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Published:

— with international search report (Art. 21(3))

(54) **Title:** TOILET SEAT RISER

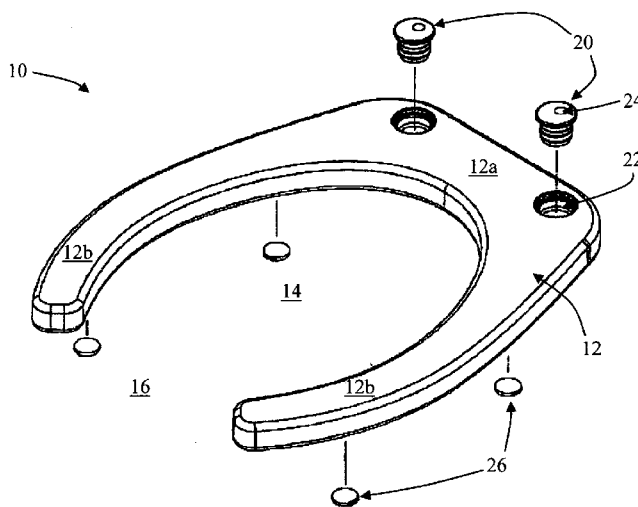


Figure 1

(57) **Abstract:** A toilet seat riser (10) is provided for fitting between a toilet bowl (40) and a toilet seat (42), comprising a seat riser platform (12). The seat riser platform (12) has a mounting portion (12a) and a peripheral portion. The mounting portion (12a) defines at least two mounting holes (24) therein to enable the mounting bolts of a toilet seat to pass therethrough. The peripheral portion comprises at least one peripheral member (12b) extending at least partially around a central void (14) and suitable for overlying the rim of a toilet bowl. The toilet seat riser (10) is no more than 6 cm thick.

WO 2010/052452 A1

TOILET SEAT RISER

The present invention is concerned with toilet seat risers. Such devices may be used to increase the height of the seat on a toilet, to enable use by those with mobility difficulties.

Users with decreased mobility, such as the elderly or infirm, can find it difficult to use standard household fittings. In particular, users who have difficulty bending at the hip (e.g. due to a hip replacement operation) can find it difficult to use a toilet of standard height. Such toilets generally consist of a floor-mounted porcelain bowl which is connected to a water cistern to enable flushing of waste material into the sewerage system. To provide user comfort, the toilet is typically fitted with a seat made from a thermally-insulating material, such as wood or plastic. The seat is typically mounted to the toilet via a hinge, allowing the seat to be lifted for cleaning or for standing urination. Typically, the toilet seat is further provided with a hinged lid.

It is known to make use of toilet seat risers to increase the effective height of a toilet seat, enabling users with mobility problems to sit down on and stand up from a toilet seat more easily. For example, it is known to provide a raised toilet seat which is fitted on top of an existing toilet to raise the height by the desired amount, and which is securely attached to either the existing toilet seat or to the porcelain bowl. However, such a device presents a number of difficulties. The presence of the seat riser is visually obvious, which may cause the user of the seat riser embarrassment if the toilet is also used by others. Whilst the seat riser may be removed, regular removal and refitting of the seat riser increases the possibility of incorrect fitting, and the likelihood of injury or distress if the seat riser slips off the toilet during use. Finally, the presence of the seat riser prevents closure of the toilet seat lid, or in most cases, raising of the toilet seat for standing urination.

It is also known to make use of toilet seat risers which aim to entirely replace the functionality of the existing toilet seat. Such risers may be fitted using the existing seat mounting holes in the porcelain bowl, requiring the complete removal of the existing toilet seat. Alternatively, the toilet seat riser may be fitted to the rim of the porcelain toilet bowl, requiring the existing seat to be placed in the raised position. In both cases, many of the problems identified above will apply.

Finally, an example (shown in US Patent 5,251,338) is known in which the toilet seat riser is fitted between an existing toilet seat and the porcelain toilet bowl. Despite utilising the existing toilet seat, this seat riser remains highly visible, retaining the possibility of embarrassment for the user. Furthermore, the device requires the use of extension bolts to enable fitting of the device, and of the original toilet seat, to a toilet bowl.

