March 8, 1955 H. E. MANNING ET AL 2,703,409

TOILET FIXTURE

Filed Oct. 14, 1949

3 Sheets-Sheet 1

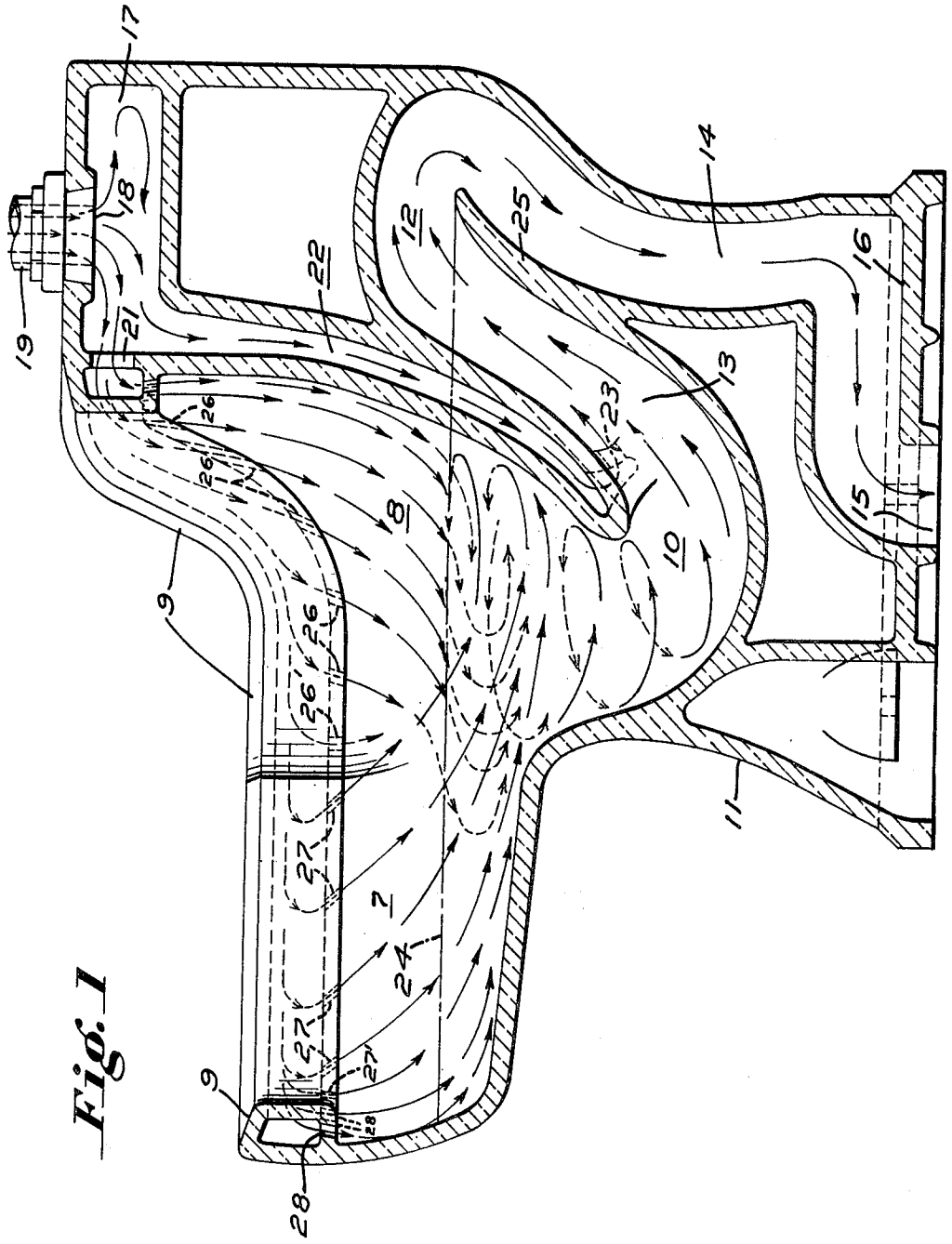


Fig. 1

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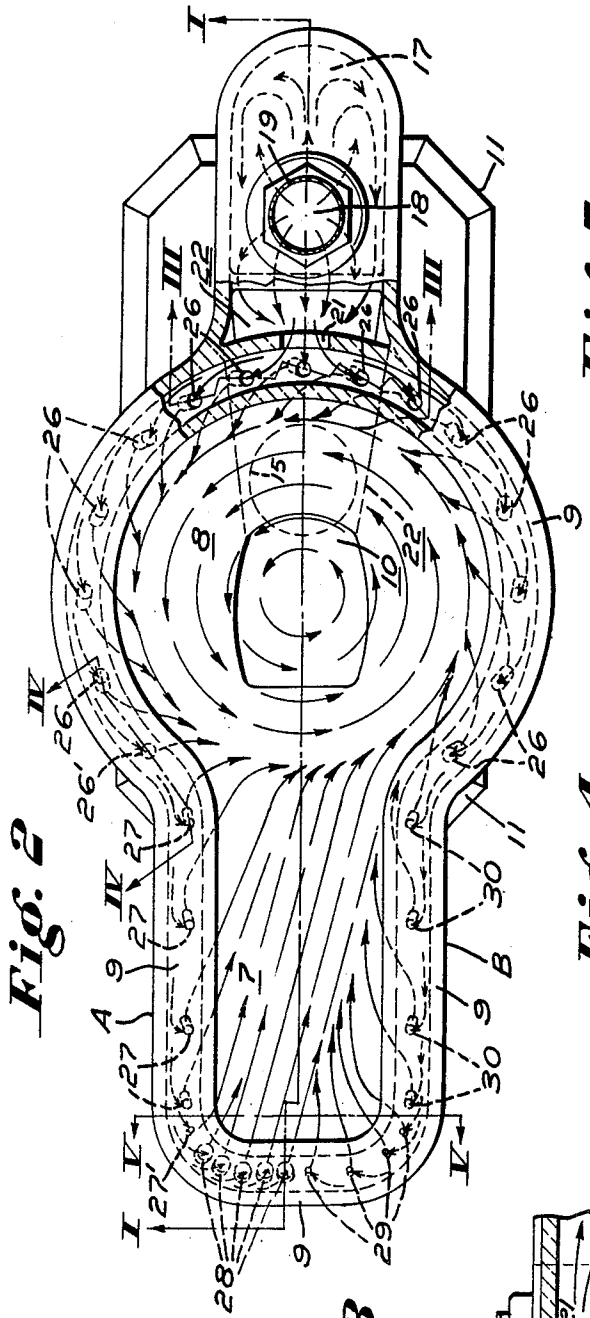


