This invention pertains to a urinal attachment for conventional toilet bowls and, more particularly, a urinal attachment which is intended to supplement the use of the toilet bowl but, in general, for purposes of ultimate discharge as well as flushing purposes, such attachment utilizes the flushing water supply and discharge facilities of the conventional flush tank and toilet bowl of the type in wide conventional use at present.

As is well known, the normal toilet bowl has a seat thereon usually disposed substantially at a level which is at a comfortable height when an individual is seated thereon. However, the rim of a conventional toilet bowl normally is at a level which is highly unsuited for use for urinal purposes alone, particularly for adult male individuals while standing. This unsuitability arises from the fact that very substantial splashing usually occurs which normally is unnoticed but nevertheless is absorbed by legs of trousers for example. Further, objectionable cascading noise usually accompanies such operation and particularly when exercised under family situations immediately adjacent sleeping quarters, annoyance as well as embarrassment frequently results.

Further, it is well known that in the vicinity of five gallons of water usually is required to flush a conventional toilet bowl, yet the flushing of the same after a single urinary discharge not infrequently constitutes a waste of water, especially in times of dry weather.

Relatively ineffective and crude attempts have been made previously to obviate the nuisance, inconvenience and embarrassment referred to above through the provision of auxiliary or supplementary urinal facilities associated with a more or less conventional toilet bowl. According to the prior art, these facilities, for the most part, have constituted non-readily replaceable discharge conduits or conduits, whereby obnoxious and unsanitary conditions resulted, coupled with the fact that most of these attempts in the past have been unaccompanied by suitable flushing arrangements.

It is the principal purpose of the present invention to provide a highly effective, sanitary, inexpensive, and easily operated urinal attachment for conventional toilet bowls which is capable of being installed readily relative to existing toilet bowls and arranged to provide relatively noiseless use thereof, simple and effective flushing means, and sanitary, expendable and easily disposable conduit means which result in the elimination of any obnoxious odors without incurring substantial expense.

Another object of the invention is to provide, essentially, a bowl-like urinal arrangement adjustably positionable at a suitable height to eliminate the possibility of any appreciable splashing and, in addition to having desirable flushing facilities, the urinal bowl has discharge means which drain into the conventional toilet bowl, so as to minimize the plumbing requirements to install such urinal attachment and also permit extensible and retractable movement of the urinal attachment between operative and inoperative position, whereby the attachment, when in inoperative position, may be enclosed within an appropriate housing so as not only to render the same aesthetically acceptable but also minimize the possibility of objectionable odors being noticeable.

A further object of the invention is to provide several embodiments of flushing means respectively manually operable and automatically mechanically operable, as desired, thereby to extend the acceptable period of use of the disposable discharge conduit or drain duct before replacement of the same is required.

Still another object of the invention is to provide one embodiment of mechanical flushing for the urinal attachment by connecting the same to the conventional water supply system of a normal flush tank, whereby flushing of the attachment occurs each time the conventional toilet bowl is flushed without requiring the discharge of additional water over that normally included in such conventional flushing operations of the normal toilet bowl.

A still further object of the invention is to provide several embodiments of inexpensive, disposable but highly effective drain ducts which, in initial condition, may be flat and compactly packaged so as to prevent no serious storage problem as well as permit ready merchandising thereof, and the means for attaching such duct to the urinal attachment, as well as positioning it relative to the conventional toilet bowl, may be operated quickly and in a sanitary manner.

Still another object of the invention is to provide convenient bracket means to support the urinal attachment relative to a conventional toilet bowl and flush tank to permit both lateral extension and retraction of the urinal attachment between operative and inoperative position and also provide ready vertical adjustment which quickly may be effected to suit any particular user of the same for maximum efficiency and comfort.

Details of the invention and the foregoing objects thereof, as well as other objects thereof, are set forth in the following specification and illustrated in the accompanying drawings comprising a part thereof.

In the drawings:

FIG. 1 is a perspective view showing an exemplary embodiment of urinal attachment incorporating the principles of the present invention and illustrated as being connected to a conventional toilet bowl and flush tank, shown in phantom, by one embodiment of bracket means utilizing the principles of the invention.

