# United States Patent [19]

**Pignato**

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[54] **WATER CLOSET**


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[52] **U.S. Cl.** ..... **4/28**

[51] **Int. Cl.** ..... **E03d 3/00**

[58] **Field of Search** ..... 4/18–29, 56, 59, 4/57 P



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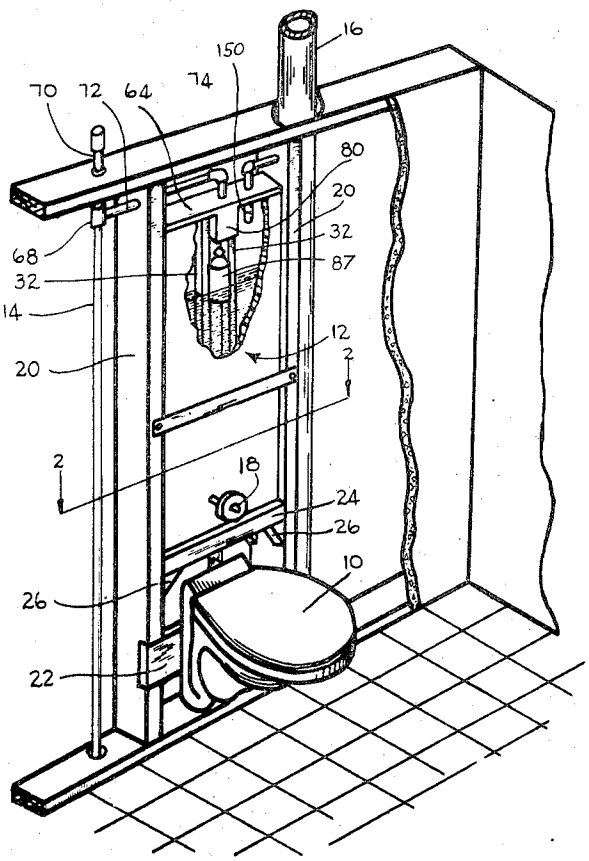
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[57] **ABSTRACT**

An improved water closet that can be positioned within a wall to conserve floor space and including a double-float valve system for closing the inlet and discharge ends of the tank. Also included is a means for overcoming the hydrostatic pressure to permit a floatation of the discharge float valve and anti-syphon means for use with the tank.