Fig. 2

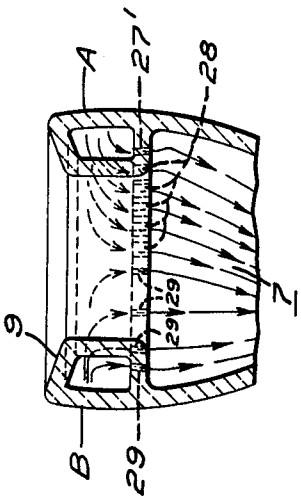


Fig. 5

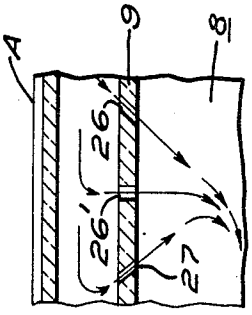


Fig. 4

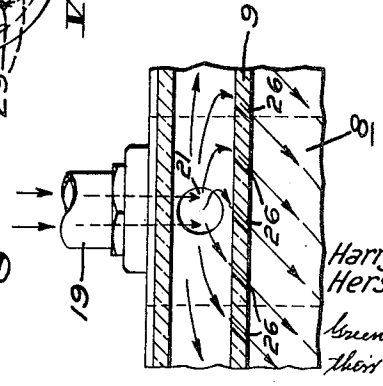


Fig. 3

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Filed Oct. 14, 1949 3 Sheets-Sheet 3

