May 22, 1951 R. R. RICHARDS ET AL 2,554,422

TOILET ATTACHMENT

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Fig. 1.

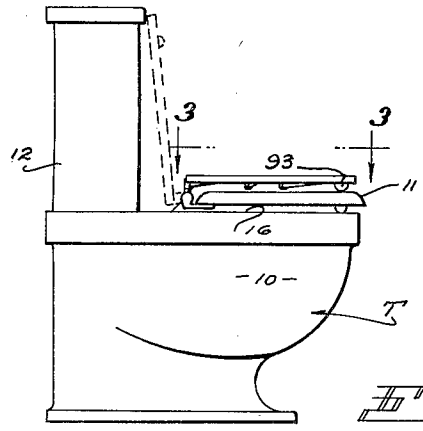


Fig. 2.

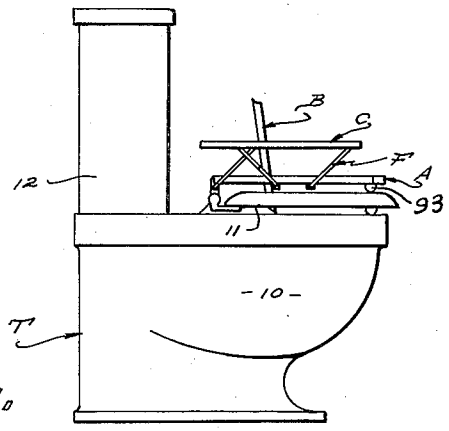


Fig. 3.

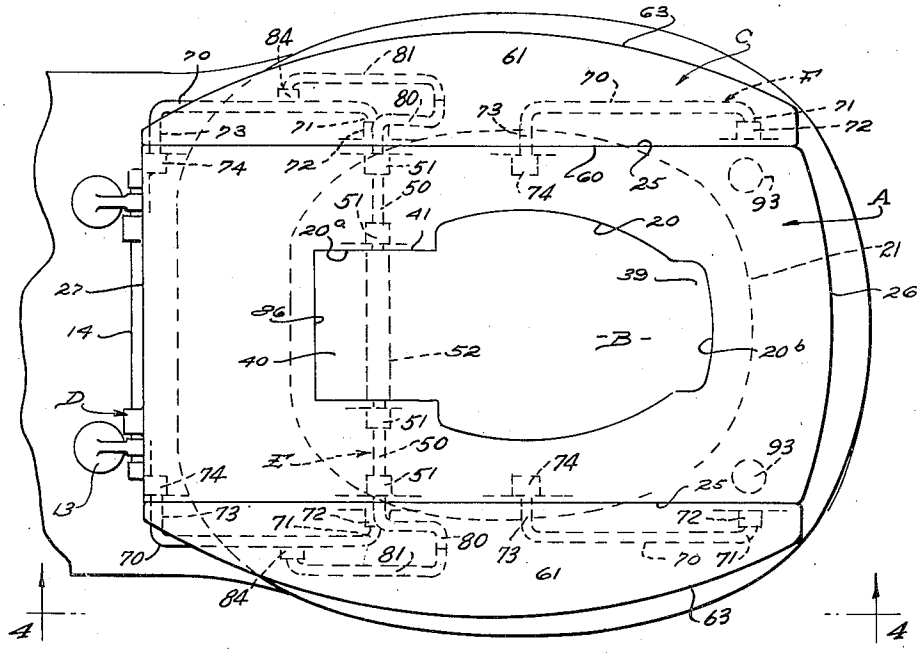
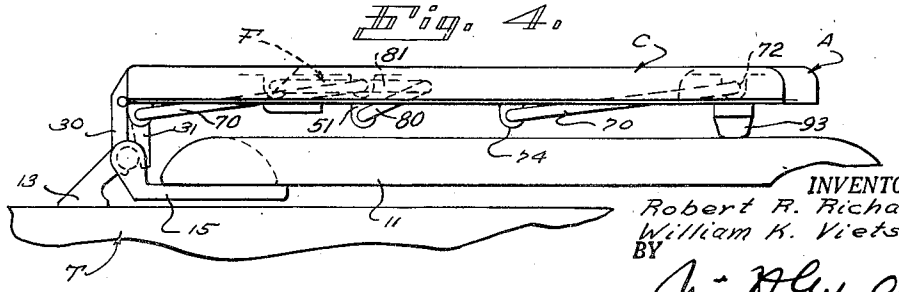


Fig. 4.



