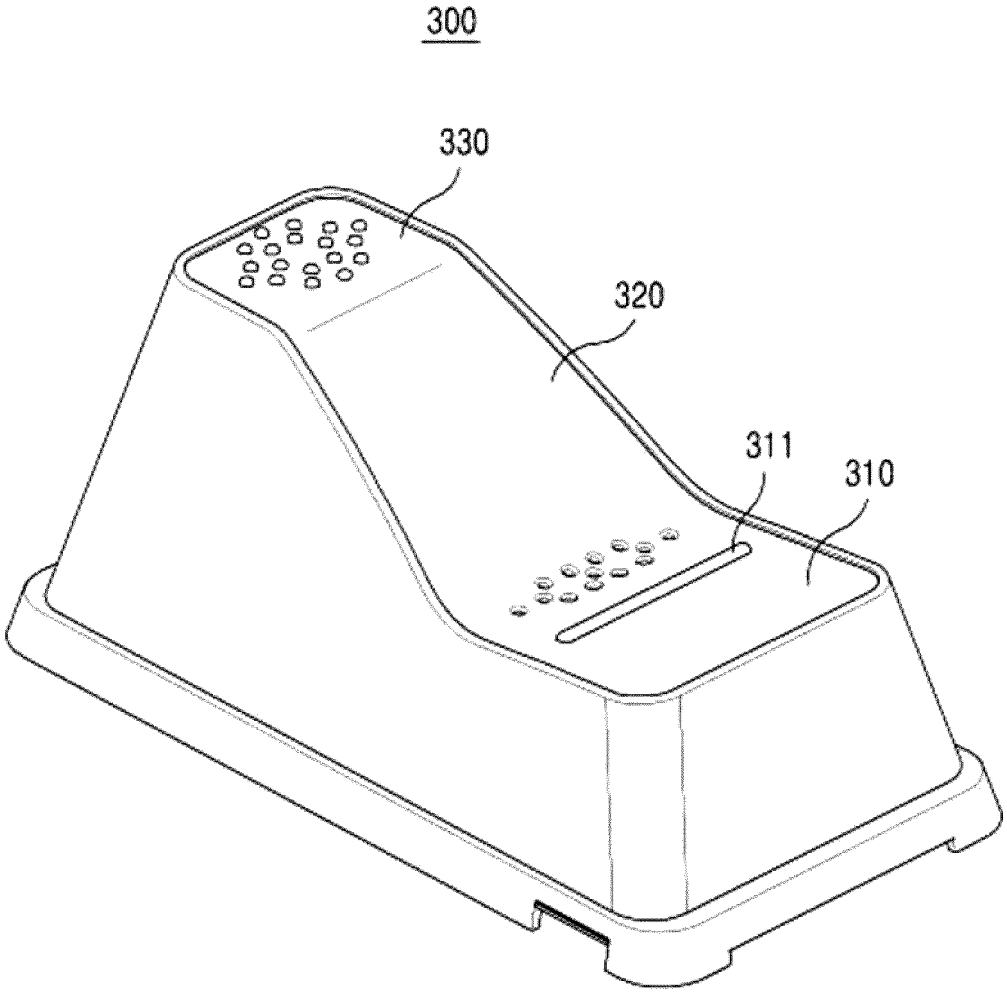

FIG.3a

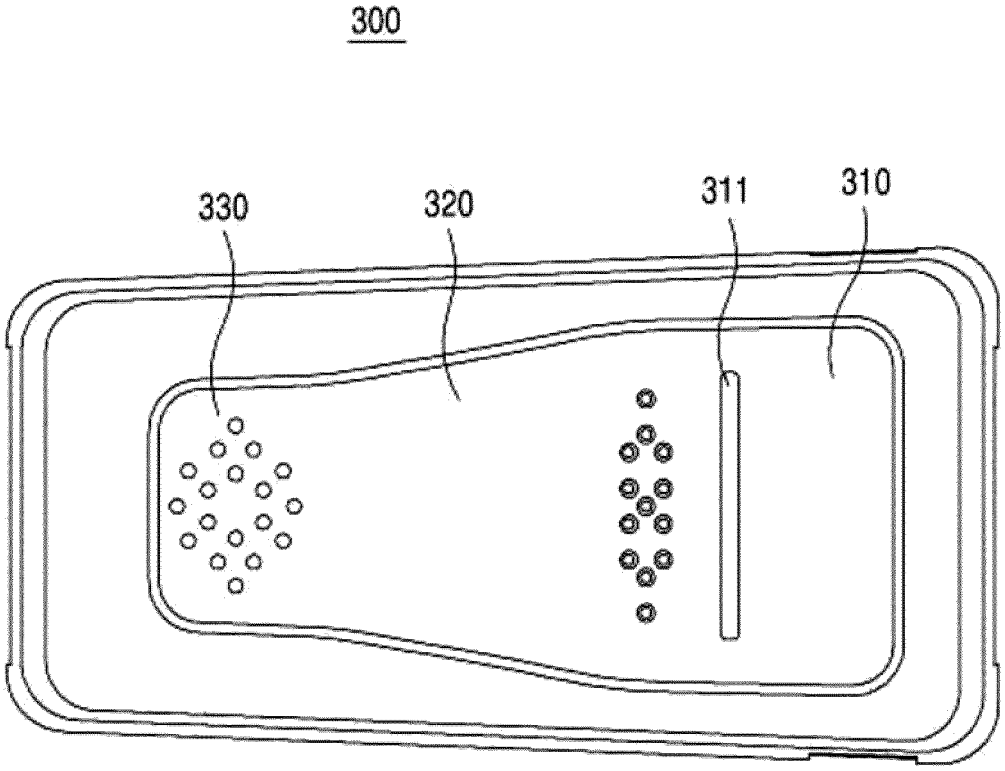

FIG.3b

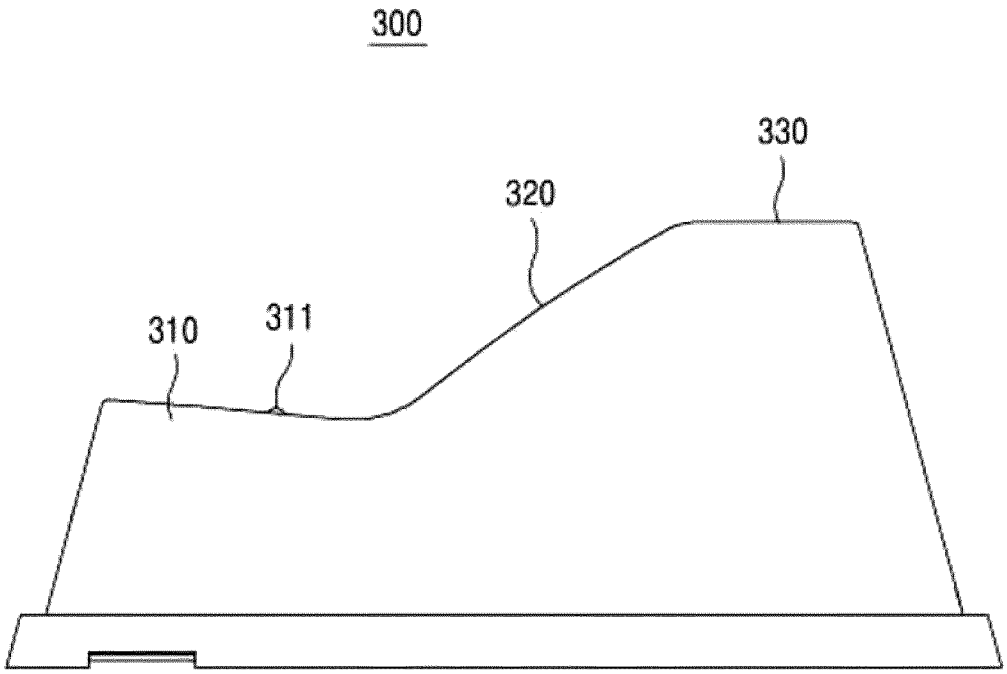

FIG.3c

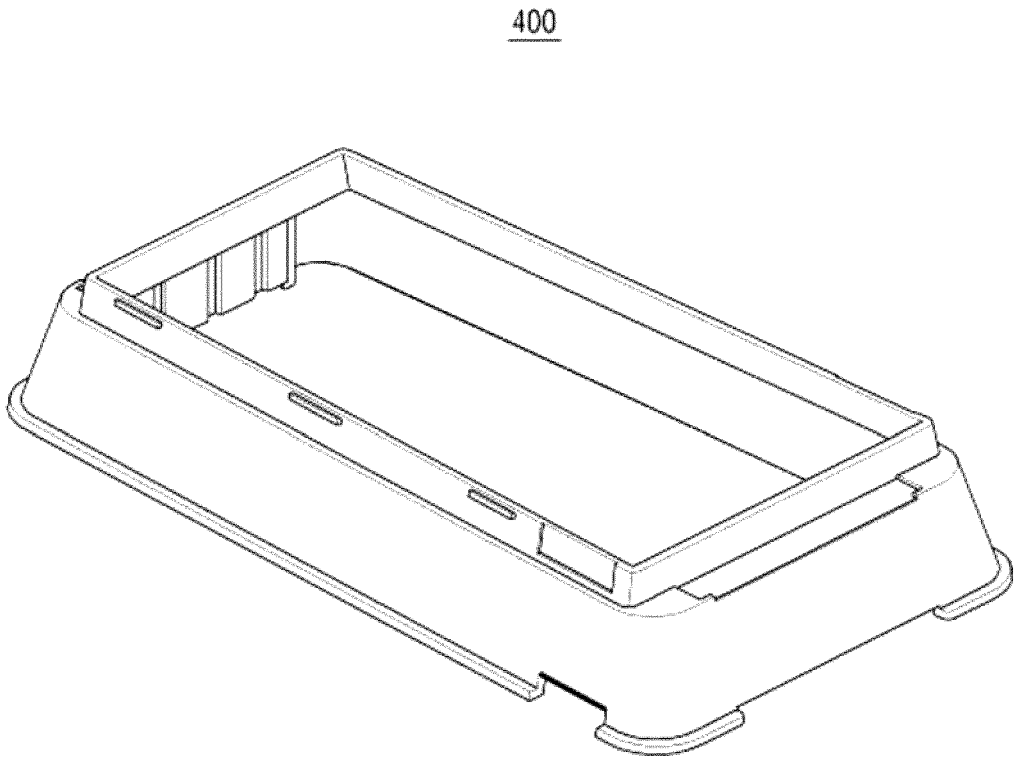

FIG.4

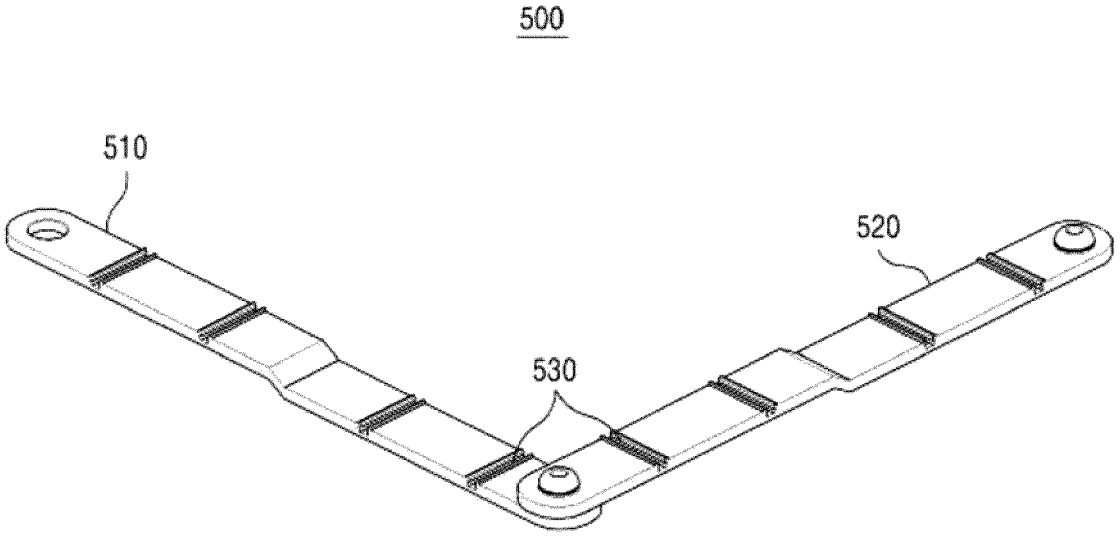

FIG.5a

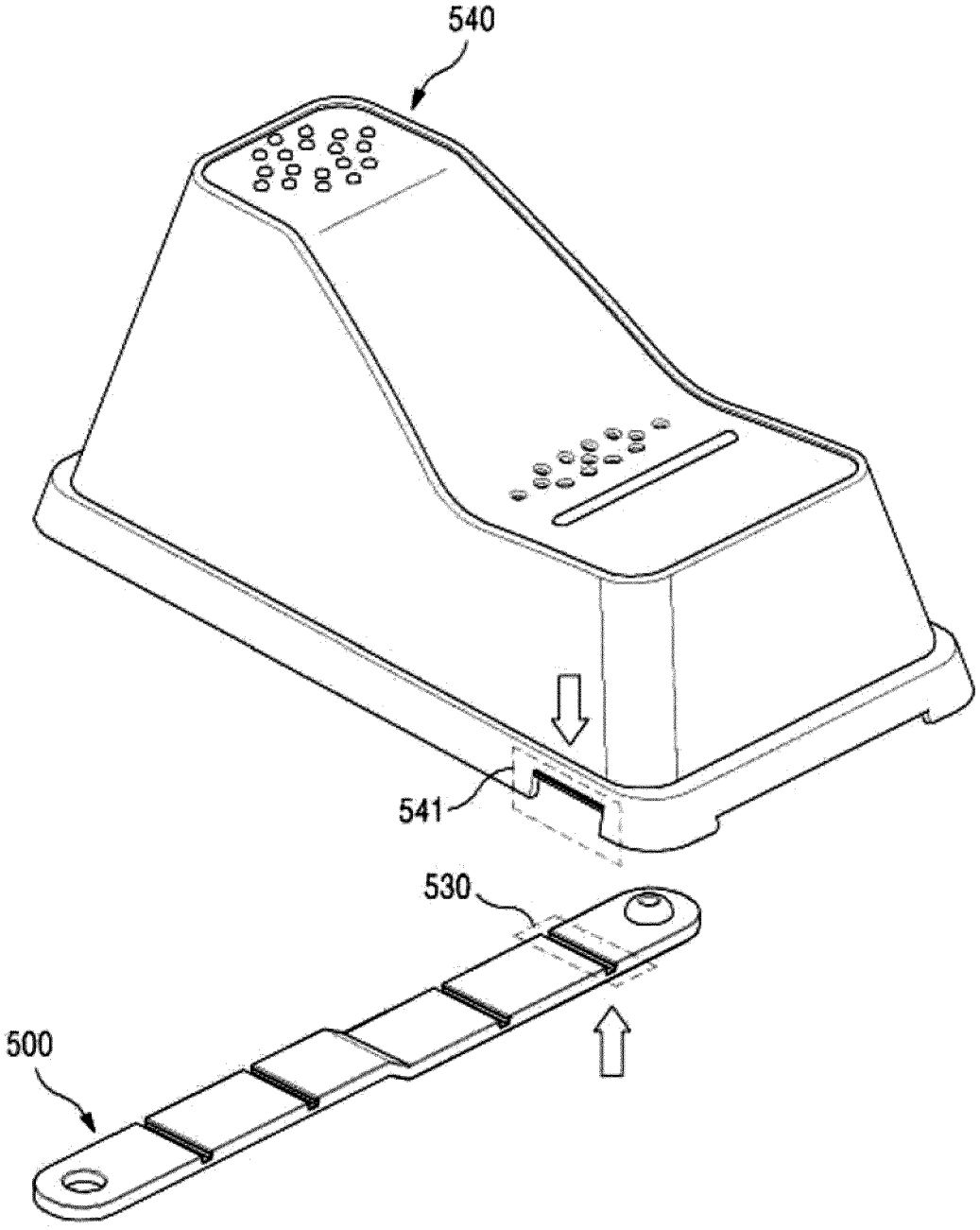

FIG.5b

600

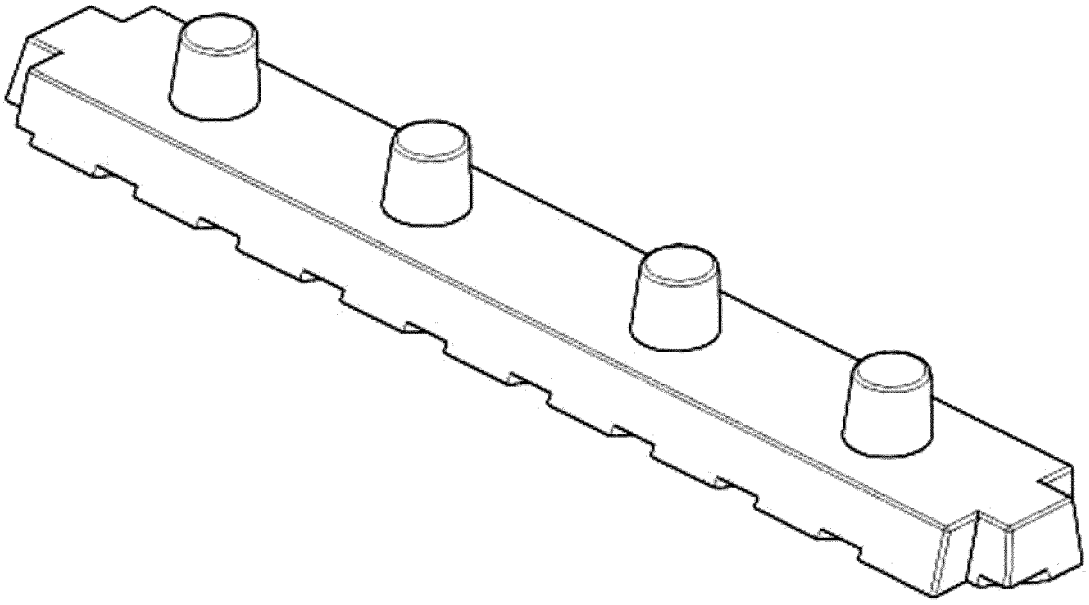

FIG.6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2016/010204

A. CLASSIFICATION OF SUBJECT MATTER