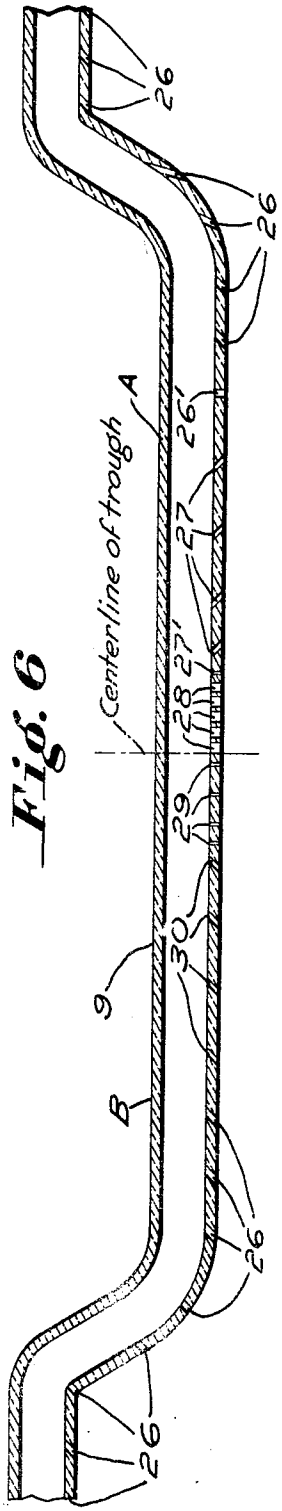


Fig. 6

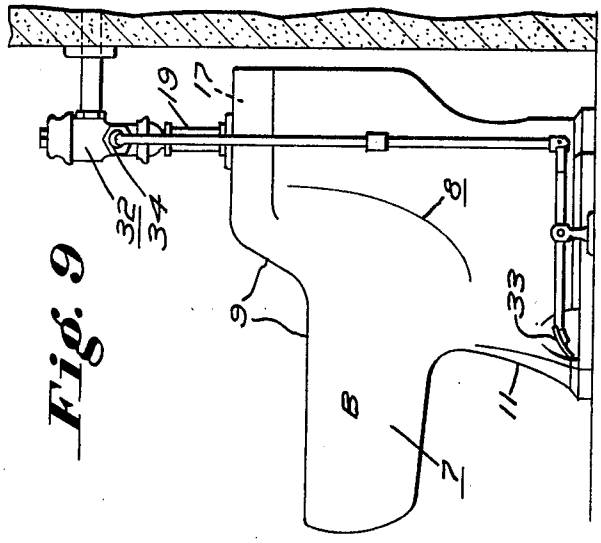


Fig. 9

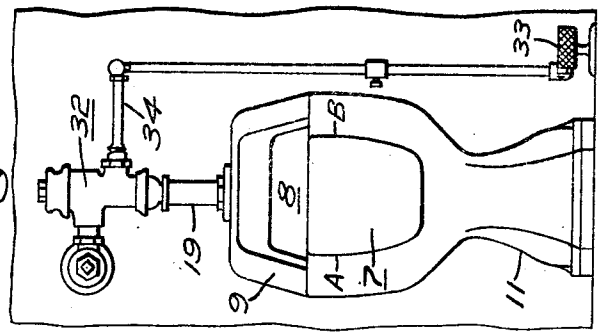


Fig. 8

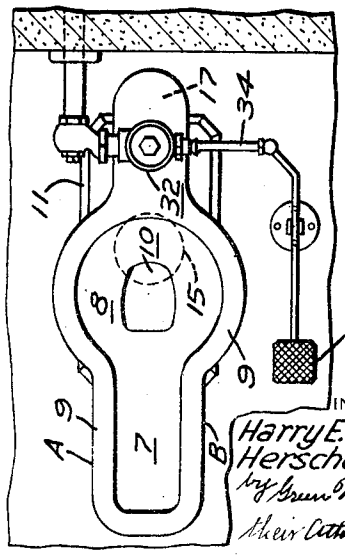


Fig. 7

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United States Patent Office 2,703,409 Patented Mar. 8, 1955

2,703,409

TOILET FIXTURE

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Application October 14, 1949, Serial No. 121,363

5 Claims. (Cl. 4—102)

This invention relates to certain new and useful improvements in toilet fixtures and has for a special object to produce a urinal particularly designed for use by women, and so constructed that when so used it is hygienic, sanitary, and safe and aids in the prevention of the spread of diseases even when installed for use in a public toilet.

A further object resides in the provision of a urinal which may be easily and conveniently used by women without the necessity or danger of the user touching or contacting any portion of the urinal with the concurrent risk of transferring disease germs or bacteria from one user to another.

A still further object is to produce a fixture of the type designated wherein the water-delivery nozzles or apertures thereof are so located, arranged and constructed as to accomplish complete flushing of all portions of the receptacle forming a part of the fixture, and also a complete and adequate washing of all portions of the inner wall or walls of the receptacle.

A still further object is to produce a fixture of the type indicated which is provided with a forwardly projecting, relatively long and narrow extension capable of being easily and readily straddled while the user of the urinal occupies a squatting position, and which forms a part of the receptacle portion of the fixture and receives flushing water under conditions such as to create a sweeping flow diagonally across the bottom thereof and across all portions of the upright wall or walls thereof.

A further object is to provide such a fixture in which the receptacle portion thereof consists of two well defined parts, viz., a bowl which approximates a portion of a sphere and a forwardly projecting extension which approximates a narrow, relatively long and shallow channel in open communication with the bowl.

A further object is to produce a fixture of the type indicated which consists essentially of an open top receptacle consisting of a bowl and a relatively narrow pan to both portions of which flushing water is so delivered as to completely flush and evacuate the pan while maintaining a swirling movement of the flushing water within the bowl and under conditions such as to form a vortex adjacent the bottom of the bowl.