The invention has been conceived with the above problems in mind.

According to a first embodiment of the present invention, there is provided a toilet seat riser for fitting between a toilet bowl and a toilet seat, comprising a seat riser platform; the seat riser platform having a mounting portion defining at least two mounting holes therein to enable the mounting bolts of a toilet seat to pass therethrough, and a peripheral portion comprising at least one peripheral member extending at least partially around a central void and suitable for overlying the rim of a toilet bowl; and wherein the toilet seat riser is no more than 6 cm thick.

It will be understood that the features of the toilet seat riser facilitate connection of the toilet seat riser between the toilet bowl and the toilet seat in a secure manner without a requirement for additional fixing mechanisms, and minimise the visual impact of the device to reduce embarrassment.

In one embodiment, the toilet seat riser is between 2 and 6 cm thick. In a further embodiment, the toilet seat riser is between 2 and 4 cm thick. In a still further embodiment, the toilet seat riser is 2.5 cm thick.

In one embodiment, the peripheral portion comprises a single peripheral member which extends around the entirety of the central void.

In an alternative embodiment, the peripheral portion comprises two peripheral members which together extend only partially around the central void. In a further embodiment, the two peripheral members are arranged symmetrically at either side of the central void.

In one embodiment, each of the mounting holes is defined within a mounting plug located in the seat riser platform; each mounting plug being rotatable with respect to the seat riser platform; and the mounting hole being spaced apart from the rotation axis of the mounting plug. This feature enables the precise location and separation of the mounting holes, relative to the seat riser platform and to each other, to be adjusted by rotation of the mounting plugs.

In one embodiment, the central void has substantially the same aperture as a standard toilet bowl. As used herein, the features of a 'standard' toilet are those in accordance with British Standards BS 1254:1981 (Specification for WC seats (plastics)), BS EN 997:2003 (WC pans and WC suites with integral trap), BS 5503-3:1990 and BS 7358:1990.

In one embodiment, the toilet seat riser may be stacked vertically with other toilet seat risers to provide a composite toilet seat riser having an increased thickness. In a further embodiment, the seat riser platform is adapted to engage with the seat riser platform of a similar toilet seat riser when the toilet seat riser and the similar toilet seat riser are stacked vertically.

According to a second embodiment of the invention, there is provided a toilet seat riser for fitting between a toilet bowl and a toilet seat, comprising a seat riser platform; the seat riser platform having a mounting portion defining at least two mounting holes therein to enable the mounting bolts of a toilet seat to pass therethrough, and a

peripheral portion comprising at least one peripheral member extending at least partially around a central void and suitable for overlying the rim of a toilet bowl; and wherein each of the mounting holes is defined within a mounting plug located in the seat riser platform; each mounting plug being rotatable with respect to the seat riser platform; and the mounting hole being spaced apart from the rotation axis of the mounting plug.

According to a third aspect of the invention, there is provided a toilet seat riser for fitting between a toilet bowl and a standard toilet seat connectable to the toilet bowl by means of a standard fixing, wherein in use the toilet seat riser extends substantially around the rim of the toilet bowl and is held in place by means of the standard fixing.

An exemplary embodiment of the invention will now be described in relation to the accompanying Figures, in which:

Figure 1 is an exploded perspective view of a toilet seat riser in accordance with the present invention; and

Figure 2 is a perspective view of the toilet seat riser of Figure 1 fitted between a toilet bowl and a toilet seat.

Referring to Figure 1, a toilet seat riser 10 comprises a seat riser platform 12 having a mounting portion 12a and a peripheral portion comprising two peripheral members 12b. The peripheral members 12b are arranged symmetrically with respect to the longitudinal axis of the seat riser platform 12 and define between them a central void 14; it will be seen that the peripheral members 12b do not extend around the entirety of the central void 14, but instead are separated by a gap 16 at their ends distal to the mounting portion 12b.