INVENTORS
Robert R. Richards
William K. Vietsch.
BY
Attorney

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Fig. 5.

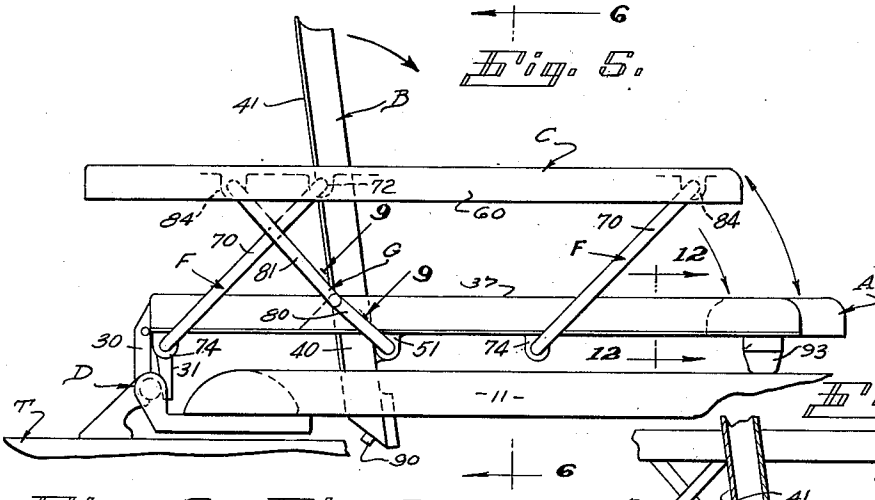


Fig. 7.

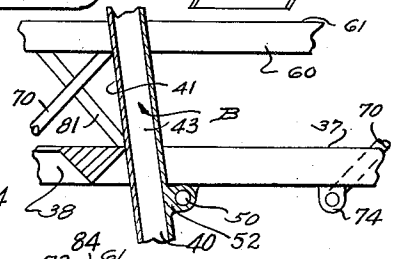


Fig. 8.

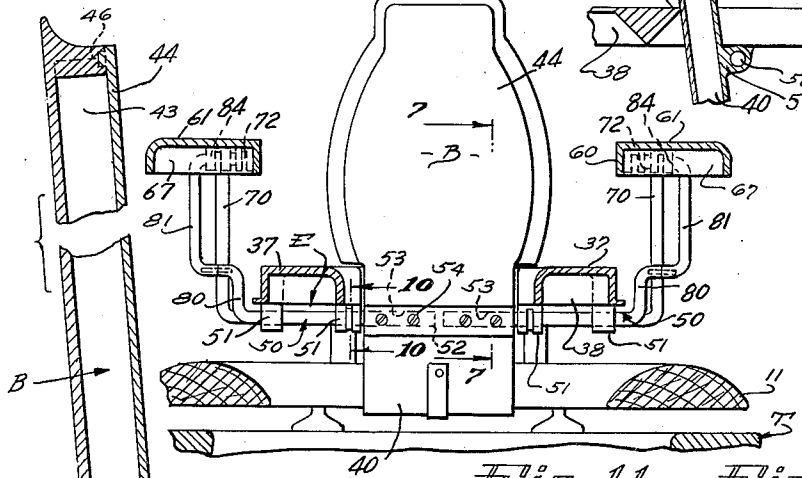


Fig. 6.

Fig. 11.

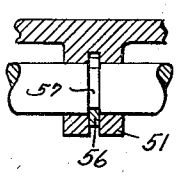


Fig. 10.

