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(54) **ENHANCED EDGES FOR TOILET SEATS**

(57) A toilet seat or a method for producing a toilet seat, comprising at least one of a seating board or a lid, wherein the toilet seat is configured to be attached to a toilet bowl, wherein at least one of the seating board or the lid is provided with an enhanced edge, wherein the enhanced edge comprises a slope portion circumferen-

tially surrounding the seating board or the lid for providing multiple grip possibilities to a user. Various configurations for the enhanced edge are disclosed, including configurations where the enhanced edge further comprises a substantially vertical portion circumferentially surrounding the seating board or the lid.

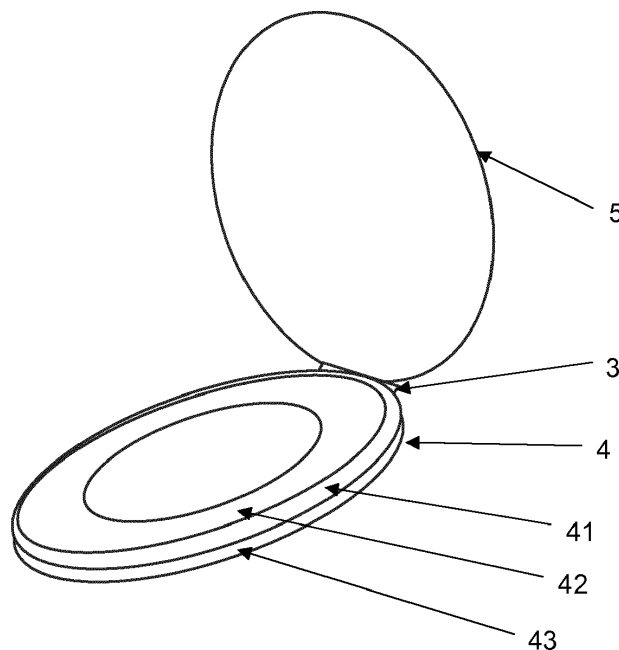


Fig. 2A

Description

FIELD OF INVENTION

[0001] The present invention relates to toilet seats, more precisely to a toilet seat comprising an enhanced edge on its lid or its seating board, or on both its seating board and lid.

BACKGROUND

[0002] Nowadays, toilet bowls are often equipped with toilets seats. Toilet seats have existed in various forms for many decades. Usually, they comprise a seating board having a circumferential seating surface around a hole that is substantially positioned in the middle and matches the aperture of the toilet bowl. The seating board provides a surface on which the occupant can seat comfortably. In addition, such toilet seats often comprise a lid, which may cover the seating board and thus provide a protective cover for both the seating board and the toilet bowl aperture.

[0003] Toilet seats are usually formed such that they cover the toilet bowl aperture, and provide a comfortable seating experience for the user. Visual appearance is also often considered when developing toilet seats. For example, the shape of the toilet seat may vary, as may be the case for the coloring. Decorative elements for toilet seats are also known, as for example disclosed in WO 2012/138425 A2.

[0004] As one can see for instance in the disclosure of document CN 102334942 (in its Fig. 1), the seating board also comprises a circumferential edge that extends downwards to overlap with and cover the toilet bowl. In turn, the lid also comprises a circumferential edge that is designed for overlapping with and covering the seating board. In order to bring the lid and/or the seating board to an open position, the user usually grips the lid and/or the seating board at one position around the edge and lifts the lid and/or the seating board.

[0005] Usually, toilet seats do not comprise a separate gripping portion, such as a separate handle or the like. Consequently, opening and closing a toilet seat in its attached state may not turn out to be comfortable for all users, as e.g. the size of the hands of the user and/or the force that can be applied by the users may vary. Moreover, as the toilet seat is touched by various users, in particular if installed in public places, cleaning is important. Here, one of the parts that should be cleaned diligently is the zone where the user put his fingers to hold the toilet seat element when changing the position of this element.

[0006] Issues such as enhancing the gripping of the seat (lid and/or seating board) by a user, or to ease the cleaning, are not sufficiently addressed by toilet seats according to the prior art.

[0007] The aim of the invention is therefore to provide a solution to enhance the toilet seat elements (lid and/or

seating board) in order to provide additional functions to the rest of the seat, such as providing a better gripping for the user for opening/closing the seat, and providing a more convenient shape for cleaning the surfaces that come often in contact with the fingers/hands of the users.

SUMMARY

[0008] The present invention solves these problems by providing a solution for a toilet seat that comprises an enhanced edge. The enhanced edge, which may be of varying configurations, comprises a slope portion so as to allow for providing multiple grip possibilities to a user at the same position along the perimeter of the toilet seat. This way, it is possible to offer a toilet seat that is more convenient to open and close by various users, while at the same time refraining from using additional elements, such as a separate handle or the like, that may be visually unpleasant.

[0009] In one embodiment, the invention is directed to a toilet seat comprising at least one of a seating board or a lid, wherein the toilet seat is configured to be attached to a toilet bowl, wherein at least one of the seating board or the lid is provided with an enhanced edge, wherein the enhanced edge comprises a slope portion circumferentially surrounding the seating board or the lid for providing multiple grip possibilities to a user.

[0010] In another embodiment, the slope portion is of a concave rounded shape or a convex rounded shape or has a continuous slope.

[0011] In another embodiment, the enhanced edge is formed in that a substantially horizontal surface of the seating board or the lid extends, along its circumferential outer portions, in vertical direction to the slope portion.

[0012] In another embodiment, the at least one of the seating board or the lid, when seen from above in a state attached to the toilet bowl, may be of substantially rectangular shape with or without one or several rounded angles, substantially D-shape, substantially square shape with or without one or several rounded angles, substantially octagonal shape or substantially disc shape.

[0013] In another embodiment, the enhanced edge further comprises a substantially vertical portion circumferentially surrounding the seating board or the lid.