**12 Claims, 12 Drawing Figures**



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5 Sheets-Sheet 1

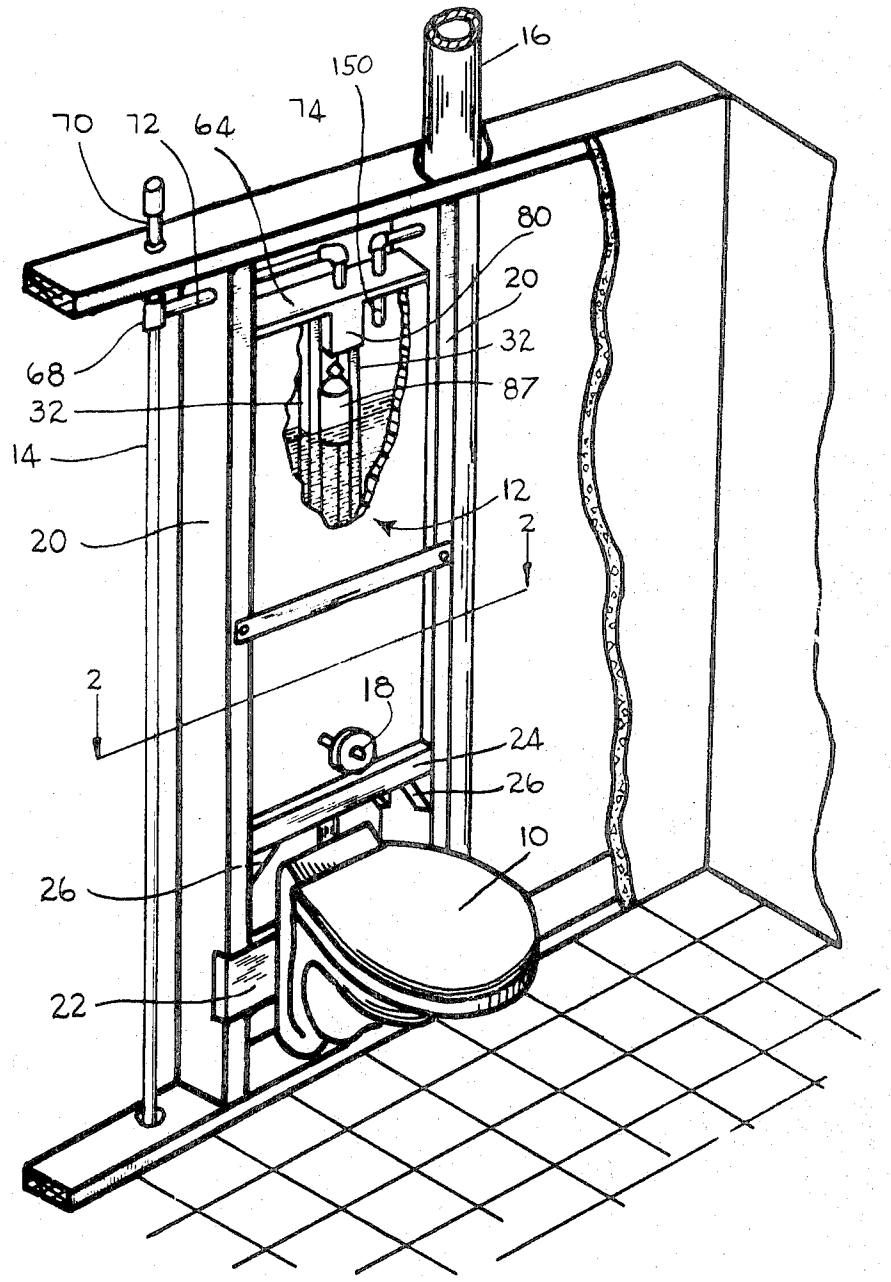



Fig. 1

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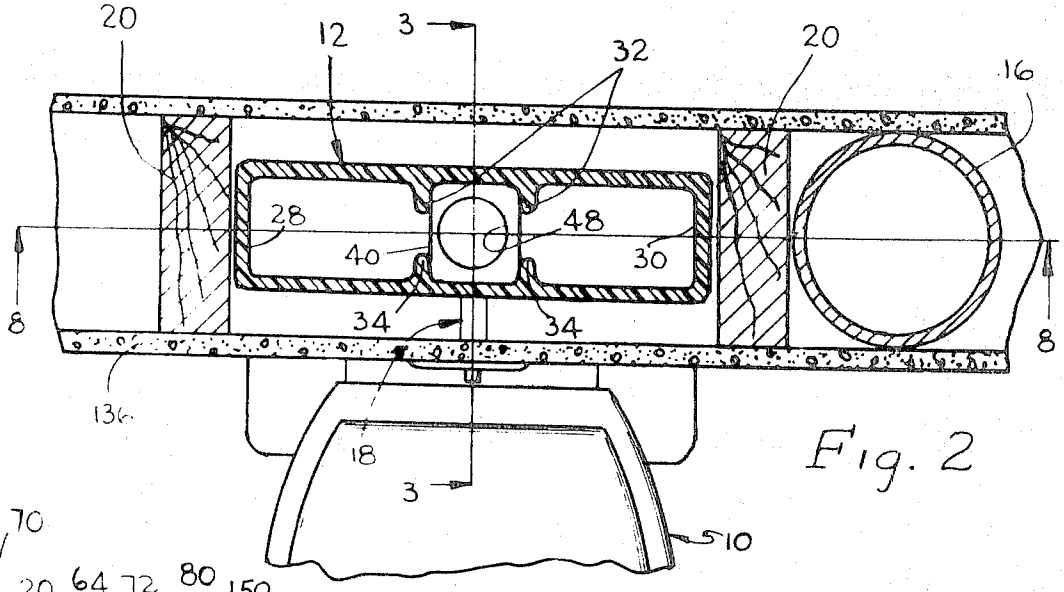