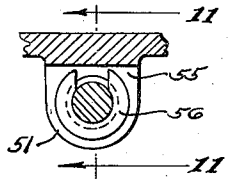


Fig. 9.

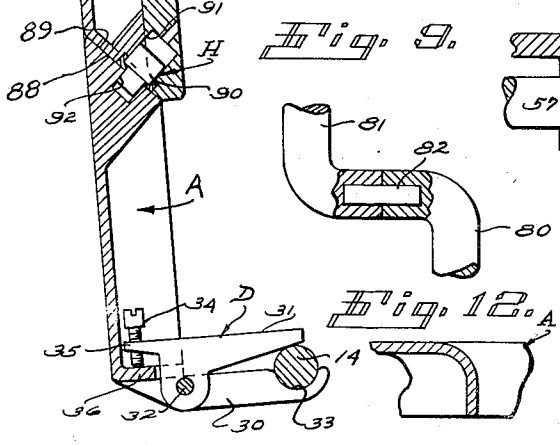


Fig. 12.

INVENTORS
Robert R. Richards
William K. Vietsch
BY
Attorney

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UNITED STATES PATENT OFFICE

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TOILET ATTACHMENT

Robert R. Richards and William K. Vietsch,
Long Beach, Calif.

Application July 18, 1949, Serial No. 105,340

4 Claims. (Cl. 4—239)

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This invention has to do with a toilet attachment, and it is more specifically concerned with the provision of an attachment for a toilet bowl to cooperate with the bowl and with the usual seat provided in connection with the bowl to form a cover for the seat and to be operable to serve as a child's seat. A general object of this invention is to provide a structure of the general character referred to which is simple and inexpensive to manufacture, and which is neat and compact and highly practical both as a toilet seat cover and as a child's toilet seat.

The device of the present invention is characterized generally by a plurality of sections including a main or seat section with an opening therein of a size suitable for use by a child, a back section which serves, when in its normal position, as a closure for the opening in the seat section, and as a back or back rest when the structure is used by a child, and arm sections which serve as extensions or continuations of the seat section when in their normal positions, and which serve as retainers or arm rests when the structure is in use by a child. In addition to the several sections named, the structure involves means pivotally connecting the seat section to the toilet bowl, means pivotally connecting the back section to the seat section, coupling means joining each arm to the seat section so that the arm is maintained parallel with the seat section at all times, operating means coupling the back section and the arms so that these sections work in synchronism, and latch means coupling the back section and seat section so that these sections do not shift relative to each other when the structure is used as a conventional cover for the usual toilet seat.

In accordance with the invention, the several sections are preferably formed with flat tops which occupy a common plane when the structure is used as a seat cover, and the various means or connections between the sections are located at the under sides thereof or are so related to the sections as to be concealed when the structure is serving as a cover over the usual toilet seat.

A general object of the present invention is to provide a toilet attachment of the general character referred to herein which involves few simple parts which are economical to manufacture and are such as to provide a construction that is simple and convenient to clean and maintain in a sanitary condition.

Another object of the invention is to provide a structure of the general character referred to

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herein which is safe and dependable to use. The structure of the present invention can be used in the manner of an ordinary toilet seat, in which case it simply swings or operates as a unit or unitary assembly without relative movement between its various parts, and when it is used as a child's toilet seat, the back section is up providing a back rest, and the arms are up and spaced apart so that the child is positioned between them and is thus retained against falling or becoming displaced from the seat.

Another object of the invention is to provide a structure of the general character referred to herein which is characterized by various features of construction and arrangement of parts which serve to provide a construction that is particularly sightly and is entirely free of complicated, ungainly or cumbersome features such as generally occur in devices of this general character.

Another object of this invention is to provide a structure in the nature of a cover operating in conjunction with an ordinary toilet seat to form a cover therefor, and operable as a child's toilet seat having a back with a depending portion forming a shield. In the preferred form of the invention, the depending portion of the back extends into the opening of the usual toilet seat, and the cover structure and the usual toilet seat are carried by a common bracket or mounting.

