This invention relates to plumbing fixtures and particularly to a sanitary attachment for a toilet bowl. An object of the invention is to provide a sanitary attachment for a toilet bowl which has principal use and its widest application for invalids. The attachment provides means by which an armless person may cleanse himself after defecating. One of the features of the invention is that the cleaning pad has means by which it is automatically cleaned.

A further object of the invention is to provide a toilet bowl with fittings by which an invalid may perform all of the necessary actions in using only his feet. Mechanical aids constitute the invention, one being arranged to operate the flush handle and another being to cleanse the user after defecating. The latter function is achieved by a rotating pad that moves from an inoperative lateral position in a toilet bowl to an operative approximately centered position and which is motor operated. At the same time that the pad is rotating it automatically becomes cleaned by one or more of a variety of structures.

A further object of the invention is to achieve the above functions by a mechanically simplified organization which is capable of being produced at a reasonable cost, especially in comparison to the functions which it performs, these considered to be very important not only from a physiological standpoint but also from a psychological standpoint.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a top view of a toilet which has a cleaning attachment constructed in accordance with the invention.

Figure 2 is a front view of the toilet and attachment of Figure 1.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a transverse sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a sectional view taken on the line 5—5 of Figure 2 and showing principally the attachment for the toilet.

Figure 6 is an elevational view showing the means for operating the cleaning attachment as a modification of the means shown in Figure 5.

Figure 7 is a fragmentary sectional view showing a modification of the means to clean the rotating pad.

Figure 8 is an elevational view showing a further modification of the means for cleaning the rotating pad.

Figure 9 is a sectional view taken on the line 9—9 of Figure 7.

Figure 10 is a sectional view taken on the line 10—10 of Figure 8.

Figure 11 is an elevational view of another attachment for the toilet whose purpose is to enable the toilet to be flushed by depressing a foot pedal.
Carriage wall 81. Springs 93 and 94 have their ends in contact with mounting plate 60 and wall 81 of carriage 78. These springs function as means to return the carriage after it is moved inwardly toward the toilet bowl for use of the rotating pad 42.

Electric motor 88 is mounted on the bottom of the carriage and is wired through the limit switch 85. A worm 95 and a gear 96 drive enclosed in gear box 97 and mounted on the bottom of carriage 78 or transported on a truck or the like. Another drive connection between the shaft of motor 88 and the shaft 46. The shaft 46 is secured to gear 96 while the shaft of motor 88 is secured to worm 95. Accordingly, when the motor is energized, as by depressing a foot operated switch, the rotating pad is set in motion. When the user desires to move the pad to the operative position at approximately the center line of the toilet bowl, the user depresses the lever 98 which is mounted for pivotal movement on pivot 100 that is secured to mounting plate 60. A cable, cord or the like 102, is secured to the lever 98 and is entrained over a guide pulley 103 between the channels that support the two groups 72 and 74 of rollers. The cable 102 passes through openings in the stand in order to reach the pulley 104. The end of the cable 102 is secured by a bolt 106 or a like fastener, to the wall 81 of the carriage. Therefore, when the lever 98 is depressed, the cable is secured within the toilet bowl thereby moving the sleeve 48, shaft 46 and the pad 42 that is supported by the shaft toward the center line of the toilet. As previously described the stop 84 contacting switch 85 is used to stop the motor. As an alternative which is of equal importance is the described function of switch 85, the limit switch 85 may be used as the starting switch for the motor. In this event the wiring will be such that switch 85 causes motor 88 to be energized only when the rotating pad is in the operative position. There are other ways of wiring the motor and of controlling its energization, many of which are within the contemplation of this invention. There are means in the toilet bowl for automatically cleaning the rotating pad. One embodiment of these means are seen best in Figs. 1, 3 and 4. They consist of a pair of rollers 110 and 112 mounted in an upstanding channel 114 that is anchored, as by bolting, to the bottom of the toilet bowl. The axes of rotation of the rollers 110 and 112 are parallel to the axis of rotation of the pad 42. The periphery of the pad comes in contact with the rollers 110 and 112 and by a squeeze action the pad to become cleansed as is used.

The modifications of the means for cleaning the rotating pad 42. In Figs. 7 and 9 I illustrate a brush 130 which is attached to the bottom of the toilet bowl 10 and whose bristles utilize the periphery of the pad 42 as it is rotated. The distance between the brush and the periphery of the pad is such that the periphery of the pad embeds itself in the bristles of the brush, Fig. 9, during the normal operation of the pad.

Figs. 8 and 10 show a further modification where the rollers of Fig. 1 and the brush of Fig. 8 is substituted by a squeegee 140. The squeegee is secured to the bottom of the toilet bowl and is of approximately V-shape in cross section. The sides of the squeegee have the periphery of the rotating pad 42 movable therein in response to rotation of the part of the squeegee that is used.