Two mounting plugs 20 having circular cross-sections are located within corresponding holes 22 in the mounting portion 12a of the seat riser platform 12. Each mounting plug 20 has a mounting hole 24 passing vertically (in use, and as shown) therethrough, each mounting hole 24 being offset from the axis of the mounting plug 20. The mounting plugs 20 are each rotatable relative to the seat riser platform 12, in order to adjust the

positions and spacing of the mounting holes 24. Each mounting plug 20 is provided with a rib (not shown) that enables the mounting plug to be securely located in the corresponding hole 22 in the seat riser platform 12.

Two anti-slip pads 26 are attached to the underside of each peripheral member 12b, in order to improve grip of the seat riser 10 on the rim of a toilet bowl.

The toilet seat riser 10 may be injection, blow or rotation moulded from any suitable material as known to the man skilled in the art, such as high density polyethylene.

Referring to Figure 2, in use, the seat riser 10 is attached between a toilet bowl 40 and a standard toilet seat 42. It will be understood that the same toilet seat 42 may, in the absence of the present invention, be attached directly to the toilet bowl 40 in the known manner, through use of the seat bolts 44. To attach the seat riser 10, the standard toilet seat 42 is therefore removed from the toilet bowl 40. The mounting plugs 20 are rotated within the seat riser platform 12 to adjust the spacing of the mounting holes 24 to correspond with that of the seat bolts 44, and to ensure that the mounting holes 24 are positioned such that the edges of the toilet seat 42, when fitted, correspond most closely with the shape of the peripheral members 12b.

The toilet seat riser 10 and the standard toilet seat 42 are then arranged on the toilet bowl 40 such that the seat bolts 44 pass through the mounting holes 24 in the toilet seat riser 10 and into the mounting holes (not shown) in the toilet bowl 40. The seat bolts are then attached to the toilet bowl 40 in the normal manner, such as through the use of wing nuts. The standard toilet seat 42 remains moveable between lowered (as shown) and raised (not shown) positions, and the attached lid 46 remains useable. The toilet seat riser 10 has increased the effective height of the toilet seat 42 by 2.5 cm. The seat bolts 44 provided with a standard toilet seat 42 are typically long enough to accommodate this increase in height without requiring extension.

It will be seen that the toilet seat riser 10 is largely covered by the standard toilet seat 42 so that it is not readily visible to a casual glance. The embarrassment associated with

having such a device fitted to one's toilet is therefore reduced. In addition, the mounting system shown utilising the existing toilet seat bolts 44 is secure, reducing the risk of movement between the toilet seat riser 10 and the toilet bowl 40. The use of a 'horseshoe' design, with two peripheral members 12b having a gap 16 between their distal ends, enables the toilet seat riser 10 to be used with a variety of shapes and sizes of toilet bowls 40.

In some variants, the upper (in use) surface of the peripheral members 12b may be provided with indentations corresponding to the positions of the anti-slip pads 26 on the lower surface. Thus, when several of the toilet seat risers 10 are stacked together (to achieve a greater raise of the toilet seat height), the interaction of the indentations with the anti-slip pads 26 increases the grip between the individual toilet seat risers 10, preventing lateral relative movement.

CLAIMS:

1. A toilet seat riser for fitting between a toilet bowl and a toilet seat, comprising a seat riser platform; the seat riser platform having a mounting portion defining at least two mounting holes therein to enable the mounting bolts of a toilet seat to pass therethrough, and a peripheral portion comprising at least one peripheral member extending at least partially around a central void and suitable for overlying the rim of a toilet bowl; and wherein the toilet seat riser is no more than 6 cm thick.
2. A toilet seat riser as claimed in claim 1, wherein the toilet seat riser is between 2 and 6 cm thick.
3. A toilet seat riser as claimed in claim 2, wherein the toilet seat riser is 2.5 cm thick.
4. A toilet seat riser as claimed in any preceding claim, wherein the peripheral portion comprises a two peripheral members which together extend only partially around the central void.
5. A toilet seat riser as claimed in claim 4, wherein the two peripheral members are arranged symmetrically at either side of the central void.
6. A toilet seat riser as claimed in any preceding claim, wherein each of the mounting holes is defined within a mounting plug located in the seat riser platform, each mounting plug being rotatable with respect to the seat riser platform, and the mounting hole being spaced apart from the rotation axis of the mounting plug.
7. A toilet seat riser for fitting between a toilet bowl and a toilet seat, comprising a seat riser platform; the seat riser platform having a mounting portion defining at least two mounting holes therein to enable the mounting bolts of a toilet seat to pass therethrough, and a peripheral portion comprising at least one peripheral member extending at least partially around a central void and suitable for overlying the rim of a