The various objects and features of our invention will be fully understood from the following detailed description of a typical preferred form and application of the invention, throughout which description reference is made to the accompanying drawings, in which:

Fig. 1 is a side elevation of a typical toilet bowl showing it equipped with the usual toilet seat and showing the attachment of the present invention in a normal or down position serving as a cover for the usual toilet seat, the attachment being indicated in dotted lines in an up or open position to which it has been swung or moved as a unit after the fashion of an ordinary toilet seat cover. Fig. 2 is a view similar to Fig. 1 showing the attachment of the present invention actuated or opened to serve as a toilet seat for a child, in which position of the device the back is up and the arms are elevated. Fig. 3 is an enlarged detailed plan view of the attachment of the present invention, being a view taken substantially as indicated by line 3—3 on Fig. 1. Fig. 4 is a side elevation of the structure shown in Fig. 3, being a view taken as indicated by

line 4—4 on Fig. 3. Fig. 5 is a view similar to Fig. 4 showing the structure when actuated to the position shown in Fig. 2 of the drawings, in which position the structure is adapted to serve as a child's seat. Fig. 6 is a transverse sectional view of the structure shown in Fig. 5 being a view taken as indicated by line 6—6 on Fig. 5. Fig. 7 is an enlarged, fragmentary, detailed sectional view taken as indicated by line 7—7 on Fig. 6. Fig. 8 is an enlarged, fragmentary, detailed sectional view showing the seat section and the back section latched together to thus hold the sections of the structure against relative movement, and showing the latched engagement between the parts when said parts are in a position such as that shown in Fig. 5 of the drawings. Fig. 9 is an enlarged, fragmentary, detailed view of a portion of the structure shown in Fig. 6, being a view taken as indicated by line 9—9 in Fig. 5. Fig. 10 is an enlarged, fragmentary, detailed sectional view taken as indicated by line 10—10 on Fig. 6. Fig. 11 is a fragmentary, sectional view taken as indicated by line 11—11 on Fig. 10, and Fig. 12 is an enlarged, fragmentary, detailed section taken on line 12—12 on Fig. 5.

The structure of the present invention is intended primarily as an attachment for, or to be used in connection with, the usual toilet and more particularly with the usual toilet seat bowl and the toilet seat that is commonly provided in connection therewith. In the drawings we have illustrated a typical or conventional toilet T having the usual upwardly opening bowl 10 with a usual or conventional seat 11. The particular fixture or toilet seat T shown in the drawings is equipped with, or includes, a tank 12 that is carried by, and projects upwardly from, the rear portion of the structure. The present invention is not concerned with the details of construction or formation of the toilet seat 11 nor with its mode of connection with the bowl 10. However, the invention is particularly practical as applied to an ordinary or conventional type of toilet construction, and therefore we have shown the usual or conventional toilet seat 11 coupled to the bowl 10 by brackets 13 which are carried by the bowl and project upwardly therefrom to carry a bar 14 that receives hinge brackets 15 that carry the seat 11. The bar 14, in accordance with usual construction, is a horizontally disposed member that extends transversely of the toilet immediately to the rear of the opening in the top of the bowl 10, and said bar is spaced somewhat above the top 16 of the bowl.

The attachment provided by the present invention involves, primarily, a plurality of cooperatively related sections, and in the preferred form of the invention, the several sections have flat tops which normally occupy a common plane, and the sections are so related or cooperatively engaged that their top surfaces form a flat, smooth, continuous, cover-like structure when the tops of the several sections are in their normal positions. In the preferred form of the invention, there is a main or seat section A with an opening 20 through it, which opening 20 is positioned over the opening 21 of the usual toilet seat 11; a back section B which, when in its normal position, lies within the opening 20 and forms a back or back rest in conjunction with the seat section; and arm sections C which, when in their normal positions, form lateral extensions or continuations of the seat section A and, when actuated, form arm rests which are spaced