A further object is to provide a fixture of the type indicated which includes as a part thereof an open top receptacle consisting essentially of a bowl and a pan and which is provided with means for simultaneously delivering flushing water to both the bowl and pan under conditions such as to create a vortex action within the bowl which is supplemented to some extent by the movement of flushing water from the pan into the bowl.

A further object is to provide means for effectively and completely flushing a fixture of the type here indicated which is provided with an open top receptacle made up of a bowl shaped portion and a relatively long narrow and shallow extension which communicates with the bowl shaped portion above the bottom thereof.

These and other objects are attained by means of a fixture having the structural and functional features herein described and illustrated in the accompanying drawings. In the drawings,

Figure 1 is a sectional view along the line I—I of Figure 2, and illustrates a fixture embodying our invention.

Figure 2 is a top plan view of the fixture shown in Figure 1, a portion being shown broken away and in section for the convenience of illustration.

Figures 3, 4 and 5 are respectively fragmental sectional views along the lines III—III, IV—IV and V—V of Figure 2.

Figure 6 is a developed longitudinal sectional view of the rim or trough forming a detail of our invention.

Figure 7 is a top plan view on a reduced scale, of a fixture, such as is illustrated in Figures 1 and 2, and shown connected to a water supply pipe equipped with a pedal-actuated control valve.

Figure 8 is a front elevation of the fixture shown in Figure 7, and Figure 9 is a side elevation of the fixture shown in Figures 7 and 8.

All the figures except Figures 6, 7, 8 and 9 are shown in connection with arrows in an attempt to indicate the flow lines of flushing water delivered to and passing through the water-receiving and delivery passages of the fixture during a flushing operation.

The illustrated embodiment of our invention consists of a specially formed water closet in which the water delivery passages, apertures and jets are so formed, positioned and arranged as to accomplish an effective flushing and washing of all interior surfaces of the receptacle forming a part of the closet. This receptacle is somewhat similar to the usual closet bowls in that it is provided with a support which is formed as an integral part of the wall of the receptacle. While the receptacle is similar in some respects to the more or less standard forms of closet bowls, it is of such shape that it is capable of being readily and effectively utilized for the purpose intended.

In the embodiment illustrated, the receptacle portion of the fixture is made up of two essentially distinct parts which, however, merge to form a unitary, open top receptacle, which in plan view appears to approximate the shape of the old conventional form of keyhole. As to this see the plan views of Figures 2 and 7. This characteristic shape is due to the fact that the forward portion of the receptacle consists of a relatively long, narrow and incidently a relatively shallow channel shape portion **7**, whereas the rear portion **8** is generally bowl shape. The walls of both the portions **7** and **8** are such as to produce a receptacle which is characterized by streamlined surfaces. In addition, the two portions, **7** and **8**, are so arranged that their internal surfaces merge under conditions such that the entire interior of the receptacle constitutes flow-directing surfaces which are devoid of flow-disturbing angles, ridges or shoulders. The external surface of the receptacle portion of the fixture is similar to the internal surface in that it is free of projecting shoulders, ribs and corners.

The channel shaped portion **7** of the receptacle, may be more appropriately designated as the receiver or pan. In the illustrated embodiment it is about seven inches wide and is of a length which is more than once and a half its width. Its internal width is about six inches. The upper edge of the pan is about 18 inches above the supporting floor and the entire space below and on both sides of the portion **7** is free and unobstructed and, therefore, provides free access to the fixture and adequate foot space for the user of the urinal. The receptacle is provided with a water-delivery rim or trough **9** which is so formed as to provide a continuous water-delivery conduit or passage around the entire upper edge of the receptacle. This trough **9** over-hangs the interior of the receptacle and its bottom wall is so punched as to provide several series of water-delivery jets or apertures so located and arranged as to deliver flushing water into the receptacle and onto and across substantially the entire inner surface thereof.

In the illustrated embodiment the upper edge of all portions of the extension or pan **7** is horizontal, consequently the upper surface of the trough **9**, contiguous with the pan, extends in a general horizontal direction except that it is downwardly inclined inwardly of the receptacle, as shown in the sectional view of Figure 5. This inclination is preferably carried out throughout the entire extent of the trough.