[0014] In another embodiment, wherein "a" is the distance corresponding to the orthogonal projection of the slope portion on a horizontal plane, and wherein "b" is the distance corresponding to the orthogonal projection of the slope portion (41,51) on a vertical plane, the toilet seat is formed such that "a" is substantially equal or longer than "b".

[0015] In another embodiment, wherein "b" is the distance corresponding to the orthogonal projection of the slope portion on a vertical plane, and wherein "c" is the thickness of the substantially vertical portion, the toilet seat is formed such that "b" is substantially longer than "c".

[0016] In another embodiment, the toilet seat is formed such that "b" is substantially equal to the distance ("b" + "c") multiplied by a value between 0.6 and 0.7, preferably by 0.618, and "c" is substantially equal to the distance ("b" + "c") multiplied by a value between 0.4 and 0.3, respectively, preferably by 0.382.

[0017] In another embodiment, wherein "a" is the distance corresponding to the orthogonal projection of the slope portion on a horizontal plane, the toilet seat is formed such that "a" is substantially equal or longer than "b".

[0018] In another embodiment, the outer surfaces of the seating board or the lid are provided with a protective coating.

[0019] In another embodiment, the enhanced edge of the toilet seat is provided with a plated element.

[0020] In another embodiment, the substantially vertical portion circumferentially surrounding the seating board or the lid is provided with a plated element.

[0021] In another embodiment, the plated element is provided around substantially the entirety of the perimeter of the toilet seat element on which it is provided.

[0022] In one embodiment, the invention is also directed to a method for producing a toilet seat comprising at least one of a seating board or a lid, wherein the toilet seat is configured to be attached to a toilet bowl, wherein at least one of the seating board or the lid is provided with an enhanced edge, wherein the enhanced edge comprises a slope portion circumferentially surrounding the seating board or the lid for providing multiple grip possibilities to a user, wherein the method for producing the toilet seat comprises: a step of pressing in a mold the at least one of the seating board or the lid, or a step of using a rotary cutter to remove material from the seating board or the lid in order to shape the slope portion.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023]

Fig. 1 shows a view of an illustrative toilet seat on which to apply the present invention, in the form of a toilet seat with a seating board, a lid and a hinge connecting the seating board and the lid together and fixing the toilet seat to the toilet bowl.

Fig. 2A shows a toilet seat comprised of a lid in an opened position, and a seating board with an enhanced edge visible according to embodiments of the present invention.

Fig. 2B shows the lid of a toilet seat, with an enhanced edge visible on it, according to embodiments of the present invention.

Figs. 3A-D show several illustrations of enhanced edges, according to embodiments of the present invention, to be adapted to an element of a toilet seat (seating board or lid).

Figs. 4A-F show top views of illustrative examples of toilet lid designs on which the enhanced edge

could be applied, according to embodiments of the present invention.

Figs. 5A-C show illustrative examples of production methods for the enhanced edge according to embodiments of the present invention.

Figs. 6A-D show preferred embodiments of edges according to embodiments of the present invention.

Figs. 7A-I show embodiments of toilet seats elements with enhanced edges, wherein on parts of the circumferentially surround edge a plated element is preferably added, according to embodiments of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0024] Hereinafter, the embodiments will now be described in detail with reference to the accompanying drawings. However, the disclosure cannot be limited to the embodiments in which the idea of the disclosure is presented, and other embodiments included within range of idea of another backward disclosure or the present disclosure may be easily proposed by addition, change, deletion and the like of another element.

[0025] The terms used in this specification were selected to include current, widely-used general terms. In certain cases, a term may be one that was arbitrarily established by the applicant. In such cases, the meaning of the term will be defined in the relevant portion of the detailed description. As such, the terms used in the specification are not to be defined simply by the name of the terms but are to be defined based on the meanings of the terms as well as the overall description of the present disclosure.

[0026] For instance, the term "enhanced" is used to refer to the configuration of the edge of the toilet seat element (lid and/or seating board) so that the respective toilet seat element allows achieving one or more of the afore-mentioned functions of the present invention, in particular allowing multiple gripping possibilities for a user at the same position along the perimeter of the respective toilet seat element.

[0027] As another example, the terms "horizontal" or "vertical" should be understood as direction indications for when the toilet seat element described is in a closed position (i.e. resting on the top surface of the toilet bowl).

[0028] It should be noted that, in the following detailed description and accompanying drawings, the same reference numerals are used to designate the same or similar elements throughout the drawings.

[0029] It should also be noted that, the embodiments described hereafter are provided so that the person skilled in the art will better understand the teaching of the present invention. In this regards, the embodiments provided may be used as alternatives but also as illustrative examples of individual features of which combinations can be used for the realization of a toilet seat with an enhanced edge.

[0030] Fig. 1 shows a view of an illustrative toilet seat

on which to apply the present invention, in the form of a toilet seat 1 with a seating board 4, a lid 5 and a hinge 3 connecting the seating board 4 and the lid 5 together and fixing the toilet seat 1 to the toilet bowl 2.

[0031] Referring to Fig. 1, in an embodiment the toilet seat 1 is attached to a toilet bowl 2, which can be of any kind including commonly used ceramic toilet bowls. The toilet bowl 2 may have a substantially horizontal top surface with an aperture substantially placed in the middle of the top surface, which can be substantially of round or oval shape. This aperture on the horizontal top surface of the toilet bowl is preferably configured to receive corporal wastes and evacuate them due to water drainage into a sewage system. The toilet bowl 2 may be configured to be connected to a fixing means to fix the toilet seat 1 onto it. For instance, the rear portion of the horizontal top surface of the toilet bowl 2 may have one or several through holes for placing one or several screws from a toilet seat hinge 3.

[0032] The toilet seat 1 may have a size and shape substantially matching the size and shape of the toilet bowl 2, and covering the horizontal top surface and the aperture of the toilet bowl 2.