apart and extend lengthwise of, and above, the seat section A. The present invention provides means D (see Fig. 8) pivotally connecting the seat section A with the toilet bowl 10 or to the rod 14 on said toilet bowl, which bowl or rod is provided with the usual seat 11; means E pivotally connecting the back section B and the seat section A on an axis that extends transversely of the structure and is so located that the back section B is movable between the positions shown in Figs. 1, 3 and 4 of the drawings and the position shown in Figs. 2 and 5 of the drawings; coupling means F joining each arm section C to the seat section A so that each arm section C will remain parallel to said seat section as each arm section C operates between a normal position in the plane of the seat section A and a working position where it is located substantially above said seat section; operating means G coupling the back section B and the arm sections C so that these sections of the structure operate together or in synchronism; and latch means H acting between or coupling the back section B and seat section A to hold these sections against relative movement when the structure is being used in the manner of an ordinary toilet seat cover.

The main or seat section A is the main section of the structure, and is an elongate, flat-topped element preferably having straight, flat, vertically-disposed sides 25, a somewhat rounded forward end 26, and a straight transverse rear edge 27. In length, the seat section A may be substantially equal to that of the usual toilet seat 11, whereas in width, it is preferably somewhat narrower than the usual toilet seat as shown throughout the drawings.

The opening 20 in the seat section A is preferably shaped and proportioned to be suitable for use by a child, and said opening has a rear extension 20^a which has parallel, vertical, flat sides accommodating therebetween a rear extension of back section B. In the form of construction illustrated, the forward end portion 20^b of the opening 20 is shaped to accommodate a suitable shield such as is commonly employed in connection with toilet seats provided for children. It is preferred in practice that the edges or edge portions of the opening 20 subject to being engaged by the user of the seat be rounded, as shown in Fig. 12 of the drawings. From the foregoing description, and from consideration of the drawings, it will be apparent that the opening 20, and any parts or extensions thereof, may be shaped and proportioned as circumstances require, the particular shape or design of opening illustrated in the drawings being merely typical of a form of the invention suitable for general use.

The seat section A may be formed of various materials or combinations of materials. In the case illustrated, the section A is shown as a unitary element or casting and when so constructed or formed, it may be advantageously made as a shell with a flat, smooth top 37 and with suitable cavities or recesses 38 entering it from its under side so that it is light and involves a minimum amount of material.

The means D pivotally connecting the seat section A to the toilet bowl 10 may vary widely in form and construction. Where the usual toilet seat 11 is carried by a rod 14 as above described, it is preferred that the means D pivotally connect the section A with the rod 14. In the case illustrated in the drawings, the means

D is in two units that engage spaced parts of the rod 14, preferably parts on the rod immediately inside the brackets 13, and each of these units of means D involves two cooperating arms 30 and 31. This construction is best illustrated in Fig. 8 of the drawings wherein it will be apparent that arm 30 is in the form of a bracket or integral projection located at the rear end portion of the seat section A, while the arm 31 is mounted to pivot relative to the arm 30. The arm 31 is shown as pivoted to arm 30 by a pivot pin 32, and the outer end portions of the arms receive the rod 14 therebetween. In the case illustrated, one of the arms 30 or 31 has its outer end portion recessed as at 33 to grip or hold the rod 14, while the other arm opposes the recessed part 33 and serves to hold the rod 14 in the recess 33. In accordance with the invention, a suitable means is provided for operating the arms into suitable engagement with the rod 14 so that the rod is confined between the arms in a manner to allow the seat section A to swing or pivot between the positions indicated in solid and in dotted lines in Fig. 1 of the drawings. In the case illustrated, an operating screw 34 is carried by an extension 35 of arm 31 and it is so positioned as to engage the rear flange portion 36 of the seat section A. When the screw 34 is advanced, the arm 31 is moved toward the arm 30.