FIG. 2 illustrates, fragmentarily, portions of another embodiment of bracket means shown in association with fragmentarily illustrated portions of a conventional toilet bowl and flush tank of the type shown in FIG. 1.

FIGS. 3 and 4 respectively are perspective views, respectively illustrated the urinal attachment of the type shown in FIG. 1 extended to operative position and shown selectively as being supported adjacent either the left-hand or right-hand sides of a conventional toilet bowl and flush tank.

FIG. 5 is a fragmentary view similar to FIG. 2 and illustrating still another embodiment of supporting means for the bracket assembly of the type shown in FIG. 1.

FIG. 6 is an exploded view showing, in phantom, portions of a conventional flush tank having water discharge means used for flushing the urinal attachment comprising the present invention connected thereto.

FIG. 7 is an enlarged side elevation of a spacing member of the type used in the arrangement shown in FIG. 6 for accommodating the water discharge mechanism to a conventional flush tank.

Fig. 8 is an exploded view of one embodiment of urinal attachment employing the principles of the present invention and illustrating the individual components thereof primarily in vertical sectional view in the drain duct in this elevation being cut away to partially foreshorten the length thereof.

FIG. 9 is a vertical elevation showing a preferred arrangement of supporting bracket means capable of vertical adjustment relative to a fragmentarily illustrated vertical support member.

FIG. 10 is a fragmentary elevation of a conventional water supply means for a typical type of flush tank com-
3. Water supply means for a urinal attachment.

4. Fig. 11 is a fragmentary vertical sectional view of one embodiment of urinal bowl attachment employing the principles of the present invention and showing the water conduit fragmentarily.

5. Fig. 12 is a front elevation of an exemplary type of cabinet-like enclosure for the major portion of the urinal attachment embodying the present invention and illustrated in operative position with respect to a fragmentary portion of an exemplary flush tank shown in phantom.

6. Figs. 13, 14 and 15 respectively are plan views of different embodiments of exemplary disposable flexible drain ducts all made in accordance with the principles of the present invention.

7. Figs. 16 and 17 respectively are front and side views of an exemplary type of attaching clamp for detachable engagement by any of the embodiments of flexible disposable drain ducts to secure the lower end thereof in operative position with respect to a conventional toilet bowl, the scale employed in Figs. 16 and 17 being substantially greater than that in the preceding figures.

8. Fig. 18 is a side elevation showing exemplary means for connecting the urinal flushing conduit to a toilet bowl installation of the type using pressure water rather than a flush tank.

9. Primarily for purposes of readily distinguishing the essential parts of the present invention from conventional toilet facilities with which the urinal attachment of the present invention is associated, throughout the figures of the application, conventional equipment has, in general, been illustrated in phantom, whereas the details of the various embodiments of elements and assemblies of mechanism comprising the present invention are shown in full lines. Referring to Figs. 1, 3 and 4, there is illustrated therein, in phantom, a conventional toilet bowl 10, connected to the rearward portion thereof in accordance with customary procedure and structure, and extending preferably upward therefrom is a conventional flush tank 12 upon which a removable cover 14 is mounted. Operation of the conventional flushing equipment within the tank 12 is effected by means of movable lever 16 shown in Fig. 1.

10. One embodiment of the present invention is illustrated in different positions in the perspective views shown in Figs. 1, 3 and 4. These illustrations include one embodiment of relatively simple and highly utilitarian bracket mechanism, details of which are described hereinafter. The urinal attachment illustrated in these figures primarily comprises a structure generally designated as a urinal bowl 18 which comprises a plurality of different elements which also are described in detail hereinafter. The embodiment of bracket means 20 shown in these figures permits movement of the urinal bowl 18 from the substantially retracted, inoperative position thereof shown in Fig. 1, respectively to several extended operative positions shown in Figs. 3 and 4, these views also showing the versatility of the structure by the arrangement in Fig. 3 being shown mounted adjacent the left-hand side of the flush tank 12 while, in Fig. 4, the urinal bowl 18 is mounted adjacent the right-hand side of the flush tank 12.