The bowl **8**, which constitutes the rear portion of the receptacle, is of a form such that at least a part thereof approximates a portion of a sphere. In the illustrated embodiment, the plan view of the receptacle indicates the rim of the bowl as an arc of a circle of about 240 degrees. The rearmost portion of the wall of the bowl **8** is, how-

ever, elevated substantially above the upper edge of the pan **7**. This part of the wall extends upwardly to a substantially horizontal portion about 5″ above the trough surrounding the pan **7**. As a result, the trough **9** associated with the rear wall of the bowl, is elevated and, as shown in Figures 1, 2, 7 and 8 of the drawings, extends in a substantially horizontal direction throughout a circular arc about 120° in length. The portions of the trough **9**, intervening between the rearmost portion of the bowl **8** and the rim or trough of the pan, are downwardly curved so as to merge with the portion of the trough surrounding the pan without interposing, blocking or impeding surfaces which will hinder or retard the flow of water through the trough and into the portion thereof at the front of the pan **7**. It will be understood that the internal surface and consequently the wall of the bowl **8**, follows the curvature of the portion of the trough associated with it, except that the wall converges downwardly and terminates in a trap **10**.

The bowl portion of the receptacle is somewhat smaller than the bowls of modern water closets. The internal diameter (maximum internal width) of the bowl forming a part of the illustrated embodiment, is approximately equal to the maximum internal length of the pan **7**. In view of the fact that there is no clear line of demarkation between the pan and the bowl it may be stated that the maximum internal width of the bowl is slightly greater than the maximum internal length of the pan.

In the illustrated embodiment, a pedestal **11** constitutes the support portion of the fixture. This pedestal is similar in many respects to pedestals which form parts of modern closest bowls, in that it includes within its make-up the trap **10** and a siphon **12**. The up-leg **13** of the siphon communicates with the trap and the down-leg **14** terminates in a port **15** which is adapted to communicate with a soil pipe, not shown. The port **15** is offset—with relation to the major portion of the down-leg **14**—by means of a horizontal shelf **16**. The upper portion of the pedestal is shown as having a water-receiving chamber or passage **17** formed therein which is provided with an inlet port **18** adapted to communicate with a source of water under pressure such as piping **19** illustrated in Figures 1, 2, 7, 8 and 9 of the drawings.

The passage **17** communicates with the water passage of the trough **9**, through an outlet port **21**. It also communicates directly with a jet delivery passage **22** formed in, or immediately adjacent to the rear wall of the bowl **8**. This passage **22** is adapted to deliver flushing liquid in the form of an upwardly directed jet into the up-leg **13** of the siphon. The siphon jet is delivered through an aperture or nozzle **23** appropriately located within the up-leg **13**. All these pedestal passages and connections are more or less conventional. They contribute to the flushing operation of a fixture embodying our invention in substantially the same manner that they contribute to the flushing of an ordinary closet.

It will, however, be apparent that the operation of flushing and of washing the surfaces of the pan **7** and the bowl **8** of a fixture such as is disclosed in the drawings, involves a problem. The flushing liquid must be so delivered—from the standpoint of surface coverage and rate of flow—that it will effectively flush the receptacle and wash all portions of the walls of the receptacle, but at the same time avoid splashing such as would be detrimental to the use of the receptacle. When the flushing operation is completed the pan **7** and the bowl **8** must not contain contaminated water. The problem involved by the flushing operation is occasioned by the fact that the pan is long and narrow and its internal width, at the zone of junction with the bowl, is approximately half the maximum internal width of the bowl.

The normal water level within the receptacle is designated by the dot-dash line **24**, it being apparent that the tip of the partition **25** establishes the normal water level. This partition **25** is formed within the pedestal and separates the up-leg **13** from the down-leg **14** of the siphon. With the water level as indicated, it is apparent that the flushing operation must be such as to not only move a substantial amount of water out of the receptacle but also replace the same with clean or uncontaminated water. To accomplish this it is desirable to deliver flushing water simultaneously to the jet nozzle **23** and the water-delivery ports or apertures of the trough **9**.

As is usual practice, the jet issuing from the nozzle **23** must be such as to effectively initiate an upward flow of

the water within the up-leg **13** of the siphon, and maintain such a flow at least until a siphon action is set up within the passages **13** and **14**. It is also desirable to so deliver the water from the trough to the bowl **8** as to initiate a swirling action within the bowl under conditions such that a whirling funnel-like formation or sheet of water moves downwardly along the walls of the bowl with its vortex disposed in the trap **10** adjacent the inlet to the up-leg of the siphon. This not only contributes to the effectiveness of the siphonic action but it increases the wall washing effectiveness of the water issuing from the trough **9**.

It is apparent that at the beginning of a flushing operation a substantial amount of water is located within the confines of the channel shape pan **7**. This water must not only be flushed out of the pan but its complete removal from the pan must be accomplished early in the flushing operation so that the walls and floor of the pan will be thorough and adequately washed by a free flow of uncontaminated water. While the flushing and adequate washing of a narrow channel such as the pan **7** occasions some difficulty, the real problem is to so discharge the water from the pan during the flushing operation that it will merge with the swirling sheet of water within the bowl **8** without creating turbulence or splashing such as will cause drops or particles of water to rise above the edge of the receptacle. Thus it is essential to so deliver water from the pan **7** into the bowl that it contributes to the movement of the whirling sheet of water, which is initiated by the apertures of the portion of the trough **9** surrounding the bowl **8**.

