

Oct. 17, 1961

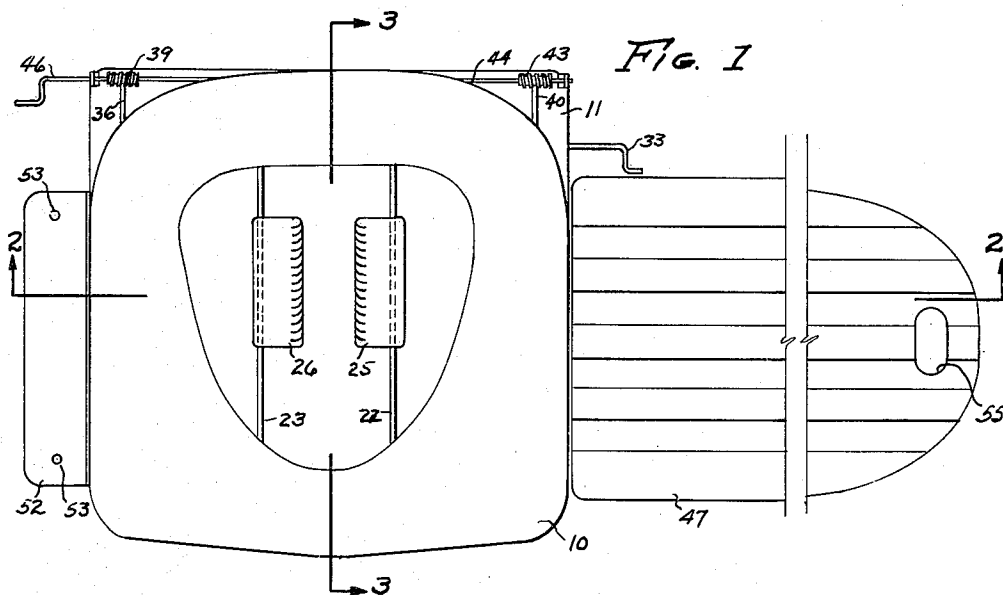
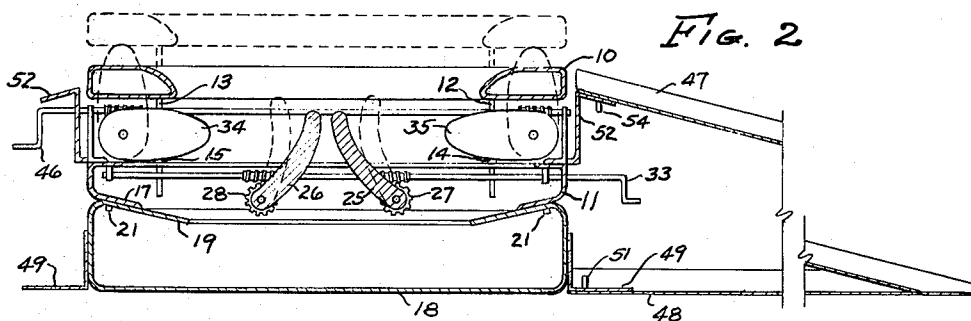
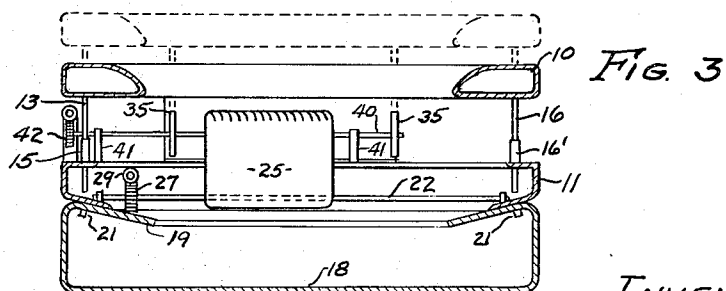
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3,004,534

MASSAGING APPARATUS FOR TOILETS

Filed Jan. 14, 1959

2 Sheets-Sheet 1



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MASSAGING APPARATUS FOR TOILETS