A47K 17/02(2006.01)i, A47C 16/02(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)

A47K 17/02; A63B 69/36; A63C 17/00; E03D 13/00; A63C 17/01; A47K 17/00; A47C 16/02

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

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

eKOMPASS (KIPO internal) & Keywords: toilet bowl, excretion, constipation, foothold, left foot, right foot, connection frame, fastening groove, slope

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 20-2010-0007765 U (KIM, Jae Yong) 02 August 2010 See paragraphs [0020]-[0025] and figures 1-5.	1-16
Y	US 2006-0046864 A1 (PAGANO, Joseph V.) 02 March 2006 See paragraphs [0023], [0027] and figures 1-2.	1-15
Y	KR 20-0478555 Y1 (KIM, Nam Goo) 19 October 2015 See paragraphs [0025], [0029], [0036] and figures 4-5, 7.	3-12,16
Y	KR 10-0573366 B1 (KIM, Hong Kee) 26 April 2006 See claim 1 and figure 2.	15
A	KR 20-0211178 Y1 (HONG, Sung Rak) 15 January 2001 See claim 1 and figure 1.	1-16

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means
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"T" 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
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"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	Date of mailing of the international search report
20 DECEMBER 2016 (20.12.2016)	**21 DECEMBER 2016 (21.12.2016)**
Name and mailing address of the ISA/KR Korean Intellectual Property Office Government Complex-Daejeon, 189 Seonsa-ro, Daejeon 302-701, Republic of Korea Facsimile No. +82-42-481-8578	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/KR2016/010204

Patent document cited in search report	Publication date	Patent family member	Publication date
KR 20-2010-0007765 U	02/08/2010	KR 20-0460173 Y1	03/05/2012
US 2006-0046864 A1	02/03/2006	NONE	
KR 20-0478555 Y1	19/10/2015	NONE	
KR 10-0573366 B1	26/04/2006	WO 2006-129918 A1	07/12/2006
KR 20-0211178 Y1	15/01/2001	NONE	

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