Fig. 2

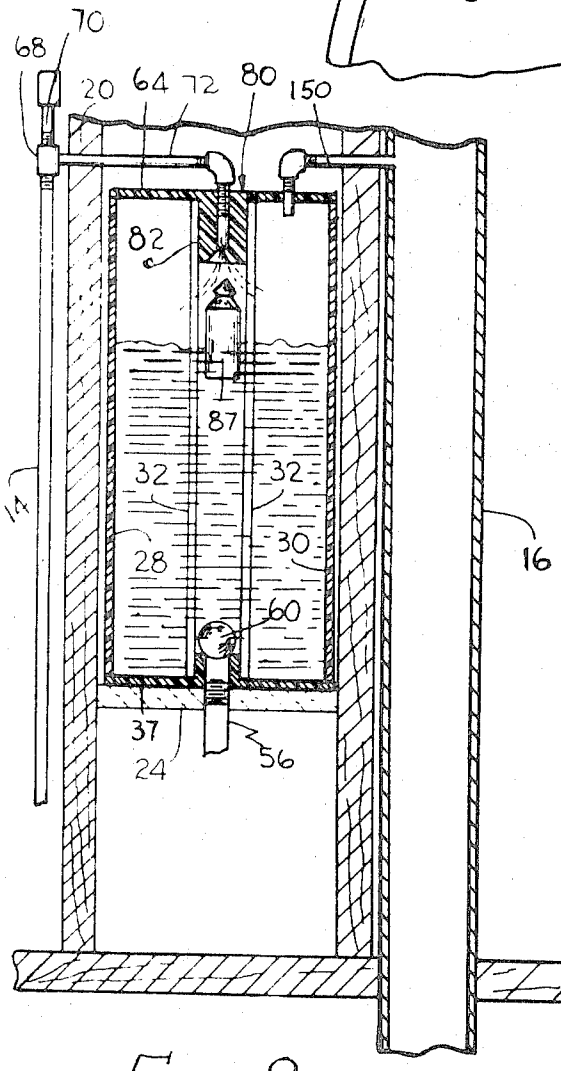



Fig. 8

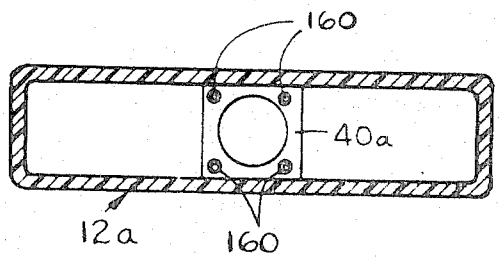



Fig. 9

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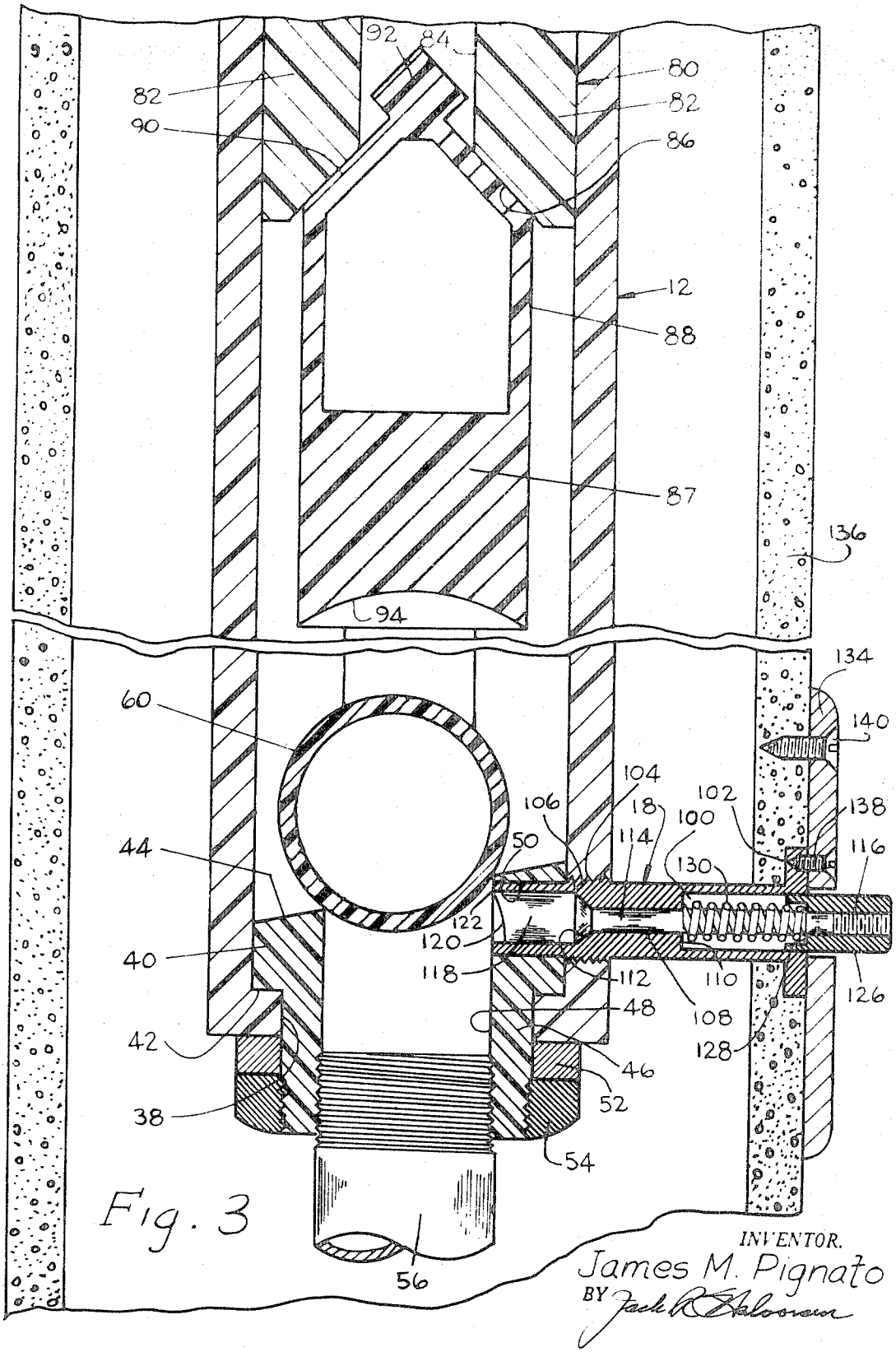