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2 Sheets-Sheet 2

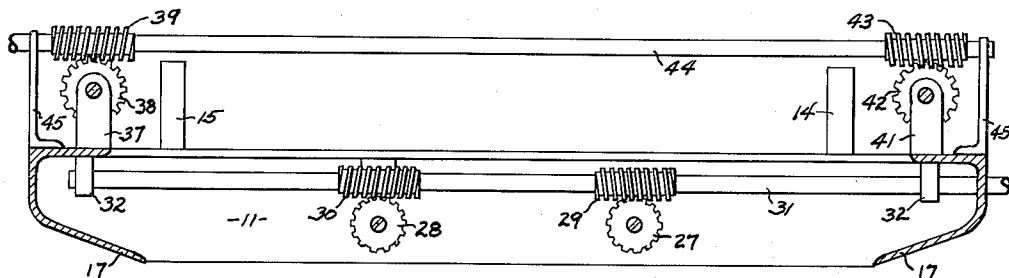


FIG. 5

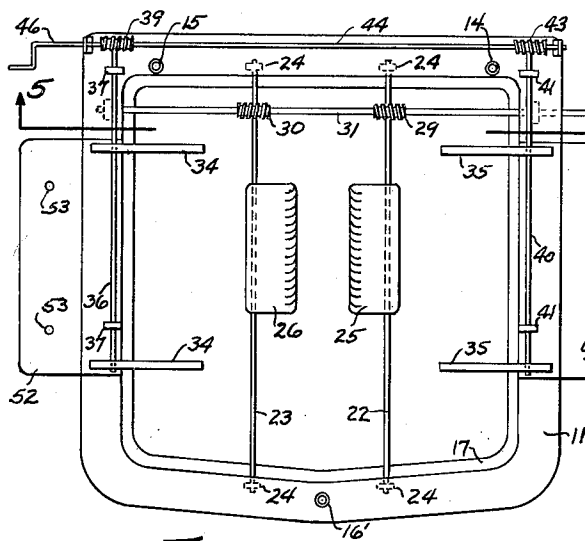


FIG. 4

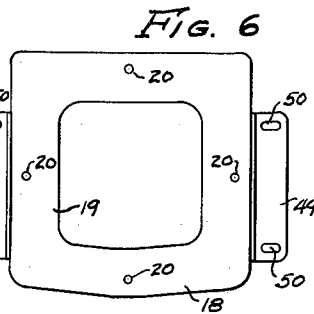


FIG. 6



FIG. 7

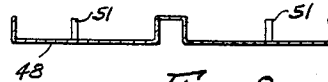
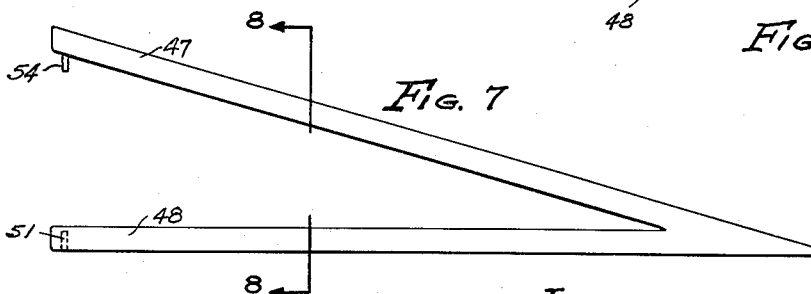


FIG. 8



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MASSAGING APPARATUS FOR TOILETS
Milton H. Gottberg, 904 S. 2nd St., Fairfield, Iowa
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5 Claims. (Cl. 128-24)

My invention relates in general to an improved toilet and bed pan construction, and more particularly to apparatus of this nature, which is effective and beneficial in stimulating evacuation, relaxing the perineal areas and providing comfort and assistance to the bedfast and physically weak or disabled patient.

It has long been recognized that physical stimulation of the area adjacent the rectum and of the buttocks is effective in relieving constipation, known as costiveness, stimulating bowel movement and in aiding the release of intestinal gases. This is particularly the case with bedfast patients where normal routine and physical activity is absent, and a general lowering of muscle tone and vigor and insufficient intestinal peristalsis has resulted. The massaging of the anal regions and buttocks serves to relax the anal sphincter and stimulates intestinal peristalsis, and previous efforts to accomplish this purpose mechanically have largely been unsuccessful due to the complexity and cumbersome nature of the apparatus, thus precluding its use with the seriously ill, aged, convalescent or patients bedfast for other disabling reasons.

My invention therefore contemplates a rectal massaging apparatus which can be attached easily to a bed pan or other toilet receptacle, which is sanitary and capable of being completely sterilized and disinfected under hospital use, and which may be adjusted quickly to suit the individual and can be manually operated and controlled by the patient or individual to the extent each individual may desire or require.