11. Extending from the lower, discharge end of the urinal bowl 18 is a preferably flexible, disposable drain duct 22, of which there are a plurality of different embodiments respectively illustrated in Figs. 13-15. In Figs. 1, 3 and 4, the left side of the type shown either in Figs. 13 or 14, as desired.

12. For purposes of attaching the urinal bowl 18 to flush tank 12, regardless of which specific embodiment thereof is involved, a number of different embodiments of bracket means 20 are employed. Considering in particular the specific bracket arrangement shown in Figs. 1, 3 and 4, it will be seen that a vertical hanger 24 has a hook 26 at the upper end thereof which extends over the upper edge of one side of the flush tank 12. The lower end 28 of hanger 24 extends horizontally beneath the bottom of flush tank 12 and has a clamping screw 30 threadably connected therewith for clamping engagement against the bottom of tank 12, thereby fixedly securing hanger 24 with respect to the tank.

13. As best shown in Fig. 4, a pair of horizontal parallel bracket arms 32 are pivotally connected at one end respectively to appropriate extensions on vertical hanger 24, the same being braced by vertical member 34 extending therebetween and connected at its upper end pivottably thereto. Pivottably connected to the outer ends of bracket arms 32 is a U-shaped bracket 36, the bight portion thereof having suitable lateral extensions thereon which are directly pivotally connected to the outer ends of the arms 32. Extending between the outer ends of the U-shaped bracket 34 is a vertical rod 38 upon which a supporting block 40, see Figs. 1 and 3, is slidably movable and positionable thereon at any desired vertical location by means of a one-way clutch 42, details of which are best shown in Fig. 9.

14. Fixedly connected to block 40 is a L-shaped bracket arm 44, the outer end of which extends laterally and is connected directly to a supporting ring 46 having a laterally projecting ear 48 thereon which directly abuts the outer end of bracket 44 for connection thereto by suitable rivets, screws or the like. The opposite side of supporting ring 46 has an appropriate manipulated handle 50 thereon by means of which the urinal bowl assembly 18 is manipulated for both projecting and retracting lateral movement toward and from flush tank 12.

15. In retracted position, the arms 32 for example may be folded back so that they will not present substantially quite close to the adjacent end of the flush tank 12 and the U-shaped bracket 36 similarly is folded, laterally, close to the arms 32, whereby it can be seen that very little space will be consumed by the folded arrangement. When so folded, the entire bracket means 20 and the urinal bowl 18 supported thereby may be housed within an appropriate enclosure such as cabinet 52, shown in Fig. 12.

16. Said cabinet preferably has readily operable front door 54 hinged thereto and an operating knob 56 facilitates the operation thereof to open and close the door. When the door is open, handle 50 on supporting ring 46 is engaged by the operator, and the bracket means 20 may be manipulated to readily extend the urinal bowl 18 to any desired extended position permitted within the range of movement of the various elements of the bracket means. When retracted into the cabinet 52 however, the urinal bowl 18 and its supporting bracket means 20 offers no obstruction to the normal use of the toilet bowl 10 for customary purposes.

17. Several other embodiments of proposed supporting bracket means, in addition to those specifically illustrated in Figs. 1, 3 and 4, respectively are shown in Figs. 2 and 5. Referring to Fig. 2, a vertical post 58 preferably has a suction cup 60 or the like in engagement with the floor adjacent the toilet bowl 10, the post 58 having an appropriate bracket 62 adjacent the upper end thereof for clamping attachment to one edge of the rear portion of the toilet bowl 10 as clearly shown in Fig. 2. Extending laterally from post 58 is a bracket arm 64 to which, for example, the lower end of vertical hanger 24 of the embodiment shown in Figs. 1, 3 and 4 may be connected suitably and thereby dispense with the clamping lower end 28 of vertical hanger 24.

18. In the embodiment shown in Fig. 5, the bracket arrangement therein also contemplates a vertical post 66 having a suction cup 68, for example, on the lower end thereof engagement with the floor adjacent the toilet bowl 10, the upper end of post 66 having an appropriate vertically movable abutting member engaging the lower surface of flush tank 12 fractionably, either by means of a coiled spring within the post 66 which, for example, may be hollow to accommodate the same, or otherwise. A lateral
arm 70 is adjustably positionable upon post 66 for appropriate connection to the lower end of vertical hanger 24 of the embodiment shown in FIGS. 1 through 4 for example, said bracket being connected thereto by any suitable means.