[0033] The toilet seat 1 may comprise a seating board 4, configured to be adapted to the horizontal surface of the toilet bowl 2. The seating board 4 may cover at least the entirety of the part of the horizontal top surface surrounding the aperture of the toilet bowl 2. The seating board 4 may preferably be provided with a through hole adapted to match the aperture of the toilet bowl 2, when the seating board 4 of toilet seat 1 is placed in a horizontal position on the toilet bowl 2 at the level of the horizontal top surface.

[0034] The toilet seat 1 may comprise a toilet lid 5 configured to be adapted to the horizontal surface of the toilet bowl 2 and to the seating board 4. The toilet lid 5 may cover at least the entirety of the part of the horizontal top surface surrounding the aperture of the toilet bowl 2 and/or at least the entirety of the seating board 4, when the seating board of toilet seat 1 is placed in a horizontal position on the toilet bowl 2 at the level of the horizontal top surface.

[0035] The toilet seat 1 may comprise a hinge 3, which may comprise a fixing means to fix the toilet seat 1 to the toilet bowl 2. The hinge 3 may attach together the seating board 4 with the toilet lid 5, and maintain them in a hinged relation.

[0036] The toilet seat 1 may be made of any material usually used for toilet seats, or of a combination thereof. For instance, the toilet seat 1 may be made of duroplast (UF). This material offer the advantage of allowing molding the hinge 3 directly into the elements of the toilet seat 1. With a limited number of elements, this design can provide a simple and easy to assemble embodiment, thanks to which the production costs can also be limited. In addition, toilet seats made of this material enjoy a high degree of stability and durability and it is convenient to clean their surfaces. The toilet seat may also be made

of laminar composites. The advantage of these materials being that the seat is more durable and retain its original appearance for a longer period than conventional toilet seats. The toilet seat 1 may also be made of medium density fiberboard (MDF), which is formed of wood fibers that are held together with one or more waxes or resins such as epoxies, phenolic or formaldehyde resins. The toilet seat 1 may also be made of another composite wood such as hardwood plywood (HWPW), particle board (PB), high density fiber board (HDF), molded wood, molded straw or compressed bamboo.

[0037] In the following paragraphs, several embodiments of a toilet seat 1 on which the invention is applied will be described in more details.

[0038] Fig. 2A shows a toilet seat 1 comprising a lid 5 in an opened position, and a seating board 4, where an enhanced edge is visible.

[0039] Referring to Fig. 2A, the seating board 4 may be configured according to the present invention to have an enhanced edge that circumferentially surrounds the seating board, or, other words, extends along the outer perimeter of the seating board. The enhanced edge is formed by the transition of the substantially horizontal portion 42 of the seating board 4 to a vertically downward extending slope portion 41. The enhanced edge may further comprise substantially vertical portion 43 that is arranged next to the slope portion 41 (in vertically downward direction).

[0040] Fig. 2B shows the lid 5 of a toilet seat 1, with an enhanced edge visible on it.

[0041] Referring to Fig. 2B, according to the present invention the lid 5 may be configured corresponding to the seating board 4 of Fig. 2A. In other words, the lid 5 may also (in addition to or instead of the seating board 4) comprise an enhanced edge which may be formed by the combination of a horizontal portion 52 and a vertically downward extending slope portion 51 that circumferentially surrounds the lid 5. Again, a vertical portion 53 may be arranged next to the slope portion 51 (in vertically downward direction).

[0042] Referring to both Figs. 2A and 2B, the slope portions 41 and 51 of the seating board 4 and the lid 5, respectively, may be adapted to provide several additional functions to toilet seat elements provided with the enhanced edge according to the present invention.

[0043] In an embodiment, the slope portion(s) 41 and/or 51 may be configured to provide a progressive width in either upward or downward direction, so that the possibilities for gripping of the respective toilet seat element is improved. For instance, for users having small hands, e.g. for children, an edge with a small thickness can render the gripping of the toilet seat element (lid 5 or seating board 4) much easier and comfortable, as they no longer need to encompass the edge with the hand. Rather, such a user may have the possibility to grip the edge at its most outer portion, where the width may be the smallest. For users with bigger hands, or with difficulties to close a claw formed by their thumb and their

opposing fingers (for instance users suffering arthrosis), having an edge of varying width can render the gripping of the toilet seat element much easier and comfortable. In this case, such a user would have the possibility to grip the edge of the toilet seat element on the part of the slope portion which is the closest to the substantially horizontal portion, in case a toilet seat with an edge whose width increases in upward direction is provided. An enhanced edge according to the present invention provides an easy and cost efficient way to offer multiple grip possibilities at the same position along the perimeter of the toilet seat, without the need for additional gripping handles or the like.

[0044] In addition, when an enhanced edge is placed on a seating board 4 or a lid 5, it may also help avoiding the risk of trapping the user's fingers, for instance between the toilet seat elements or the toilet bowl 2, when bringing the toilet seat element in an opened or a closed position.

[0045] In an embodiment, the slope portions 41 and 51 may also be adapted to ease the cleaning of the toilet seat 1. Considering that the slope portions 41 and 51 are presumably the portions which will be the most frequently touched portions of the seat elements by the users when they open or close the toilet seat elements, these portions would necessitate great attention regarding the cleaning of the seat. The slope portions 41 and 51 may then be adapted to better guide the movement of an operator cleaning these often-touched surfaces. For example, the slope portions 41 and 51 may be adapted to act as a guiding rail when an operator moves a cleaning tissue over the edge of the toilet seat element.

[0046] Figs. 3A-D show several illustrations of enhanced edges, according to embodiments of the present invention. These edges may be applied to an element of a toilet seat 1 (seating board 4 or lid 5) according to the present invention. In the following paragraphs, embodiments where these illustrative enhanced edges are adapted to a lid 5 will be described, however, it would be apparent for the person skilled in the art that such description is easily transferrable to the cases where such illustrative edges are applied to a seating board 4.