The back section B is preferably a flat unitary element with a main or central portion corresponding in size and shape to the opening 20 so that it seats or nests therein as shown throughout the drawings. A forward extension 39 of section B extends into and occupies the extension 20^b of opening 20, and a rear extension or tongue-like part 40 extends rearwardly from the main or central portion to fit into and occupy the rearward extension 20^a of opening 20. The tongue-like extension 40 has flat, parallel, vertical sides 41 which fit between the sides of extension 20^a of opening 20. The back section B has a flat smooth top 41 which preferably lies in the same plane as the top 37 of the seat section A when the sections A and B are in their normal positions, as shown in Figs. 1, 3, and 4 of the drawings.

The back section B, like section A, may vary widely in form and construction, it being preferred, however, that it be a simple unitary element cast of a suitable material, in which case it is preferably hollowed out from its under side to have a cavity 43. To provide a comfortable back rest or support for the user, the back section B may be provided with a suitable bottom 44, which bottom closes the cavity 43 and presents a smooth outer surface or face suitable for engagement by the back of the user when the device is in use.

In the particular case illustrated, the bottom 44 is shown formed separate from the other portion of the section B and is joined thereto by suitable fastening means at 46.

The means E pivotally connecting the back section B with the seat section A connects these sections on an axis that extends transversely of the structure, and the desired connection is preferably established by a split shaft 50 which is received in a suitable boss mounted on the under side of the rear end portion or extension 40 of the section B and in spaced bearings 51 at the bottom or under side of the seat section A. In the preferred form of the invention and to facilitate assembly, the shaft 50 is composed of two parts which are separable and which engage the back section B from opposite sides or edges. In the case illustrated, the back section B has a tubular boss 52 rigidly secured to the under side of the extension 40 of back section B, and the inner end portions of the two parts comprising shaft 50 are engaged in openings 53 in opposite ends of the boss 52 where they are made fast, or are secured, by set screws 54 or the like. The outer or projecting portions of the parts comprising shaft 50 are rotatably engaged in the bearings 51. In the form of the invention illustrated, one of the bearings 51 carrying one part of shaft 50 is provided with a recess 55 that receives a split collar 56 tightly engaged on the shaft part located within the bearing. In the preferred construction, each of the parts comprising shaft 50 is provided with a groove 57 adapted to receive a split collar 56. Through this construction, each part of shaft 50 is maintained in a bearing 51 against axial movement, while being free to rotate in the bearing as the back section B is swung or operated relative to the seat section A.

The arm sections C are elongate parts located at the sides of the seat section A, and they have longitudinal, flat, vertically-disposed inner sides or edges 60 which oppose, and are close to, the sides 25 of section A when the arm sections are in their normal positions, as shown in Fig. 3 of the drawings. The arm sections C each have flat tops 61 which preferably are positioned in the plane of the top 37 of section A when the arm sections are in their normal positions. The outer edges 63 of the arm sections C are preferably curved to conform somewhat with the curvature of the usual toilet seat 11 and so that the structure, when in the normal position as shown in Figs. 1, 3 and 4, has the general shape and proportioning of the usual toilet seat cover. The arm sections C, like the other sections of the structure, may be formed in any suitable manner. When they are formed as by casting, it is preferred that they have openings or cavities 67 entering from their lower or under sides, as shown throughout the drawings.

The coupling means F joining the arm sections C with the seat section A connect the sections so that the arm sections C are operable to a position well above the seat section A, while being maintained parallel with said seat section.

The means F coupling each arm section C with the seat section A preferably involves two like links 70 each having one end pivoted to an arm section while the other end is pivoted to the seat section A. The links 70 are spaced apart longitudinally of the structure, and each of said links has a trunnion-like projection 71 at its forward end rotatably carried in a bearing 72 in the forward end portion of the arm section C. A trunnion-like projection 73 at the rear end of each link 70 is rotatably engaged in a bearing 74 depending from the seat section A adjacent edge 25. When the arm sections C are in their normal positions, as shown in Figs. 3 and 4, the forward links 70 are inclined slightly from a true horizontal position to extend forwardly and upwardly from the bearings 74 to enter the cavities 67 in the under side of the arm sections C where the bearings 72 are located.