In order to accomplish all this, i. e., to accomplish a complete flushing of the receptacle and an adequate washing of all portions of the wall thereof, we have employed a special arrangement of trough delivery nozzles or apertures which involves the use of at least five different groups or series of such apertures. As is more or less conventional in the modern water closet, the trough apertures are formed in the lower wall of the trough and are so positioned as to direct the water issuing from them onto adjacent surfaces of the wall of the receptacle. Trough apertures **26** may be designated as constituting the first series. As shown in Figures 2, 3 and 6, these apertures are so positioned and so inclined that they not only deliver water from the trough **9** onto the inner surface of the bowl **8**, but so deliver it that the water is caused to traverse the surface of the bowl in a spiral direction. The direction of movement of the spiral sheet of water is downward and counter-clockwise.

In Figures 2, 4 and 6, a single water-delivery aperture **26′** is shown between the apertures **26** and the second series of apertures **27**. The aperture **26′** is smaller than the apertures **26** but larger than the apertures **27**. It is so positioned as to deliver water vertically downward across the portion of the surface of the bowl **8** which is immediately adjacent to the rear end of the pan **7**. The apertures **27** are shown in Figures 2 and 6, one such aperture being shown in Figure 4. The apertures **27** are spaced along one side wall of the pan **7** and are so located and inclined as to deliver water onto the adjacent wall of the pan in a direction such that it moves obliquely (downwardly and rearwardly), i. e., toward the bottom of the pan and also toward the bowl **8**. These apertures are of less diameter than the apertures **26**, and at the rear or bowl end of the pan, their spacing is somewhat greater than that of the apertures **26**. This spacing, however, decreases toward the forward end of the pan.

A single aperture **27′** is located between the apertures **27** and a third series of apertures, viz., apertures **28**. Aperture **27′**, like aperture **26′**, is so positioned that it merely delivers a downward flow of water across the inner face of the adjacent portion of the wall of the receptacle. It is of somewhat smaller diameter than the apertures **27**.

The apertures **28** are located in the forward portion of the trough **9** at one side of the center line of the trough, i. e., of the longitudinal axis of the pan **7**. They are of larger diameter, and consequently of greater water-delivery capacity, than any of the other water-delivery apertures of the trough. They are closely spaced and are so located that they deliver water vertically downward across the inner surface of half the forward wall of the pan and also across that portion of the inner surface which intervenes between the forward wall and the adjacent side wall of the pan. This side wall of the pan is located on the "oncoming" side of the pan, from the standpoint of

the movement of the swirling sheet of water passing downwardly across the surface of the bowl **8**. It is designated by A in Figures 2, 7 and 8 of the drawings.

The fourth series includes the apertures **29**. These are the smallest of all the water-delivery apertures of the trough. They are illustrated in Figures 2, 5 and 6 of the drawings, are relatively widely spaced and are located on the opposite side of the center line of the trough from the apertures **28**. They are so disposed as to deliver water vertically downward across half of the front wall of the pan and also the curve portion of the wall of the pan which connects the front wall with the lateral wall designated by B in the drawings. The wall B is opposite to the wall A and is the lateral wall away from which the swirling sheet of water moves as it traverses the surface of the bowl **8**, i. e., the wall from which the counter-clockwise flow recedes as it moves from the trough **9** downwardly toward the trap **10** at the bottom of the bowl.

The fifth series of apertures includes the apertures **30**. Their position and inclination with relation to the wall B corresponds to the position and inclination of the apertures **27** with relation to the wall A. They are shown a slightly larger than the apertures **27** and they deliver water obliquely across the inner surface of the wall B with the result that the water so delivered is directed toward the rear end of the pan **7**, i. e., toward the bowl **8**.

As indicated by the arrows of Figures 1 and 2, the water delivered from the trough **9** to the interior of the receptacle occasions a swirling flow within the bowl **8** and a predominantly diagonal flow across the floor of the pan **7** and in a direction such that on leaving the pan and entering the bowl it augments, or tends to augment, the swirling movement of the water within the bowl.

All this is accomplished by properly positioning the various series of apertures and by so proportioning the size, number and spacing of the apertures that they cooperate without occasioning undue turbulence or splashing. As to this it is apparent that the series of apertures **26** which partially surround the bowl **8**, are the swirl-producing apertures. They are so proportioned as to size, spacing and number as to deliver sufficient water to the bowl to accomplish an adequate washing of the walls of the bowl, contribute to the complete flushing of the receptacle and create a well defined vortex at the bottom of the bowl.