[0047] Referring to Fig. 3A, an enhanced edge for a toilet lid 5 is shown. The enhanced edge may be formed in that the substantially horizontal surface 52 extends, along its outer perimeter, to a vertically downward slope surface 51. The vertically downward slope surface 51 may further extend to a straight part of the edge, or in other words, to a substantially vertical surface 53. The slope surface 51 may be of a concave rounded cross section shape. In a preferred embodiment, the angles formed between the substantially horizontal surface 52 and the slope surface 51, and between the slope surface 51 and the substantially vertical surface 53, respectively, may be rounded. This shape has the advantage of providing a small thickness at the outer edge for users with small hands, and for user with bigger hands and fingers, a form which better fits the tips of the fingers. In addition,

such a shape provides a good guiding surface for cleaning the edge of the toilet lid 5.

[0048] Referring to Fig. 3B, an enhanced edge for a toilet lid 5 according to embodiments of the present invention may alternatively have a substantially horizontal surface 52, a slope surface 51 and a substantially vertical surface 53, wherein the slope surface 51 may be of a convex shape comprising a rounded cross section. This shape has the advantage of providing sufficient thickness at the outer edge for users with bigger hands and fingers, or with difficulties in closing the claw formed by the thumb and the opposing fingers of one hand, or having less strength in the hand when this claw is close to a closed position.

[0049] Referring to Fig. 3C, an enhanced edge for a toilet lid 5 according to a further embodiment of the present invention is shown. The enhanced edge may again comprise a substantially horizontal surface 52, a slope surface 51 and a substantially vertical surface 53. The slope surface 51 may comprise a continuous slope that surrounds circumferentially the lid 5 and that decreases from the radial outer end of the substantially horizontal portion 52 to the vertical portion 53. This shape has the advantage of providing a progressive thickness of the edge, providing a broader range of multiple grip possibilities for users. In addition, such a shape also provides a good guiding surface for cleaning the edge of the toilet lid 5.

[0050] Referring to Fig. 3D, an enhanced edge for a toilet lid 5 according to a yet further embodiment of the present invention is shown. In this embodiment, the continuous slope decreases from the radial outer end of the substantially horizontal portion 52 in downward direction. In addition, the vertical portion 53 may be removed, and the vertical lower end of the slope portion 51 directly transitions to the lower surface of the toilet lid 5, which may be formed of another substantially horizontal element.

[0051] Further embodiments of an enhanced edge are also possible. For example, the slope portion 51 may be "S"-shaped, when viewed in a cross section, with the lower part of the "S"-shaped slope portion transitioning to the vertical portion 53.

[0052] Figs. 4A-F show top views of illustrative examples of toilet lid 5 designs on which the enhanced edge, according to embodiments of the present invention, could be adapted. Again, in the following paragraphs, embodiments where the enhanced edges are adapted to a lid 5 will be described, however, it would be obvious for the person skilled in the art, that such description is easily transposable to the case where such illustrative edges are adapted to a seating board 4.

[0053] Referring to Fig. 4A the lid 5 may be substantially of a rectangular shape when seen from above, with the two angles opposite to the hinge 3 being rounded.

[0054] Referring to Fig. 4B the lid 5 may have a substantially D-shape when seen from above, with the rounded part of the D on the opposite side of the hinge 3.

[0055] Referring to Fig. 4C the lid 5 may be substan-

tially of a square shape.

[0056] Referring to Fig. 4D the lid 5 may be substantially of a square shape, with some or all angles rounded.

[0057] Referring to Fig. 4E the lid 5 may be substantially of an octagonal shape.

[0058] Referring to Fig. 4F the lid 5 may be substantially of a disc shape.

[0059] Figs. 5A-C show illustrative examples of production methods for the enhanced edge according to embodiments of the present invention.

[0060] Referring to Fig. 5A, the production process of the toilet seat element with the enhanced edge can be realized through pressing, preferably through pressing and heating. In these cases, the two parts of a molding press, elements 8A and 8B, may be used to apply a pressing force F on the two opposing sides of the material to be formed. Such pressing process is cost efficient, especially in the case of mass production. The elements 8A and 8B are shaped according to the desired configuration of the enhanced edge(s) on the lid or the seating board.

[0061] Referring to Figs. 5B and 5C, the production process of the toilet seat element with the enhanced edge can also be realized using a rotary cutter (for instance with a milling machine) to remove material from the toilet seat element to be provided with an enhanced edge. Such milling process is very easy and appropriate to small production batches. It also has the advantage of offering the possibility to easily adapt the shape of the edge for each production batch, or of allowing the customization of the edge for each user group/buyer.

[0062] Figs. 6A-D show preferred embodiments of edges according to the present invention, where the enhanced edges according to the various embodiments presented in Figs. 3A-D may be "orthopedic" edges which are dimensioned to better fit to the various grips of human beings.

[0063] Referring to Fig. 6A, 6B, 6C and 6D, the distances "a", "b", and "c" are shown. The distance "a" corresponds to the width of the slope portion (41,51), measured between the radially outermost part of slope, i.e. the position where the slope transitions to the vertical portion (42,52) and the innermost part of the slope portion, i.e. the position where the slope transitions to the substantially horizontal surface 52. This distance can also be seen as an orthogonal projection of the slope portion (41,51) on a horizontal surface. The distance "b" corresponds to the height of the slope portion (41,51), i.e. the vertical distance between the position where the slope transitions to the vertical portion 53 and the plane defined by the substantially horizontally surface 52. This distance can also be seen as an orthogonal projection of the slope portion (41,51) on a vertical surface. The distances "a" and "b" may be substantially the same. In a preferred embodiment, however, the distance "a" is longer than the distance "b". In a more preferred embodiment, if the distance "a+b=1", the distance "a" may be between 0.6 and 0.7, most preferred substantially close to the value

of 0.618, and the distance "b" may be between 0.4 and 0.3, respectively, most preferred substantially close to the value 0.382 (wherein "substantially close" means considering usual manufacturing and/or measurement tolerances).