The rear links 70 may be the same as the forward links just described, that is, each rear link 70 may have a trunnion-like part 71 projecting from its forward end to be carried in a bearing 72 in an arm section C, while a trunnion-like part 73 projects from the rear end portion of each rear link 70 to be carried in a bearing 74 depending from the seat section A at the rear

end portion thereof. The four links 70 are preferably of equal length so that the arm sections C are maintained parallel with the seat section A as said arm sections are operated between positions such as are shown in full lines in Figs. 1 and 2 of the drawings. In practice, the trunnion portions of the links 70 may be secured in the bearings through the same construction that is shown in Figs. 10 and 11 of the drawings to retain said trunnion portions within the bearings while permitting relative rotary movement therebetween.

The operating means G couples the back section B and the arm sections C so that they operate in synchronism relative to the seat section A when the structure is operated between the positions shown in full lines in Figs. 1 and 2 of the drawings. In the preferred form of the invention, the operating means G involves a crank action, and in the case illustrated, crank arms 80 are provided on the outer ends of the two parts comprising the shaft 50, which outer ends are positioned beyond the edges 25 of the seat section A and are so positioned that they are beneath the arm sections C. Connecting links or rods 81 connect the cranks 80 with the arm sections C. Each connecting rod 81 has one end pivotally connected to the outer end of a crank arm 80 as by a pivot pin 82, while its other end is pivotally connected by a bearing 84 at the under side of the arm section C. In the case illustrated, the pivot pin 82 provides a dowel-like connection between the crank arm 80 and connecting rod 81 which allows for the desired pivotal movement of these parts, while the connecting rod 81 is pivotally held in bearing 84 through construction such as is shown in Figs. 10 and 11 of the drawings to retain the connecting rod within its bearing while permitting relative rotary movement therebetween.

In accordance with the present invention, the pivotal axis established by shaft 50 is located somewhat below the seat section A, and when the back section B is swung to the up or working position shown in Fig. 5, it abuts against the rear edge or wall 86 of extension 20a of opening 20 in seat section A. When the back section B is thus stopped in operating position, the crank arms 80 have moved to a position where the arms 80 and connecting rods 81 are slightly over or past center, as shown in Fig. 5, thus locking the mechanism against accidental movement or collapse. To operate the structure from the position shown in Figs. 2 and 5 back to the normal position, it is necessary to deliberately swing the back section B forward in the direction indicated by the arrow in Fig. 5, in order to carry the operating means past center.

The latch means H shown in detail in Fig. 8 of the drawings serves to latch the back section B against movement relative to the seat section A and therefore to lock the entire assembly of sections against relative movement between the sections so that the structure can be conveniently operated as an ordinary seat cover for the usual toilet seat 11 when it is not desired to be operated as a toilet seat for a child. The means H is preferably a gravity actuated means, and in the form of the invention illustrated, the rear edge or wall 86 of the opening extension 20a in the seat section A is under cut or downwardly and rearwardly inclined, as shown at 88, and the rear edge or wall 89 of the extension 40 of section B is correspondingly beveled to seat against wall 88 when the sections A and B are in their normal relationship. The means H involves a gravity actuated latch 90 carried in a guideway 91 in the back section B to operate into keeper opening 92 in the seat section A. In the preferred arrangement, the latch 90 is carried in a guideway 91 to be operated by gravity to project from wall or face 89 and into the keeper opening 92 in wall or face 88. With the gravity actuated latch means H, the latch 90 engages and locks the sections A and B against relative movement when the section assembly has been lifted upwardly by means of the seat section A from the normal horizontal position shown in Figs. 1 and 4 of the drawings to the position shown in dotted lines in said Fig. 1. The latch 90 will remain engaged and hold the seat sections A and B against relative movement as the assembly of sections is moved to a position such as is shown in dotted lines in Fig 1, and until said sections are returned toward their normal position.