The apertures **28** constitute the pan-evacuating series. They are also so positioned as to at least initiate a diagonal flow of water across the slightly inclined floor of the pan **7**. They, therefore, may be termed evacuating and flow-directing apertures. As to the direction of water flow within the pan, it must be borne in mind that the series of apertures **27** plays an important part in creating and maintaining the diagonal direction of flow of the water issuing from the nozzles **28**. As pointed out, the apertures **27** are rearwardly inclined so that they initiate a rearward as well as a downward flow of the water issuing from them. They are apertures of relatively large diameter and their spacing decreases toward the forward end of the pan. The increase in flow occasioned by this change in spacing, and the inward convergence of the wall A toward the bottom of the pan, occasions a crowding action on the part of the water delivered from the apertures **27**, and consequently all these apertures to some extent contribute to deflecting the flow of the larger amount of water issuing from the apertures **28**, so that it moves diagonally across the bottom of the pan. It may, therefore, be said that the apertures **27** are auxiliary flow-directing apertures.

In referring to the functional effect of the apertures **27** and **28** it must be borne in mind that the aperture **26'** contributes to a non-splashing union or merging of the water issuing from the adjacent apertures **26** and **27**. Thus the downwardly directed water from the aperture **26'** is influenced by, and has an influencing effect upon the water issuing from the adjacent aperture **26**. It also has an influencing effect on the water issuing from the rearwardly directed adjacent aperture **27**, with the result that the water from all three apertures tends to move in generally the same direction in passing over adjacent portions of the inner wall of the receptacle. This minimizes turbulence, reduces the tendency toward splashing and contributes to the swirling action of the water moving toward the bottom of the bowl **8**. Thus the single aperture **26'** has a harmonizing effect on the flow issuing from the adjacent apertures **26** and **27**.

The single aperture **27'** washes the inner face of the portion of the pan wall intervening between the series of apertures **27** and **28**. It tends to harmonize the flow issuing from these two series of apertures. It delivers a lesser amount of water than that delivered by each of the adjacent apertures **27** and **28**. It, nevertheless, covers the surface of the front wall of the pan located between the apertures **27** and **28**, and contributes to the flow-directing effect of the apertures **27** on the water issuing from the apertures **28**.

The apertures **29** are in effect "fill-in" apertures. They are so proportioned as to size and spacing that they merely deliver enough water into the pan to adequately wash the adjacent inner wall thereof and at the same time hamper undue spreading of the water issuing from the apertures **28**. Thus, while they contribute to the delivery of flushing water to the receptacle, they do not impede nor hamper the diagonal flow across the bottom of the pan of the water issuing from the apertures **28**.

The apertures **30**, like the apertures **27**, are so positioned and are of such size and spacing as to adequately wash the adjacent wall of the pan and also contribute to the rearward movement of the water traversing the pan. The rearward inclination of the single aperture **30**, which is adjacent the rear end of the pan and consequently adjacent one of the ports **26**, contributes to the harmony of flow of the water issuing from the pan and the water traversing the bowl. Thus it is apparent that each of the trough apertures cooperates with every other trough aperture in producing a substantially non-turbulent and non-splashing flow of water into, through and out of the receptacle during flushing operations.

In Figures 7, 8 and 9, the illustrated embodiment of the invention is shown on a reduced scale and respectively in plan view, front elevation and side elevation. As there shown, the water-delivery piping **19** is provided with a control valve **32** which is adapted to be actuated by a pedal **33**, located at one side of and adjacent to the forward portion of the base or pedestal **11**. As shown, the pedal **33** is located adjacent to but to the rear of the forward face of the pedestal **11** so as to retain clear floor space below and on each side of the pan or forward extension **7**. The pedal is operatively coupled to the actuating handle **34** of the valve **32** by a more or less conventional arrangement of link and lever. The pedal **33** is so located that it is convenient to the left heel of the individual using the fixture.

One aspect of our invention involves the provision for flushing the receptacle of a fixture such as illustrated, i. e., a fixture which includes a substantially round bowl and a relatively long narrow rectangular extension thereof, where the extension projects substantially radially of the bowl and joins the same at a point such that the bottom of the extension is well above the bottom of the bowl. To accomplish complete flushing and adequate washing of the entire inner surface of the receptacle, water is delivered substantially around the entire rim of the receptacle and is so delivered as to create a downwardly directed swirling sheet of water within the bowl and a diagonally directed flow of water across the bottom of the extension which moves into the bowl at an angle to the radius of the bowl at every point of flow from the extension to the bowl, and in a direction such that it contributes to the swirling movement of the water moving toward the bottom of the bowl.