Briefly, the invention comprises an adjustable toilet seat which can be raised or lowered at the will of the operator so that contact by a pair of relaxing members with the rectal region and buttocks will be effected to the degree and pressure desired. The massaging members are then moved in an in-and-out motion to stimulate the rectum and encourage bowel movement, release of gas and perineal relaxation. The speed or frequency and pressure exerted by the relaxing members is under control of the patient, nurse or user at all times. In addition, a slide or ramp is provided for moving and sliding patients on to the seat which is of great advantage in the case of the very ill or physically disabled since in ordinary hospital practice this may take two or three nurses or aides in extreme cases of illness.

In addition to the objects of my invention as enumerated above, it is an object to provide a compact bed toilet structure of material having sanitary qualities which can be completely sterilized and disinfected after each use, as required in hospital practice.

It is a further object to provide a toilet and a manually operable dilating or relaxing apparatus for use therewith which is sectional, easily disassembled for storage, rugged and compact and designed with a minimum of complex operating features.

It is a further object of my invention to provide an apparatus including plurality of manually operable massaging and relaxing members associated with a toilet construction and arranged to relax muscular tension in the rectal areas and stimulate evacuation.

It is still another object of my invention to provide a bed type toilet construction having an adjustable seat and provided with attachable ramp means for ease in handling physically infirm patients.

Other objects and advantages will be apparent from a description of the subject invention, and my invention will be better understood from the following detailed descrip-

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tion thereof taken in connection with the accompanying drawings, and its scope will be pointed out in the appended claims.

Referring now to the drawing, FIGURE 1 is a top plan view of my invention showing the bed ramp attached thereto and in position for use.

FIGURE 2 is a cross-section in elevation of my invention taken along the section lines 2-2 of FIGURE 1.

FIGURE 3 is a cross-section in elevation of my invention taken along the section lines 3-3 of FIGURE 1, this view being 90° rotated with respect to FIGURE 2.

FIGURE 4 is a top plan view of the intermediate and lower portions of my invention having the toilet seat removed therefrom.

FIGURE 5 is a cross-section view in elevation of my invention and taken along the section lines 5-5 of FIGURE 4.

FIGURE 6 is a top plan view of the bottom portion, the pan or receptacle part of my invention.

FIGURE 7 is a side elevation view of the detachable ramp for use with my invention, and FIGURE 8 is a cross-section view of the ramp as shown in FIGURE 7 taken along the section lines 8-8 of FIGURE 7.

With reference to FIGURE 1 and FIGURE 2 of the drawing, I have shown a toilet seat 10 of more or less conventional shape and construction which is supported above an intermediate rectangular frame indicated generally at 11 by means of a plurality of posts, 12 and 13, which are slidable in a pair of sleeves 14 and 15 respectively, said sleeves being firmly secured in the intermediate frame 11.

Reference to FIGURE 4 will show in plan view the sleeves 14, 15 and also a third supporting post 16 and associated sleeve 16' positioned at the front edge of the seat 10 and frame 11, as seen in FIGURE 3, thereby providing a three-point guided sliding suspension for the seat 10. The seat 10 is preferably formed of hollow construction having a central aperture as shown and should be fabricated of stainless steel or some other well-known noncorrosive material which can be easily cleaned and disinfected, and which will withstand the high temperature required for sterilization.

The intermediate frame 11 which is shown in plan view on FIGURE 4 is of generally rectangular formation and includes an inwardly turned downwardly extending inner edge 17 around its entire perimeter which forms a resting and supporting surface to position the intermediate frame 11 upon a container or receptacle such as a conventional hospital bed pan 18 which is shown in plan view in FIGURE 6.

The upper surface of the receptacle and bed pan 18 is provided with an intumed peripheral edge 19 thus defining a central aperture in the receptacle 18 and spaced at each side in the upper surface of this edge 19 are four holes 20 which are designed to receive corresponding studs or bosses 21 provided in the under surface of the frame 11, which can be seen on FIGURES 2 and 3 of the drawings. By this means the entire intermediate frame 11 is firmly and securely positioned upon the pan 18 and prevented from any sidewise or slipping motion relative thereto. It is apparent that with certain changes in securing means, the frame 11 can be easily attached to a toilet bowl or any other receptacle.