Referring to FIG. 8, wherein an exploded illustration of the number of elements comprising one embodiment of urinal bowl 18 is shown, it will be seen that said embodiment comprises a circular or endless tube-like member 72, which may be molded from appropriate plastic material, cast from metal, or otherwise. The vertical dimension of the tube is relatively short compared with the diameter thereof. The embodiment comprises a wall having an enlarged upper end which projects radially inward and is hollow to provide an annular cavity 74 therein. An inlet nozzle 76 communicates with the interior of cavity 74, and, preferably, a plurality of circular rows of inwardly and downwardly directed discharge ports 78 are formed either by molding, drilling or otherwise.

Arranged in circumferentially spaced relationship on the inner surface of the lower portion of tube-like member 72 are a plurality of somewhat sloping projections 80 which comprise part of an interrupted ring which are enganged with similar sloping members 82 formed on the exterior of clamping ring 84 which is complementary to the inner surface of the lower portion of tube-like member 72 and is sufficiently long to project a short distance below the lower edge of member 72 when connected thereto so as to permit manual engagement thereof for connection and disconnection relative to member 72. The lower portion of clamping ring 84 also tapers gradually inward toward its lower edge so as to be received in complementary manner against a suitable inner surface 86 of supporting ring 46, such engagement preferably including a reasonable frictional contact so as to releasably but suitably support the urinal bowl assembly 18, comprising the above-described elements, with respect to the bracket 44.

FIG. 8 also illustrates one exemplary embodiment of flexible, disposable drain duct 22 which, as shown for example in FIGS. 13-15 may possess a number of different forms within the spirit of the invention. The particular embodiment shown in FIG. 9 is similar to that shown in either FIGS. 13 or 14, the difference being primarily in regard to the manner by which the lower end thereof is supported operably with respect to the toilet bowl 10, details of which are set forth hereinafter.

In the preferred construction of the disposable drain duct 22, it may be formed from reasonably thin but tough plastic material of sheet-like nature and preferably capable of being heat-sealed, especially if initially formed from sheet-like material folded upon itself, but also tube-like means. Being relatively thin by nature, such a duct may be sold and stored in very compact folded or rolled condition. The upper end thereof, when mounted operatively upon the urinal bowl 18, extends upwardly through the clamping ring 84 and a limited amount of said upper end, such as about an inch or more, is folded downwardly and outwardly over the upper edge of ring 84, as illustrated in exemplary manner in FIG. 8.

If preferred, interengaging snap-fasteners, not shown, may be used to effect such connection, either in conjunction with or in lieu of the means described in detail immediately above.

When so arranged, the clamping ring 84 then may be moved upwardly into the lower portion of member 72 until the projections 80 and 82 are interdigitated and then moved relative to each other circumferentially a short distance so that the sloping clamping ring members detachably with respect to member 72. This simultaneously clamps the upper end of the disposable drain duct 22 operatively with respect to the urinal bowl 18. The lower part of member 72 preferably is sufficiently long to obscure the folded edges of ducts 22. When said arrangement is secured, it may be lowered into the supporting ring 46 on bracket 44, for support thereby. The provision of the ring 46 additionally affords comfort in changing the drain ducts by making it unnecessary to stoop or bend while doing so. The height of ring 46 permits a person to stand erectly while exchanging the ducts.

The lower, discharge end 90 of drain duct 22, which normally may be in a relatively flat condition, thereby actually comprising a flattened tube, is disposed an appropriate distance into the interior of toilet bowl 10 as shown for example in FIGS. 3 and 4, whereby the same discharges directly into toilet bowl 10. Due to the relatively flexible nature and light weight of the drain duct 22, it necessarily must be secured against accidental dislodgement of the discharge end 90 thereof from within the toilet bowl 10. To accomplish this, an appropriate auxiliary clamp 92, somewhat resembling a bicycle pants clamp, and made preferably of appropriate erosion resistant metal, plastic material or the like, is suitably shaped so as to be engageable at a desired location opening rim of a toilet bowl 10, as shown in exemplary manner in FIGS. 3 and 4.