Reference is now made to Fig. 6 where there is a further embodiment of the invention illustrated. The lever 98 may be foot operated or operated by some other portion of the anatomy. The lever 150 of Fig. 6 is a modification of the invention when substituted for lever 98. The lever 150 has a foot pedal 152 at one end and is constrained in its movement by support 154. The support is floor mounted and has a spring 156 secured at its end to lever 150 and functions as a return spring. The inner extremity of the lever is mounted for oscillation on pivot pin 158 that is carried by a floor bracket 160 or otherwise suitably mounted. The operation of the lever 150 causes an actuation of carriage 78 in precisely the same manner as the actuation of lever 98.

The foregoing is considered illustrative only of the principles of the invention. Numerous modifications and changes will readily occur to those skilled in the art. For example, one hand operated equipment could be substituted with the electricity is unavailable; and bracket 154 and spring 156 may be omitted since springs 93 and 94 will be sufficient. Therefore, it is not desired to limit the invention to the exact construction and operation shown and described, and all suitable modifications and equivalents falling within the scope of the claims may be made.

Having described the invention, what is claimed as new is as follows:

1. A toilet bowl that has a trap within which there is standing water and a side provided with a passage above the water level, an attachment for the toilet bowl comprising a stand located completely on the exterior of the toilet bowl, a carriage mounted for movement on said stand and disposed entirely on the exterior of the toilet bowl, a motor, a shaft extending through said passage, means exterior of the toilet bowl drivingly connecting said motor to said shaft, means mounting said motor on said carriage for movement toward and away from said side of the toilet bowl wherein the passage is formed, a rotating cleaning disc pad on said shaft and partially submerged in the water in said toilet bowl and adapted to move toward the center line of the toilet bowl in response to movement of said carriage toward said toilet bowl.

2. A toilet bowl that has a trap within which there is standing water and a side provided with a passage above the water level, an attachment for the toilet bowl comprising a stand mounted exteriorly of said bowl, a carriage mounted for movement on said stand, a motor, a shaft extending through said passage, means drivingly connecting said motor to said shaft, means mounting said motor on said carriage for movement toward and away from said side of the toilet bowl wherein the passage is formed, a rotating cleaning disc element on said shaft and partially submerged in the water in said toilet bowl and adapted to move toward the center line of the toilet bowl in response to movement of said carriage toward said toilet bowl, a switch, an electrical circuit having said switch and motor therein, said switch being mounted in the path of travel of said carriage, and the energization of said motor being effected by actuation of said switch.

3. The toilet bowl of claim 1, wherein there are means beneath the water level in said toilet bowl and in contact with said pad when said pad is in at least one position for automatically cleaning said pad beneath the water level while said pad is being rotated.

4. The toilet bowl of claim 3, wherein said pad cleaning means includes a pair of rollers mounted in the water at the bottom of the toilet bowl and against which the periphery of the pad is adapted to engage.

5. The toilet bowl of claim 3, wherein said pad cleaning means includes a brush mounted in the water at the bottom of the toilet bowl and against which the periphery of the pad is adapted to engage.

6. The toilet bowl of claim 3, wherein said pad cleaning means includes a squeegee mounted in the water at the bottom of the toilet bowl and against which the periphery of the pad is adapted to engage.

7. The toilet bowl of claim 2, wherein there is a foot operated lever, mechanical means connecting said foot operated lever to said carriage to move said carriage inwardly toward the toilet bowl, and resilient means connected with said carriage for returning said carriage to the starting position.

8. In a toilet bowl which has a water-containing trap and a bowl structure having a passage in the side thereof, an attachment which includes a mounting plate attached on the exterior of said side of said bowl, a stand attached
to said mounting plate, a plurality of rollers carried by said stand, a carriage mounted for movement on said plurality of rollers, an electric motor on said carriage, a shaft mounted in said passage, a rotating pad on the inner end of said shaft and located in said toilet bowl with a part of the pad submerged in the water of said trap, means drivingly connecting said electric motor to said shaft to rotate said pad, and foot operated means for moving said carriage inwardly toward said toilet bowl to thereby move the rotating pad toward the center line of the toilet bowl while continuing to maintain a part of the pad submerged.

9. In a toilet bowl which has a water-containing trap and a bowl structure having a passage in the side thereof, an attachment which includes a mounting plate attached on the exterior of said side of said bowl, a stand attached to said mounting plate, a plurality of rollers carried by said stand, a carriage mounted for movement on said plurality of rollers, an electric motor on said carriage, a shaft mounted in said passage, a rotating pad on the inner end of said shaft and located in said toilet bowl with a part of the pad submerged in the water of said trap, means drivingly connecting said electric motor to said shaft to rotate said pad, foot operated means for moving said carriage inwardly toward said toilet bowl to thereby move the rotating pad toward the center line of the toilet bowl while continuing to maintain a part of the pad submerged, guide means for said carriage operatively connected thereto, a spring associated with said guide means and reacting on said carriage to return said carriage to the rest position.

10. In a toilet bowl which has a water containing trap and a bowl structure having a passage in the side thereof,