[0064] Referring to Figs. 6A, 6B and 6C, the distance "c" corresponds to the height or thickness of the substantially vertical portion (43,53), i.e. the vertical distance between the position where the slope transitions to the vertical portion (43,53) and the position where the vertical portion transitions to the lower, and preferably horizontal, surface of the lid. The distance "c" may be smaller than the distance "b". In a preferred embodiment, if the distance "b+c=1", the distance b may be between 0.6 and 0.7, most preferred substantially close to the value of 0.618 and the distance "c" may be between 0.4 and 0.3, respectively, and most preferred substantially close to the value 0.382 (wherein "substantially close" means considering usual manufacturing and/or measurement tolerances).

[0065] Figs. 7A-I show embodiments of toilet seats elements with enhanced edges, on which a plated or painted element 6 is preferably added. The toilet seat as described in the previous embodiments may preferably be covered by a coating layer, for reasons of aesthetics, durability and hygienic protection. In addition, or instead of the coating along a portion of the enhanced edge, a plated or painted element may be added on the enhanced edge. Such plated or painted element 6 may be made of any kind of material, preferably material of high reflectiveness and/or material that has a metallic appearance, most preferably the appearance of chrome, which would appear to the user as different from the material used for the coating of all the other parts of the toilet seat. Such a plated or painted element 6 can draw the attention of the user to some parts of the toilet seat 1. For instance, the plated or painted element may be used on the slope portions 41 and/or 51 to indicate to the user where he should put his fingers/hand when operating the toilet seat element in an opened/closed position. In such a case, the plated or painted element 6 may occupy the entirety of the width of the slope surface 51 or only a part thereof, and in the latter case it may be placed for instance in the middle of the slope surface 51, on the innermost part or on the outermost part of the slope surface 51. In either of the foregoing cases, the plated or painted element is preferably placed along the entire perimeter of the enhanced edge, even though other embodiments are also possible (e.g. placing the plating only on side and front parts of the toilet seat, and not to the usually hardly visible rear part of the seat, where the connection to the bowl is made). More preferably, the plated or painted element 6 may be placed on the substantially vertical portions 43 and/or 53, so that it easily indicates the slope portion without being placed directly onto it. In such case, the risk of damaging it during the repeated grip operations by the user is more limited. In addition, the risk of damaging it when the slope portion is cleaned is reduced.

When placed on the substantially vertical surface 53, the plated or painted element 6 may occupy the entirety of the height of substantially vertical surface 53 or only a part, and in the latter case it may be placed for instance in the middle of the substantially vertical surface 53, on the uppermost part or on the lowermost part of the substantially vertical surface 53. Figs. 7E to 7I show illustrations of some of these positioning possibilities applied to some of the embodiments previously described.

[0066] While some embodiments have been described herein, it is to be understood that the subject-matter of the invention is not to be limited to the embodiments disclosed, and that the scope of protection sought is defined by the claims.

Claims

1. A toilet seat (1), comprising at least one of a seating board (4) or a lid (5), wherein the toilet seat is configured to be attached to a toilet bowl (2),
characterized in that
at least one of the seating board (4) or the lid (5) is provided with an enhanced edge, wherein the enhanced edge comprises a slope portion (41,51) circumferentially surrounding the seating board (4) or the lid (5) for providing multiple grip possibilities to a user.
2. The toilet seat (1) according to claim 1, wherein the slope portion (41,51) is of a concave rounded shape or a convex rounded shape or has a continuous slope.
3. The toilet seat (1) according to claim 1 or 2, wherein the enhanced edge is formed in that a substantially horizontal surface (42,52) of the seating board (4) or the lid (5) extends, along its circumferential outer portions, in vertical direction to the slope portion (41, 51).
4. The toilet seat (1) according to any one of claims 1 to 3, wherein the at least one of the seating board (4) or the lid (5), when seen from above in a state attached to the toilet bowl, may be of substantially rectangular shape with or without one or several rounded angles, substantially D-shape, substantially square shape with or without one or several rounded angles, substantially octagonal shape or substantially disc shape.
5. The toilet seat (1) according to any one of claims 1 to 4, wherein the enhanced edge further comprises a substantially vertical portion (43,53) circumferentially surrounding the seating board (4) or the lid (5).
6. The toilet seat (1) according to any one of claims 1 to 5, wherein "a" is the distance corresponding to the

orthogonal projection of the slope portion (41,51) on a horizontal plane,
wherein "b" is the distance corresponding to the orthogonal projection of the slope portion (41,51) on a vertical plane, and
the toilet seat is formed such that "a" is substantially equal or longer than "b".

7. The toilet seat (1) according to claim 5, wherein "b" is the distance corresponding to the orthogonal projection of the slope portion (41,51) on a vertical plane, wherein "c" is the thickness of the substantially vertical portion (43,53), and the toilet seat is formed such that "b" is substantially longer than "c".
8. The toilet seat (1) according to claim 7, wherein the toilet seat is formed such that "b" is substantially equal to the distance ("b" + "c") multiplied by a value between 0.6 and 0.7, preferably by 0.618, and "c" is substantially equal to the distance ("b" + "c") multiplied by a value between 0.4 and 0.3, respectively, preferably by 0.382.
9. The toilet seat according to claim 7 or 8, wherein "a" is the distance corresponding to the orthogonal projection of the slope portion (41,51) on a horizontal plane, and the toilet seat is formed such that "a" is substantially equal or longer than "b".
10. The toilet seat (1) according to any of the preceding claims, wherein the outer surfaces of the seating board (4) or the lid (5) are provided with a protective coating.
11. The toilet seat (1) according to any one of the preceding claims, wherein the enhanced edge of the toilet seat (1) is provided with a plated or painted element (6).
12. The toilet seat (1) according to claim 5, wherein the substantially vertical portion (43,53) circumferentially surrounding the seating board (4) or the lid (5) is provided with a plated or painted element (6).
13. The toilet seat (1) according to claim 12, wherein the plated or painted element (6) is provided around substantially the entirety of the perimeter of the toilet seat element on which it is provided.
14. A method for producing a toilet seat (1) comprising at least one of a seating board (4) or a lid (5), wherein the toilet seat is configured to be attached to a toilet bowl (2), wherein at least one of the seating board (4) or the lid (5) is provided with an enhanced edge,