Attention is now directed to FIGURE 4, and it will be noted that a pair of transverse shafts 22 and 23 are centrally positioned across the frame 11 and rotatably mounted in bearings 24 at each end thereof, said bearings being firmly secured to the under surface of the frame 11. A pair of right- and left-hand massaging or manipulating members 25 and 26 respectively are securely affixed to the shafts 22 and 23 respectively by means of keys or set screws and are centrally located as shown in

FIGURE 1 beneath the aperture in the seat 10, and have a generally arcuate formation as shown in cross-section in FIGURE 2. It is also desirable that the members 25 and 26 be provided with smooth ridges or convolutions at their free ends, as shown, to provide a gentle gripping action when in use.

The operating shafts 22 and 23 for the members 25 and 26 are each provided with a spur gear 27 and 28 secured near the rear end of said shafts, which spur gears are arranged to mesh with a pair of worm gears 29 and 30, the worm gears 29 and 30 being right- and left-hand thread and securely mounted on a transverse shaft 31 which is also rotatably mounted in bearings 32 at each end of said shaft 31, said bearings 32 being secured to the underside of the top of the intermediate frame 11. The transverse shaft 31 which carries the worm gears 29 and 30, extends at one end thereof outwardly from the intermediate frame 11 and is provided at its outer end with crank 33 for manual operation by the user or an attendant.

From the description thus far, it will be apparent that as the crank 33 is rotated, the worm gears 29 and 30 will cause rotation of the spur gears 27 and 28 respectively and in opposed directions, and consequent rotation of the shafts 22 and 23 together with the manipulating members 25 and 26 which are carried by said shafts. Thus, rotating the crank 33 in one direction will cause the members 25 and 26 to move toward each other and a reverse rotation of the crank results in the opposite movement of the members 25 and 26 away from each other. By this means, a kneading or massaging or manipulating action of back and forth movement can be obtained on the upper surfaces of the members 25 and 26.

Reference to FIGURE 2 will show the position of the members 25 and 26 in the semi-closed position in full lines, and in the open position in dotted lines, which approximates the range of motion which is desired to impart to these members.

In order that the user or bedfast patient may have the apparatus adjusted for most convenient and comfortable operation, I have provided means for manually raising or lowering the toilet seat 10 with relation to the operating ends of the members 25 and 26. This is accomplished by means of the cams, as best seen in FIGURE 2, of which a pair 34 is provided on the left side of the frame 11 and another pair 35 is provided on the right side of the frame 11. For example, the cams 34 are rigidly secured to a transverse shaft 36 which is rotatably mounted in bearings 37 secured to the upper surface of the intermediate frame 11, as seen in FIGURE 4, and the shaft 36 is further provided with a spur gear 38 at one end thereof which is clearly shown in FIGURE 5. This gear 38 is in mesh with a left hand worm gear 39 and a corresponding mechanical arrangement is provided on the right side of the frame 11 wherein the cams 35 are secured to a transverse shaft 40, parallel to shaft 36, which in turn is mounted in bearings 41 secured to the upper surface of the frame 11, and said shaft 40 is further provided with a spur gear 42 at one end thereof. The gear 42 is in mesh with a right-hand worm gear 43, both of the worm gears 39 and 43 being keyed or secured to a transverse shaft 44 which is carried by bearings 45 also secured to the upper surface of the frame 11. As shown in FIGURES 4 and 5 the left end of the shaft 44 is provided with a crank 46 arranged for manual operation, so that by rotating the crank 46 in one direction the cams 34 and 35 are both caused to turn upwardly and outwardly whereas rotation of the crank in the reverse direction causes the cams 34 and 35 to return to the normal inwardly pointing downward position.

As described heretofore the seat 10 which is carried by the posts 12, 13 and 16, in guides 14, 15 and 16', is capable of easily being raised and lowered in these guides, and in assembling the apparatus the seat is placed in position with the supporting posts sliding in the guides 14,

15 and 16' whereupon the under surface of the seat 10 will rest upon the upper surface of the cams 34 and 35, thus by rotating the cams the contour of the cams will continue to bear against the under surface of the seat 10 causing it to raise and thus can be raised to any desired position of height up to the full travel of the cams 34 and 35.