The clamp 92 has an appropriate headed securing member 94 thereon. Along one edge of the flattened drain duct 22 is an attaching tab 96 which may be formed from the same material as the duct in a manner similar to extending a button through a button hole so as to detachably secure the discharge end 90 of the duct 22 in desirable position within the toilet bowl 10.

Further, in accordance with the principles of the invention, and by reference to FIGS. 13 and 14, wherein slightly different embodiments of the ducts 22 are shown and respectively identified as duct 22 and 22', it will be seen that a series of slots 98 are formed in longitudinally spaced relationship along one edge of said ducts respectively upwardly from the discharge ends 90 and 90' thereof. If preferred, suitable groovements, not shown, may be used in lieu of slots 98 or suitable snap-fastening means may be used on the ducts and clamp 92, such as the type widely used on garments. By such an arrangement, after the preferred vertical position of the urinal bowl 18 has been established with respect to the vertical rod 38 of the bracket means 20 for example, the discharge end of the duct is established in operative relationship with respect to the toilet bowl so as preferably not to have any sag in the duct of such nature that any portion thereof, especially during use, is below the level of the upper edge of toilet bowl 10.

To effect such desired adjustment in longitudinal position of the duct 22 or 22' with respect to the bracket 92 and its securing member 94, a desired slot 98 of either of the embodiments of drain duct which are employed is selected for attachment to the securing member 94. Under such circumstances, if there is an undue length of the discharge end of the duct extending into the toilet bowl 10, such excessive amount readily may be removed by scissors or a knife.

Due to the fact that the urinal bowl 18 preferably should be of the order of within the range of between 5 and 6 inches in diameter for economical use, it is obvious that the upper, entrance end of the ducts 22 and 22' must be of complementary circumference. Particularly to facilitate the manufacture thereof, the two embodiments shown respectively in FIGS. 13 and 14 embody only a limited taper of the duct between the inlet ends thereof and the opposite discharge ends 90 and 90' thereof. As mentioned in the foregoing, the cut edges of the folded sheet material may be connected by heat-sealing, cement, or the like and similarly, any extra strips which is to contain the slots 98 also may be attached thereto by the same means. However, as shown in FIG. 14, a relatively
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wide band 100 may extend along one edge of the duct 22', the same being formed by heat-sealing the two adjacent edges of the opposite sides of the duct together for a reasonable width, thereby forming a double thickness area within which the slots 98 readily may be formed.

Ducts of the type shown in FIGS. 13 and 14, which incidentally is also shown in FIGS. 1 and 4, might conceivably be too wide for convenient discharge from the urinal bowl to the toilet bowl in that excess width of said ducts might cause at least a certain amount of accumulation of residue therein which could contribute to objectionable odors, even after the ducts have been flushed. Accordingly, a further embodiment of duct 22" is shown in FIG. 15 wherein the entrance end 102 is substantially as wide as the entrance end of the embodiment shown in FIGS. 13 and 14, but said entrance end then substantially tapers inwardly a short distance beyond the upper, wide terminal end to a narrow width which continues to the discharge end 90". An attaching strip 106 for engagement with member 94 is formed with a plurality of slots 98 engageable with the headed sealing member 94 of the bracket 92.

A further embodiment of means for attaching the entrance end of the drain duct 22 to the urinal bowl is illustrated in FIG. 11. In said figure the bowl comprises a preferably slightly tapered sheet-like band 108 which is circular in cross-section and, in function as well as in shape, that resembles the clamping ring 84 of the embodiment of urinal bowl shown in FIG. 8. Actually, the tapered band 108 resembles a short tube having a vertical dimension substantially less than the diameter. An attaching ear 110 extends radially therefrom, for example, for connection to the bracket 44 as in the embodiment shown in FIG. 1.