toilet bowl; and wherein each of the mounting holes is defined within a mounting plug located in the seat riser platform; each mounting plug being rotatable with respect to the seat riser platform; and the mounting hole being spaced apart from the rotation axis of the mounting plug.

8. A toilet seat riser for fitting between a toilet bowl and a standard toilet seat connectable to the toilet bowl by means of a standard fixing, wherein in use the toilet seat riser extends substantially around the rim of the toilet bowl and is held in place by means of the standard fixing.

9. A toilet seat riser substantially as herein described with reference to the accompanying Figures.

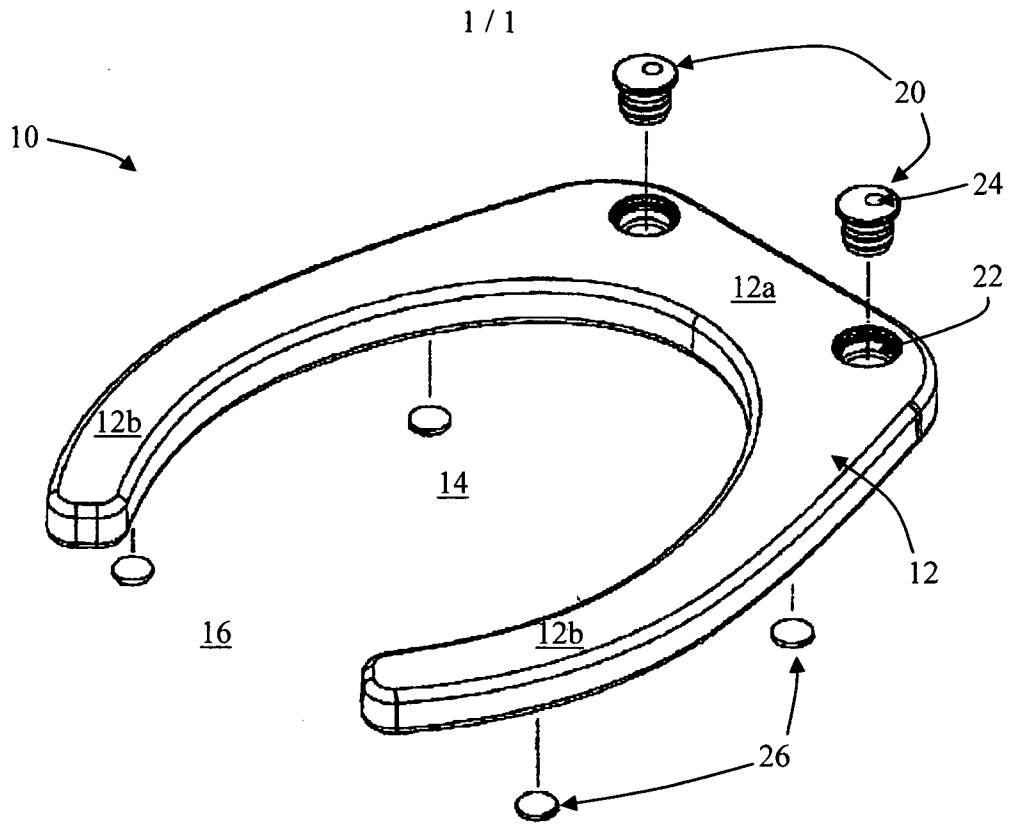


Figure 1



Figure 2

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2009/002601

A. CLASSIFICATION OF SUBJECT MATTER
INV. A47K13/00 A47K13/28

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 A61G

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

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

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	EP 2 014 209 A (BEL ART PROD INC [US]) 14 January 2009 (2009-01-14) column 4, paragraph 39 column 5, paragraphs 42,43; figures 1,2	1-3,8
Y	US 2 980 922 A (TAYLOR HOMER H) 25 April 1961 (1961-04-25)	1-3
X	column 1, line 49 - column 2, line 46; figures 1-3	8
A		7
Y	DE 297 18 180 U1 (KLOEBER MARTIN [DE]) 11 February 1999 (1999-02-11)	1-3
X	the whole document	8
X	US 4 213 211 A (BEMIS RICHARD A [US] ET AL) 22 July 1980 (1980-07-22)	8
A	column 4, lines 1-53; figures 1-5	1,7
	-/--	

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

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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.</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 20 January 2010	Date of mailing of the international search report 05/02/2010
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040. Fax: (+31-70) 340-3016	Authorized officer Fajarnés Jessen, A
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INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2009/002601

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	CA 1 302 657 C2 (NELSON ALBIN [CA]) 9 June 1992 (1992-06-09) page 2, line 36 - page 3, line 2 page 4, lines 6-10; figures -----	8 1,7

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2009/002601

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: 9
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-6

A toilet seat riser for fitting between a toilet bowl and a toilet seat, comprising a seat riser platform; the seat riser platform having a mounting portion defining at least two mounting holes therein to enable the mounting bolts of a toilet seat to pass therethrough, and a peripheral portion comprising at least one peripheral member extending at least partially around a central void and suitable for overlying the rim of a toilet bowl; and wherein the toilet seat riser is no more than 6 cm thick.