Since the mechanism is operated by a worm and spur gear drive, no locking means are required to maintain the seat in any desired position since the worm gear itself is not susceptible of being turned or rotated by any force exerted by the associated spur gear, and there is no tendency for the crank 46 and shaft 44 to unwind.

A further part of this invention lies in the use of a readily detachable ramp or slide which is particularly useful in the case of very ill, feeble or physically disabled patients, particularly where they are completely bedfast and unable to physically assist themselves. This provides assistance and means for the attendant or nurse to easily slide the patient onto the apparatus since the bed pan apparatus can be placed beside the patient in the bed, the ramp easily attached and the patient then gently and easily pushed up the ramp into position on the toilet seat.

FIGURE 7 shows a side view of the ramp forming a part of my invention which is of general open V-shaped construction consisting of a top part 47 and a base member 48 being rigidly joined at one end thereof. The ramp is preferably made of stainless steel or other light non-corrosive metal and in the normal position the aperture between the ends of the arms 47 and 48 is less than the distance to which they will be spread upon attaching to the bed pan and frame, thereby automatically serving to clamp and secure the ramp to the bed pan apparatus.

Reference to FIGURE 2 and FIGURE 6 will show that the bed pan receptacle 18 is provided on each side thereof with a base flange 49 which flange has a pair of slots 50 near each end thereof designed to engage positioning pins 51 which extend upwardly from the inner end surface of the lower arm 48 of the ramp. These pins 51 are also shown in FIGURE 8. The upper arm 47 of the ramp is likewise attached to the entire apparatus by means of the upwardly and outwardly extending flange 52 which is secured to each side of the intermediate frame 11 and which also is provided with a pair of holes 53 for receiving the securing and centering pins 54 which are affixed to the under surface of the outer end of the arm 47 of the ramp. Thus, in attaching the ramp it is only necessary to spring the arms 47 and 48 apart slightly engaging the pins 51 and 54 into their respective slots 50 and 53 whereupon the ramp is securely fastened to the entire assembly.

The use of slots 50 is advantageous since it allows a limited amount of flexing and related motion of the ramp with respect to the remaining assembly. From the foregoing it is apparent that the ramp can easily be attached to either side of the frame 11 and pan 18 assembly.

As shown the upper arm 47 of the ramp may be of corrugated or convoluted cross-section as seen in FIGURE 8 since it is found that sliding action is superior and handling of the patient is easier than when a completely flat smooth surface is used. This additionally provides rigidity and strength in the ramp, thus enabling it to be made of structurally lighter and thinner material. If desired a hand grip aperture 55 may be provided in the outer end of the ramp to facilitate handling.

As has been pointed out on several occasions heretofore, it is anticipated that this construction and apparatus will find considerable use in hospitals, convalescent homes and in non-ambulatory cases whereby one frame and seat apparatus may be used with numerous receptacles to provide this service to numerous patients. Therefore, it is most essential and imperative that the entire apparatus be susceptible of thorough cleaning and sterilization in between periods of use. For that reason,

it is desirable that all parts be made of non-corrosive metals which can easily be sterilized, cleaned and kept bright and which will withstand the temperatures incurred in sterilization and various solutions used for sterilizing and antiseptic purposes. It is suggested that materials such as stainless steel, Monel and other stainless alloys of this nature are preferred for use in all parts of the apparatus.

A further advantage in this construction is that the apparatus is easily disassembled, the toilet seat portion 10 being easily removable from its guides 14, 15 and 16' and the operating mechanism and intermediate frame 11 being easily removed from the receptacle or pan 18. Thus, the separate parts of this apparatus can be individually sterilized and cleaned and also this construction lends itself to simplification in manufacture and ease of storage.

From the foregoing description, it will be apparent that this apparatus performs a valuable service and is an aid in assisting nature, particularly in the case of debilitated and bedfast patients. The apparatus lends itself to precise adjustment as to the height of the seat above the relaxing members 25 and 26 and by careful operation of the crank 33 a gentle massaging and relaxing action may be transmitted to the buttocks and rectal regions of the patient, thus stimulating and encouraging natural processes. The detachable ramp or slide is also of considerable value in handling patients and as shown and described, it can quickly be attached or removed from either side of the apparatus and serves also as a steadying support for the entire assembly when being used in a bed having relatively soft characteristics, the slide or ramp tending to increase the size of the base for stability.