The upper end of the duct 22 is complementary circumferentially to the inner surface of the band 108 which actually comprises the urinal bowl and extends upwardly therefrom a limited distance to permit the terminal upper end of the duct 22 to extend downwardly, externally, over the upper end of the band 108. A suitable securing means such as a wide rubber band 112 may be employed at least to initially position the duct with respect to band 108.

Further to clamp the upper end of duct 22 relative to band 108, a dual purpose water tube 114 is provided which has an endless passage therein to receive water from inlet tube or pipe 116. If desired, a suitable notch, not shown, may be formed in the upper edge of band 108 to accommodate tube 116 if desired to have it extend radially outward from tube 114. Annullar tube 114 has a series of water spray ports 118 formed therein, directed preferably inwardly and downwardly as illustrated in FIG. 11 to flush the inner surface of the urinal bowl which actually comprises the tapered band 108 which is lined with the upper part of the drain duct 22. Circular tube 114 also is closely complementary to the inner diameter of the upper end of the band 108 so that it can wedgingly and frictionally engage the inner surface of the duct 22 adjacent the upper end of band 108 and thereby serve in a second capacity to complete the clamping of the duct with respect to the urinal bowl while simultaneously serving to flush the inner surface thereof.

Referring to FIG. 6, wherein a conventional flush tank 12 is shown in phantom, the conventional water supply means therefor also is shown therein in phantom. The normal water level 120 is illustrated in exemplary manner in FIG. 6. Water is introduced into the tank 12 by pipe 122 which extends through the bottom of the tank and is connected to a suitable source of supply under pressure. Flow control valve 124 is connected to the top of pipe 122, said valve being controlled in actuation by a conventional float lever 126 having the usual float on the other end thereof as illustrated in FIG. 6.

Following a normal flushing operation of toilet bowl 10, the entire water content of tank 112 is drained for discharge into said bowl 10. After this occurs, the outlet valve for tank 12, not shown, is closed and at that time valve 124 is open due to the float on the end thereof being depressed into tank 12. While the tank is filling approximately to the level 120, a limited amount of water flows through an auxiliary pipe 128, such as shown in FIG. 10. Said pipe 128 is of a small diameter and extends from the discharge enters pipe 130 which communicates with the conventional gooseneck passage, not shown, in the lower part of toilet bowl 10 for purposes of establishing a conventional water seal therein. This arrangement is required due to the fact that the discharge from the toilet bowl frequently occurs with such force and efficiency that water normally remaining in the gooseneck trap is drawn therefrom into the sewer. In order to re-establish the water seal, the aforementioned discharge of water through pipe 120 into the seal is provided. This arrangement is used to advantage in connection with providing flush means for the urinal bowl 18, several embodiments of the flush means being illustrated in the drawings and described as follows.

In the embodiment shown in FIG. 6, the conventional auxiliary pipe 128, such as shown in FIG. 10, is replaced by a short tube or pipe 130 and is connected to valve 124 in place of said conventional pipe 128. The pipe 130 extends to a T 132, the stem of which has a short tube 134 extending therefrom into pipe 130, while the other branch of T 132 is connected with a flexible tube 136 of appropriate length to permit the outer end thereof to be connected to the inlet nozzle 76 on member 72 of the embodiment of urinal bowl assembly shown in FIG. 8. Any suitable form of control valve may be included in tube 136 to control the flow of water therethrough, such as either a simple pinchcock 138 or a more sophisticated type of valve, not shown, but preferably manually operable.

In order that the tube 136 may be installed in conventional type flush tanks 12, particularly so as to extend over the upper edge of the tank and not be pinched by the cover 14, it is contemplated that the present invention employ a plurality of small button-like projections 140, an enlarged view of one of which is shown in FIG. 7 and several of which are shown in FIG. 6 attached to the upper edge of flush tank 12, such as adjacent the corners thereof, so as to elevate the cover 14 sufficiently to permit passage of the tube 136 over the upper edge of one side of tank 12, for example. By such an arrangement, after the normal flushing of the toilet bowl 10 has been completed, for example, and also after the tank 12 has been refilled to its normal level 120, the supplementary discharge 124 for purposes of flushing the urinal bowl 10 or conserving the filling of the gooseneck water trap in the bottom part of toilet bowl 10 also is used partially to flush the urinal bowl. This is accomplished by the parts of the water, which normally would be discharged into pipe 130, being diverted to tube 136 for discharge into the annular cavity 74 to flush the interior of the urinal bowl assembly through the discharge ports 78 in member 72.