wherein the enhanced edge comprises a slope portion (41,51) circumferentially surrounding the seating board (4) or the lid (5) for providing multiple grip possibilities to a user,

wherein the method for producing the toilet seat (1) 5
comprises:

a step of pressing in a mold the at least one of
the seating board (4) or the lid (5), or 10
a step of using a rotary cutter to remove material
from the seating board or the lid (5) in order to
shape the slope portion (41,51).

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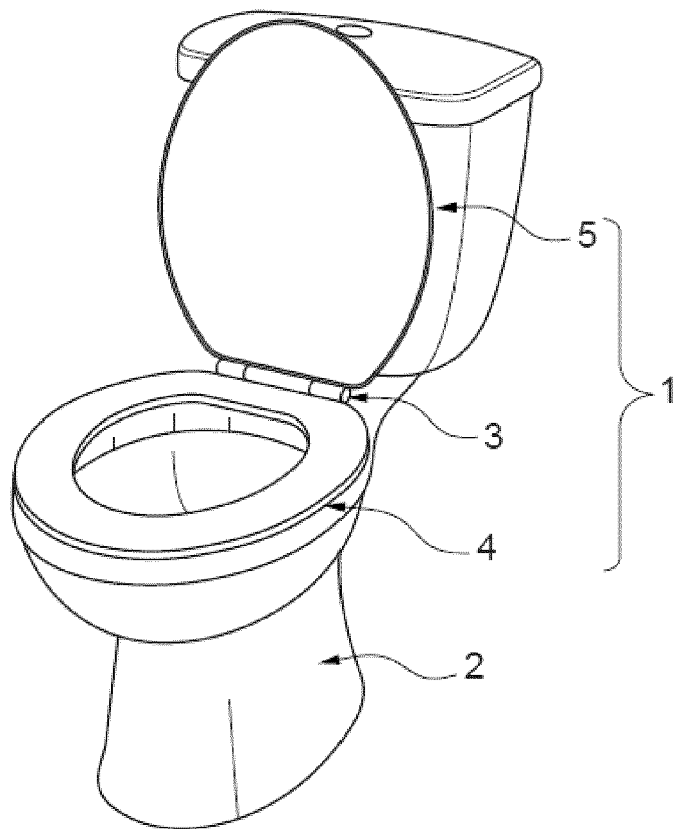