It is to be observed that the present invention provides a unique cooperative relationship between the attachment which serves as a cover for the usual toilet seat 11, and said toilet seat. When the attachment, which is of sectional construction as above described, is serving as a cover for the toilet seat 11, as is shown in full lines in Fig. 1 of the drawings, it rests on the toilet seat 11 when in the down position, and in that position suitable pads or bumpers 93 on the bottom of the attachment rest on the top of the toilet seat 11, preferably at the forward end portion thereof. When the attachment is positioned to accommodate a child, the parts are in the position illustrated in Figs. 2 and 5. From Figs. 2 and 5 it will be observed that the back section B not only forms an effective back rest or rest against which a child may lean, but the extension or portion 40 of the back section B depends well below the seat section A and, in the case illustrated, it even depends into the opening of the seat 11, thereby forming a protective shield.

In operating the assembly of sections as a cover for the usual toilet seat, the assembly is operated by engaging the seat section A. When the structure is to be operated or opened up to act as a toilet seat for a child, it is operated by means of, or by engaging one or both of, the arm sections C. When the arm sections C are moved up or lifted, they move relative to the seat section A thereby operating the crank arms 80 and connecting rods 81 and causing the back section B to swing up toward its working position until movement of said back section is stopped in the manner hereinabove described.

Having described only a typical preferred form and application of our invention, we do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to ourselves any variations or modifications that may appear to those skilled in the art and fall within the scope of the following claims.

Having described our invention, we claim:

1. A toilet attachment including an elongate seat section having an opening therethrough, arm sections at the sides of the seat section, and a back section shaped to engage in the opening in said seat section, means connecting the back section to the seat section whereby said back section may move relative to said seat section between a position closing said opening and a position in which said back section projects upward from said seat section, a pair of links con-

necting each arm section to the seat section whereby said arm sections may move relative to said seat section between a position adjoining the sides of the seat section and a position higher than the seat section, and operating means connecting the back section and arm sections to operate said sections simultaneously, said operating means including a crank.

2. A toilet attachment including an elongate seat section having an opening therethrough, arm sections at the sides of the seat section, and a back section shaped to engage in the opening in said seat section, means connecting the back section to the seat section whereby said back section may move relative to said seat section between a position closing said opening and a position in which said back section projects upward from said seat section, means connecting the arm sections to the seat section whereby said arm sections may move relative to said seat section between a position adjoining the sides of the seat section and a position higher than the seat section, and operating means connecting the back section and arm sections to operate said sections simultaneously, said operating means including a crank operating with the back section and linked to an arm section.

3. A toilet attachment including an elongate seat section having an opening therethrough, arm sections at the sides of the seat section, and a back section shaped to engage in the opening in said seat section, means connecting the back section to the seat section whereby said back section may move relative to said seat section between a position closing said opening and a position in which said back section projects upward from said seat section, means connecting the arm sections to the seat section whereby said arm sections may move relative to said seat section between a position adjoining the sides of the seat section and a position higher than the seat section, and operating means connecting the back section and arm sections to operate said sections simultaneously, said operating means including two like cranks operating with the back section

and connecting rods between said cranks and said arm sections.

4. A toilet attachment including an elongate seat section having an opening therethrough, arm sections at the sides of the seat section, and a back section shaped to engage in the opening in said seat section, means connecting the back section to the seat section whereby said back section may move relative to said seat section between a position closing said opening and a position in which said back section projects upward from said seat section, means connecting the arm sections to the seat section whereby said arm sections may move relative to said seat section between a position adjoining the sides of the seat section and a position higher than the seat section, and operating means connecting the back section and arm sections to operate said sections simultaneously, said operating means including pivotally connected members operating to an overcenter position when the back section and arm sections are in their uppermost positions.

ROBERT R. RICHARDS.
WILLIAM K. VIETSCH.

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