Such flushing of the urinal bowl flushes down the inner surface of the bowl which actually comprises the inner surface of the upper end of drain duct 22, for example. The interior of the drain duct likewise will be flushed and all of the flushed material will be disposed of in the urinal bowl 10, thereby aiding in re-establishing the water seal in the lower part of toilet bowl 10. In effect therefore, such arrangement merely divides the water intended for the water seal in the gooseneck of the toilet bowl and forces the water level 120 to the lower part of the water seal. Obviously, during the flushing of the urinal bowl 10, the valve 138 must be open. Further, under most conditions of operations, excepting for those mentioned hereinafter, the valve 138 may be in open condition at all times, for practical purposes except, for example, when replacing the duct 22 within the urinal bowl assembly.

Referring to FIG. 18, it will be seen that the urinal flushing arrangements of the invention also may be con-
connected to flushing systems of the pressure type now commonly used in hotels, motels and office buildings. In the pressure type of flush system, water at city pressure is supplied to valve 141 which delivers water under pressure through conduit 141c to toilet bowl 102. Simply by drilling and tapping conduit 141z and inserting a threaded nipple therein, shown in FIG. 18, the inlet end of tube 116 or 136 may be connected to said nipple to receive flushing water therefrom. Thus, at least whenever the toilet bowl is flushed, the urinal bowl also will be flushed. Obviously, the urinal bowl, as well, by operating valve 141, this also flushing toilet bowl 10 as well.

A dual purpose cap or cover 142, which is cup-shaped, is illustrated in cross-section in FIG. 8 and also is shown in operative, cover position in FIG. 1. The cover 142 also preferably has a handle 144 thereon to aid in manipulating the same and especially in moving it from bowl-covering position as shown in FIG. 1, to inverted position, removed from the urinal bowl 18, as shown in FIG. 4. The cover may be formed, for example, by molding from plastic material. When the cover is in covering relationship to the urinal bowl 18, it serves several functions such as preventing the emission of any odor from the urinal bowl. It also insures against any splashing from the bowl during flushing thereof. A still further function of the cover is to serve as a container for a sufficient amount of water to wash the urinal, which usually is adjacent the normal toilet facility. In the absence of any automatic flushing arrangement such as illustrated in FIG. 6, for example, or in addition thereto, the cover 142, when used as a cup, may be used to perform a satisfactory manual flushing of the urinal bowl and main duct 22.

Still another arrangement of automatic flushing arrangement is illustrated in FIG. 10 wherein the inlet tube 116 is connected to the end of the normal auxiliary pipe 128 conventionally carried by control valve 124 on the upper end of water delivery pipe 123 within the flush tank 12. The pipe 132 is shown in exemplary manner in FIG. 10 as being unconnected to tank 12 but it will be understood that the operation thereof is in conjunction with the flush tank 12 under normal conditions. Float lever 126 operates in the usual manner and, upon the completion of the filling of the flush tank 12 to its exemplary normal level 128 in FIG. 6, a supplementary amount of water will be discharged through the conventional auxiliary pipe 120.

Normally the water discharging from pipe 120 would be introduced into the pipe 130 shown in FIG. 6 for filling the water trap in the gooseneck in the lower part of toilet bowl 10. In the arrangement shown in FIG. 11, tube 116, which is illustrated in broken manner therein, to foreshorten the same, is directly connected to the outlet end of auxiliary pipe 128, whereby all of such auxiliary discharge passes into the annular flushing tube 114 to flush the embodiment of urinal bowl illustrated in FIG. 11 but the flushing water in any event discharges to the toilet bowl 10 and thereby flows into the sump therein comprising the water seal in the gooseneck portion of the toilet bowl. The final rising movement of the float lever 126, during the operation of the conventional water tank mechanism, discontinues the discharge of supplementary water through the auxiliary pipe 128 after a predetermined amount has flowed therethrough. While the flushing of the embodiment of urinal bowl shown in FIG. 11 occurs, the cover 142 of the embodiment shown in FIG. 9 for example may be placed over the upper end of the urinal bowl, especially to minimize any tendency toward splashing.