Fig. 1

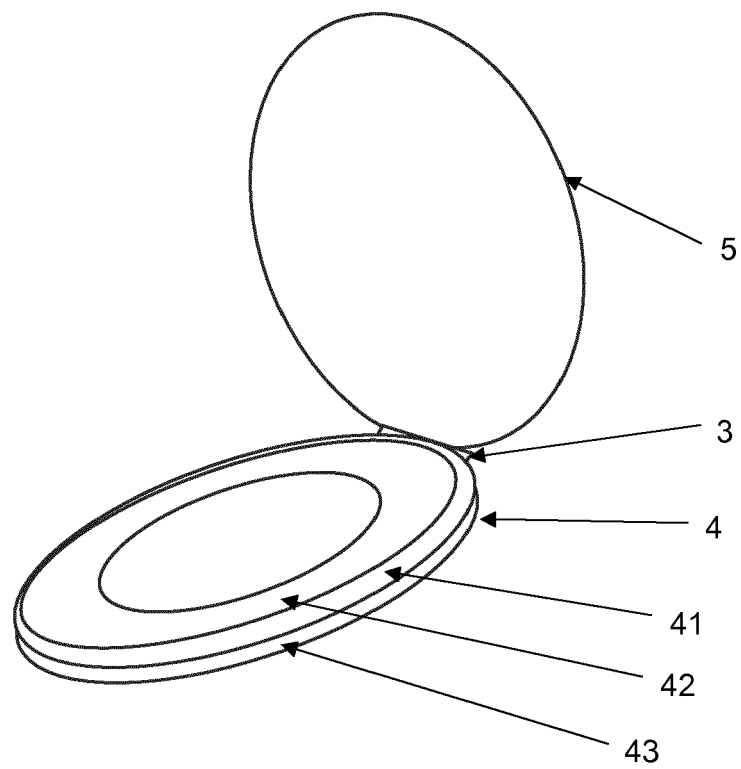


Fig. 2A

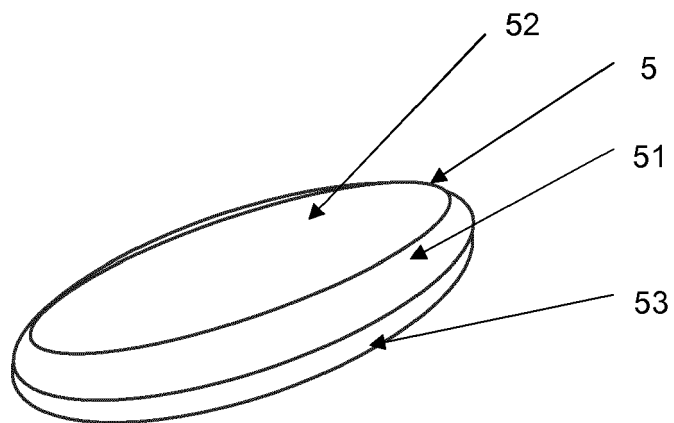


Fig. 2B

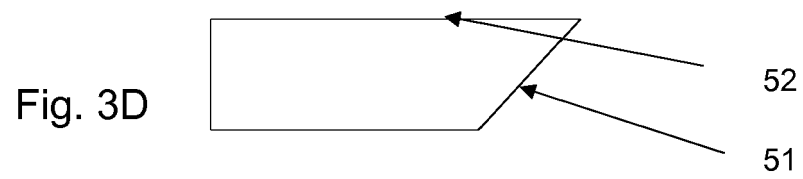
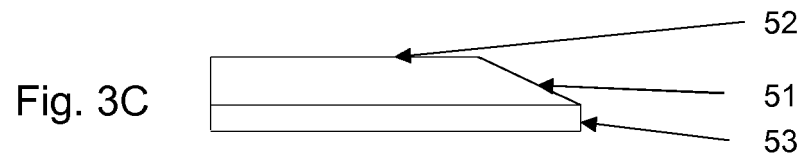
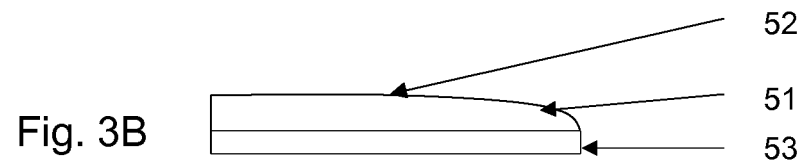
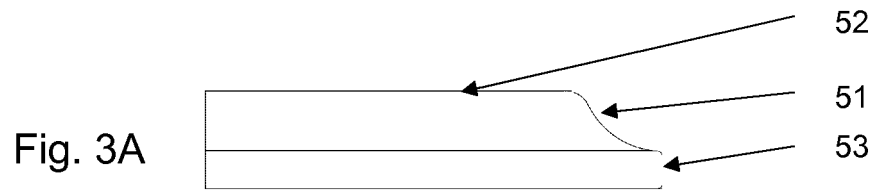