2. claim: 7

A toilet seat riser for fitting between a toilet bowl and a toilet seat, comprising a seat riser platform; the seat riser platform having a mounting portion defining at least two mounting holes therein to enable the mounting bolts of a toilet seat to pass therethrough, and a peripheral portion comprising at least one peripheral member extending at least partially around a central void and suitable for overlying the rim of a toilet bowl; and wherein each of the mounting holes is defined within a mounting plug located in the seat riser platform; each mounting plug being rotatable with respect to the seat riser platform; and the mounting hole being spaced apart from the rotation axis of the mounting plug.

3. claim: 8

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 9

Claim 9 does not contain any clear technical features defining a subject-matter but only refers to the description and drawings. Thus a reasonable search concerning this claim is not possible. (Rule 6.2(a) PCT)

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2)PCT declaration be overcome.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

A toilet seat riser for fitting between a toilet bowl and a standard toilet seat connectable to the toilet bowl by means of a standard fixing, wherein in use the toilet seat riser extends substantially around the rim of the toilet bowl and is held in place by means of the standard fixing.

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Independent claims 1, 7 and 8 have the following subject-matter in common:

-a toilet seat riser for fitting between a toilet bowl and a toilet seat.

Such a toilet seat riser is already known, e.g from all the documents cited in the search report and from US 5 251 338, cited by the applicant in the description.

As a result, there is no technical relationship among these inventions involving one or more of the same or corresponding special technical features (Rule 13.2 PCT). Moreover, neither the first nor the third inventions have special technical features, i.e. those technical features that define a contribution over the prior art, i.e. over the documents cited in the search report, as the subject-matter of claims 1 and 8 does not involve an inventive step or is already known from these documents.

Therefore, the separate inventions described in claims 1, 7 and 8 are not so linked as to form a single general inventive concept (Rule 13.1 PCT).

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/GB2009/002601
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2014209	A	14-01-2009	AU 2008203055 A1
			CA 2636935 A1
			US 2009013454 A1
US 2980922	A	25-04-1961	NONE
DE 29718180	U1	11-02-1999	NONE
US 4213211	A	22-07-1980	NONE
CA 1302657	C2	09-06-1992	NONE