While we have described but one embodiment of our invention, it will be apparent to those skilled in the art that the water receiving chamber **17** may communicate with any source of water supply and that various changes, modifications, additions to and omissions from the structural and functional details of the fixture illustrated may be made without departing from the spirit and scope of the invention as defined by the appended claims.

What we claim is:

1. A sanitary fixture comprising a support having water passages formed therein; an open top receptacle carried by said support and comprising, a bowl shaped portion and a long, narrow, relatively shallow forward extension, one end of which is in open communication with said bowl shaped portion and the bottom of which is elevated above the bottom of said bowl shaped portion; means for delivering a swirling flow of water into and through said bowl shaped portion; and means for delivering a flow of water into the forward end portion of said

extension and diagonally across the bottom thereof into said bowl shaped portion.

2. A sanitary fixture comprising a support standard having water-delivery passages formed therein; an open top receptacle supported by said standard and consisting of a bowl shaped portion and a forwardly extending channel-shaped portion having an internal width about half the maximum internal width of said bowl shaped portion and an internal length approximately twice its width, with the bottom thereof extending substantially horizontally and located above the bottom of said bowl shaped portion, said channel-shaped portion having a forward end wall and the inner end of which is in open communication with said bowl-shaped portion and a trough extending around the open edge of said receptacle, communicating with a water-delivery passage formed in said standard and having a plurality of groups of water-delivery apertures formed in the bottom wall thereof for delivering flushing water to said receptacle and downwardly onto the upright walls thereof, one of said groups extending around said bowl-shaped portion, a separate group extending along the longitudinal edge of each side wall of the channel-shaped portion, and a group along a portion of the said forward end wall and arranged to deliver water into the forward end of said extension and diagonally across the bottom thereof into said bowl-shaped portion.

3. A sanitary fixture comprising an open top receptacle including a bowl shaped portion having an outlet at its lower end and a forwardly extending long, narrow, relatively shallow extension having a bottom wall elevated above said outlet, side walls and a forward end wall merging with said bottom wall, the rear end of said extension in open communication with said bowl shaped portion; a continuous flushing rim coextensive with the upper edge of said bowl shaped portion and the forward and side walls of said extension; a series of water delivery apertures from that portion of the rim adjacent the bowl shaped portion and being angularly inclined to cause a swirling sheet of water which flows spirally down the interior of said bowl shaped portion toward said outlet, a series of water delivery apertures in said rim coextensive with each of said side walls and each inclined to deliver water against the adjacent side wall, toward the bottom of said extension and toward said bowl shaped portion; and water delivery apertures located in the forward portion of said rim directing a flow of water onto the forward wall of said extension and so spaced and positioned with relation to each other to cause a diagonal flow of water across the bottom of said extension and into said bowl shaped portion.

4. A sanitary fixture comprising an open top receptacle including a bowl shaped portion having an outlet at its lower end and a forwardly extending long, narrow, relatively shallow extension having a bottom wall elevated above said outlet, side walls and a forward end wall merging with said bottom wall, the rear end of said extension in open communication with said bowl shaped portion; a continuous flushing rim coextensive with the upper edge of said bowl shaped portion and the forward and side walls of said extension; a series of water delivery apertures from that portion of the rim adjacent the bowl shaped portion and being angularly inclined to cause a swirling sheet of water which flows spirally down the interior of said bowl shaped portion toward said outlet, a series of water delivery apertures in said rim coextensive with each of said side walls and each inclined to deliver water against the adjacent side wall, toward the bottom of said extension and toward said bowl shaped portion; and water delivery apertures from the rim at said end wall of said extension and positioned to cause a diagonal flow of water in said extension and along the bottom thereof toward said bowl shaped portion.

5. A sanitary fixture comprising an open top receptacle including a bowl shaped portion having an outlet at its lower end and a forwardly extending long, narrow, relatively shallow extension having a bottom wall elevated above said outlet, side walls and a forward end wall merging with said bottom wall, the rear end of said extension in open communication with said bowl shaped portion; a continuous flushing rim coextensive with the upper edge of said bowl shaped portion and the forward and side walls of said extension; a series of water delivery apertures from that portion of the rim adjacent the bowl shaped portion and being angularly inclined to cause a swirling sheet of water which flows spirally down the interior of said bowl shaped portion toward said outlet, a series of water delivery apertures in said rim coextensive with each of said side walls and each inclined to deliver water against the adjacent side wall, toward the bottom of said extension and toward said bowl shaped portion; and water delivery apertures from the rim at said end wall of said extension and located on one side of the longitudinal axis of said extension and positioned to cause a diagonal flow of water in said extension and across the bottom thereof and into said bowl shaped portion.

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