Notwithstanding the fact that flushing of the urinal bowl and especially the inner surface thereof, which is primarily composed of the upper end of the disposable drain ducts 122, in variations thereof, it is recognized that flushing alone by water is not sufficient to ultimately pre-
operative frictionally with said sleeve and the upper end of said flexible disposable drain duct to clamp said upper end of the drain duct circumferentially around said sleeve in water-tight relationship thereto.

4. The urinal attachment according to claim 3 in which said means detachably securing said drain duct to said toilet bowl comprises a clamp attachable to the rim of a toilet bowl and coengageable means on said clamp and drain duct to connect the same to each other to operatively position the lower end of said drain duct within said toilet bowl.

5. The urinal attachment according to claim 1 in which said bracket means comprises a member connected to said urinal bowl, a support member positionable stationarily relatively to said toilet bowl and flush tank, and horizontally extensible and contractable means interconnecting said members to permit the urinal bowl to be extended to operative position and retracted to inoperative position while supported by said bracket means.

6. The urinal attachment according to claim 5 in which said horizontally extensible and contractable means also includes a clamping member vertically movable relative to said stationary supporting member to permit vertical positioning of the urinal bowl to a desired height of operational position.

7. The urinal attachment according to claim 1 further including an enclosure for said urinal bowl and bracket means, supporting means on said enclosure connectable to said flush tank for support thereby, and a movable door on said enclosure arranged to be opened to permit withdrawal of said urinal bowl to operative position.

8. The urinal attachment according to claim 1 in which the urinal bowl when in use has an open upper end and said attachment including a cover complementary to the upper end of said urinal bowl and operable to engage the same to close the opening therein when not in use.

9. The urinal attachment according to claim 8 in which said cover for said urinal bowl is cup-like and inverted over the bowl when enclosing the same, said cover also having a capacity suitable when the cover is disposed with the open end uppermost to contain sufficient water to serve to manually flush said urinal bowl by pouring the water within said urinal bowl and then being inverted and placed in closing position over the upper end of said urinal bowl to close the same.

10. The urinal attachment according to claim 1 further including flushing means extending circumferentially around the interior of said urinal bowl and having discharging ports spaced circumferentially and directed downwardly into said bowl, and water conduit means connected at one end to said flushing means and at the other end being connectable to the water supply means for said flush tank of said toilet bowl and operable to receive flushing water therefrom when said toilet bowl is flushed.

11. The urinal attachment according to claim 10 in which said flush tank has a bypass discharge tube of conventional type to deliver water to said flush tank of the toilet bowl to form a water trap, and said water conduit means being interconnected to said bypass discharge tube to receive flushing water therefrom when said toilet bowl is flushed and thereby bypass said flushing water into said toilet bowl to supply the gooseneck water trap therein.

12. The urinal attachment according to claim 10 in which said flush means in said urinal bowl comprises an endless tube in which said discharge ports are formed, said tube being complementary in shape to the interior of said urinal bowl and operable to frictionally engage the same for support therein when the upper end of said flexible drain duct is disposed around the interior of said urinal bowl, whereby said endless tube frictionally engages the inner surface of said drain duct to clamp the same with respect to the urinal bowl.

13. The urinal attachment according to claim 1 in which said urinal bowl has a hollow circular rim and the flushing discharge ports of said bowl comprise holes extending through the inner wall of said rim, said rim also including inlet port means to receive water from said flush tank supply means.

14. The urinal attachment according to claim 13 further including a clamping ring complementary to said circular rim of said urinal bowl, interfiting connecting means comprising coengageable slots and projections formed on said circular rim and clamping ring to detachably connect the same together, the upper end of said flexible disposable duct passing circumferentially through said ring and draped over the exterior surface thereof, whereby said upper end of the disposable duct is securely clamped between said ring and circular rim when said ring and rim are connected together as aforesaid.

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