While I have shown and described a particular and preferred embodiment of my invention, it will be apparent to those skilled in the art that certain changes and modifications may be made therein without departing from my invention in its broader aspect and I therefore aim in the appended claims, to cover any such changes and modifications as may be made without departing from the true spirit and scope of this invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. An article of manufacture comprising a substantially rectangular intermediate frame, a toilet seat movably supported on said frame, manual operating means for varying the spacing of said seat with said frame, a substantially rectangular receptacle having closed bottom and sides and a top portion with a centrally located aperture therein, positioning means for securing said frame to said receptacle, a pair of transverse shafts extending across the central portion of said frame, an arcuate shaped member secured to each shaft centrally thereof, means for effecting movement of said arcuate members toward each other and away from each other, said last named means including a manual operated crank assembly, a base flange secured to one side of said receptacle, an upper flange secured to the corresponding side of said intermediate frame, and a V-shaped ramp arranged for attachment to said flanges including a plurality of positioning pins carried by the open end of said ramp arranged for cooperation with spaced apertures on said base flange and upper flange.

2. An apparatus for massage of the rectum comprising a substantially rectangular intermediate frame, a toilet-type seat construction movably supported above said frame, manual operating means for varying the vertical spacing of said seat relative to said frame, a receptacle having closed bottom and sides and a top portion with a centrally located aperture therein, positioning means for securing said frame to the upper surface of said receptacle, a pair of transverse shafts extending across the central portion of said frame, an arcuate shaped massage member secured to each shaft centrally thereof, means for effecting movement of said arcuate members

toward each other and away from each other, a pair of base flanges secured to opposite sides of said receptacle, and a pair of upper flanges secured to the corresponding sides of said intermediate frame, and a V-shaped ramp arranged for attachment to said flanges including a plurality of positioning pins carried by the open end of said ramp arranged for cooperation with spaced apertures on said base flanges and upper flanges.

3. An apparatus for rectal therapy comprising a substantially rectangular intermediate frame, a toilet seat movably supported in guides on said frame, manual operating means including a plurality of cams for varying the spacing of said seat with said frame, a substantially rectangular receptacle having closed bottom and sides and a top portion with a centrally located aperture therein, positioning means for securing said frame to said receptacle, a pair of transverse shafts extending across the central portion of said frame, an arcuate shaped massage member secured to each shaft centrally thereof, means for effecting clockwise and counter-clockwise rotary movement respectively of said arcuate members toward each other and away from each other, said last named means including a manually operated shaft with gear drive, a V-shaped ramp arranged for attachment to said frame and receptacle whereby said ramp is positioned sloping upward to and on a level with said toilet seat.

4. An apparatus for relaxing and massaging the rectum comprising a substantially rectangular intermediate frame, a toilet seat construction movably supported in sliding guides on said frame, manual operating means for varying the vertical spacing of said seat with said frame, including a plurality of eccentric cams carried by a pair of transverse shafts secured to said frame, a substantially rectangular receptacle having closed bottom and sides and a top portion with a centrally located aperture therein, positioning means including spaced pins for securing said frame to said receptacle, a pair of transverse shafts extending across the central portion of said frame, a spur gear on one end of each shaft, an arcuate shaped member secured to each shaft centrally thereof, and means for effecting movement of said arcuate members toward each other and away from each other, said last named means including a manually operated shaft having a right-hand and a left-hand worm gear thereon in mesh with said spur gears.

5. An apparatus for relaxing and massaging the rectum comprising a substantially rectangular intermediate frame, a toilet seat construction movably supported in sliding guides on said frame, a manual operating means for varying the vertical spacing of said seat with said frame, including a plurality of eccentric cams carried by a pair of transverse shafts secured to said frame, a substantially rectangular receptacle having closed bottom and sides and a top portion with a centrally located aperture therein, positioning means including spaced pins for securing said frame to said receptacle, a pair of transverse shafts extending across the central portion of said frame, a spur gear on one end of each shaft, an arcuate shaped member secured to each shaft centrally thereof, and means for effecting movement of said arcuate members toward each other and away from each other, said last named means including a manually operated shaft having a right-hand and a left-hand worm gear thereon in mesh with said spur gears, a base flange secured to opposite sides of said receptacle and an upper flange secured to opposite sides of said intermediate frame, a V-shaped ramp arranged for attachment to said flange including a plurality of positioning pins carried by the open end of said ramp arranged for cooperation with spaced aperture on said base flange and upper flange.

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