Fig. 4A

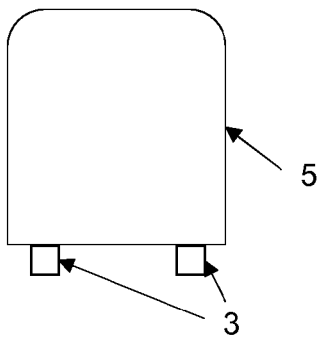


Fig. 4B

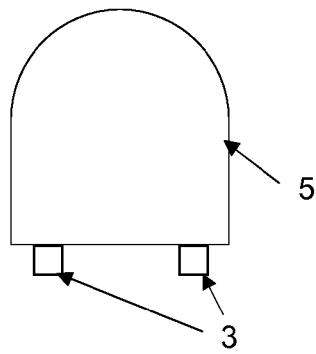


Fig. 4C

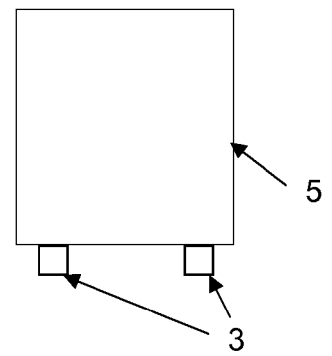


Fig. 4D

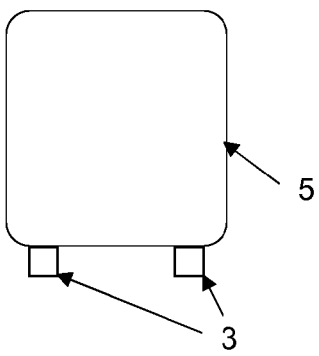


Fig. 4E

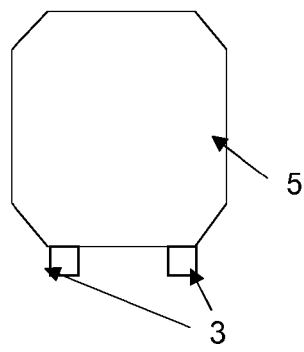


Fig. 4F

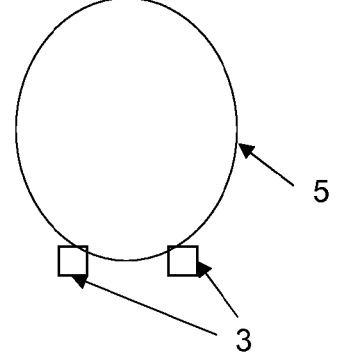


Fig. 5A

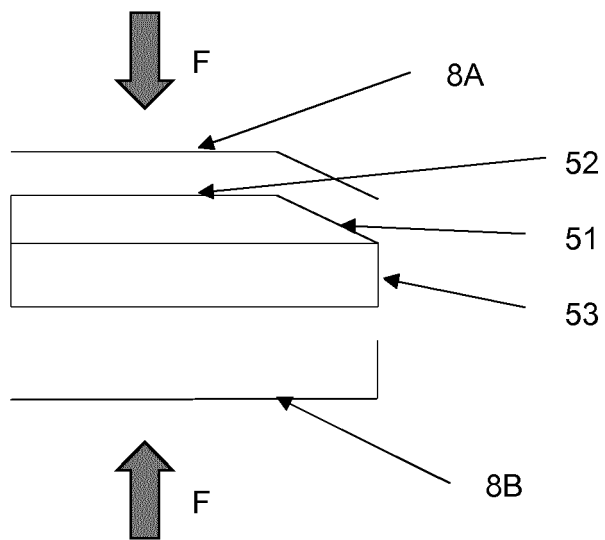


Fig. 5B

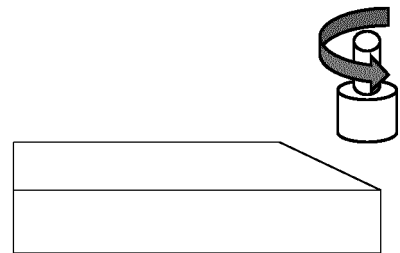


Fig. 5C

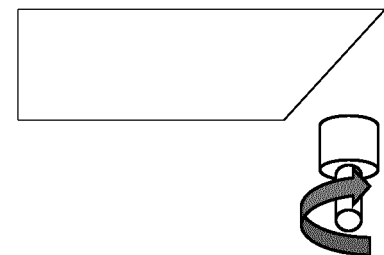


Fig.6A

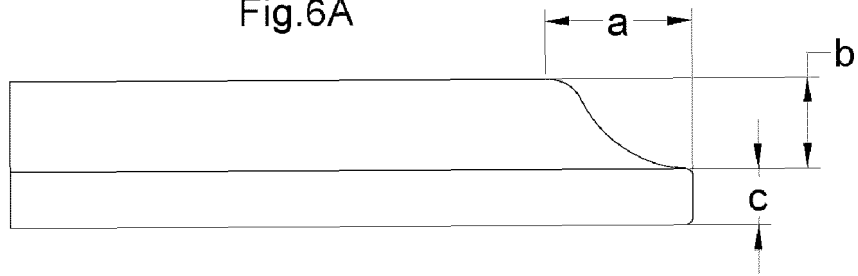


Fig. 6B

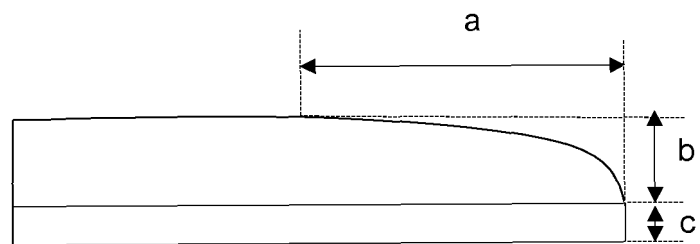


Fig. 6C

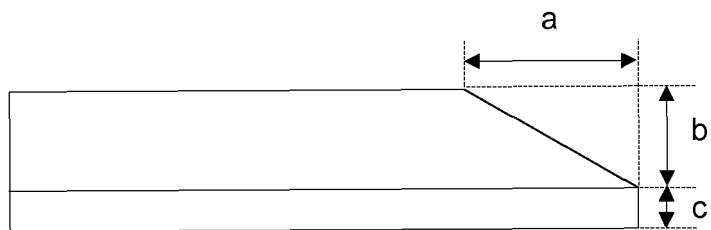


Fig. 6D

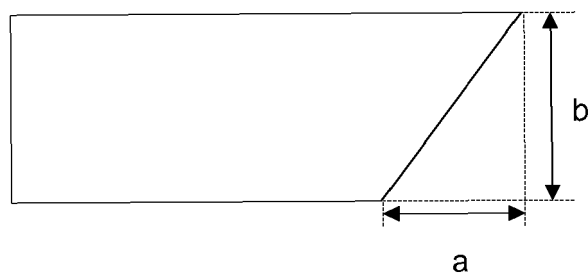


Fig. 7A

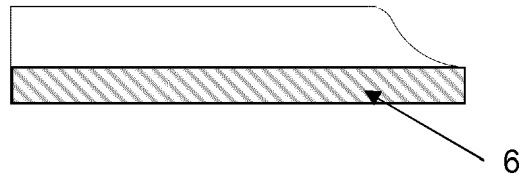


Fig. 7B

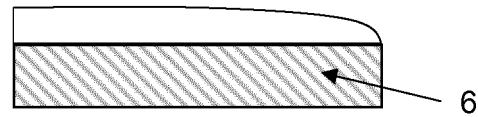


Fig. 7C

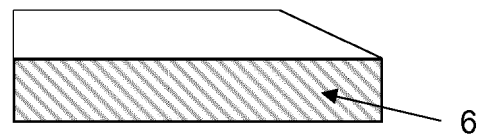


Fig. 7D

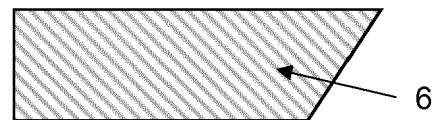


Fig. 7E

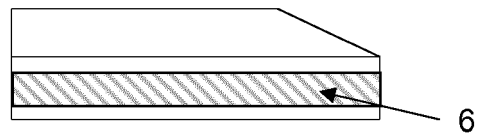


Fig. 7F

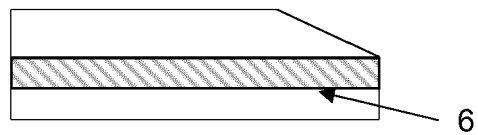


Fig. 7G

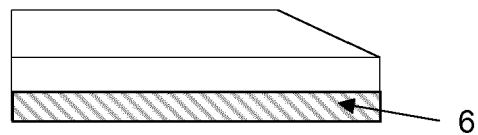


Fig. 7H

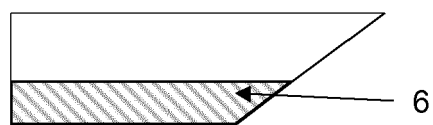
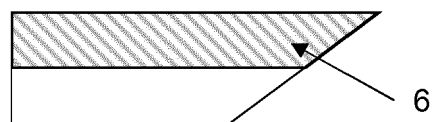


Fig. 7I





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Place of search The Hague		Date of completion of the search 4 September 2017	Examiner Schikhof, Arnout
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