Fig. 3

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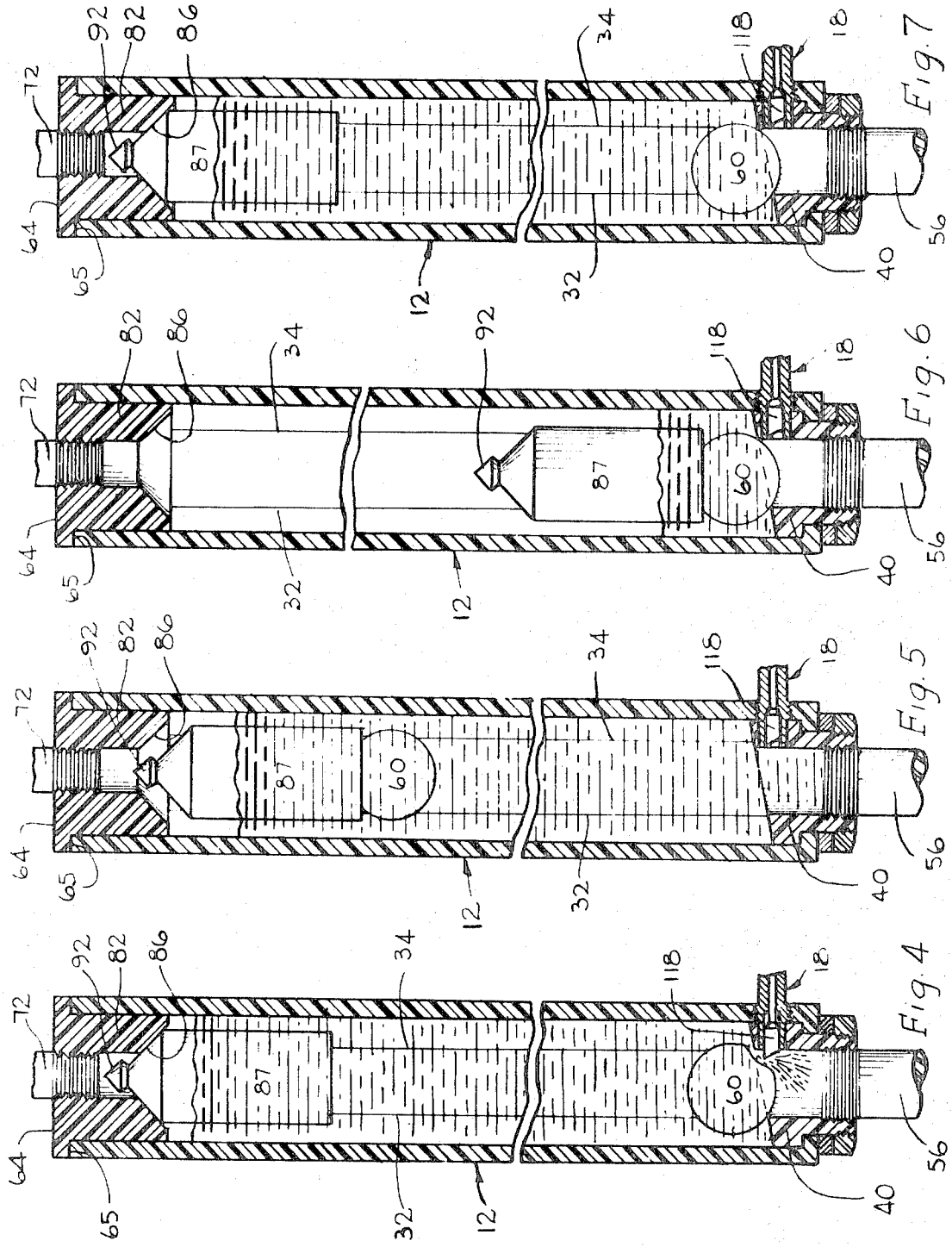



Fig. 7

Fig. 6

Fig. 5

Fig. 4

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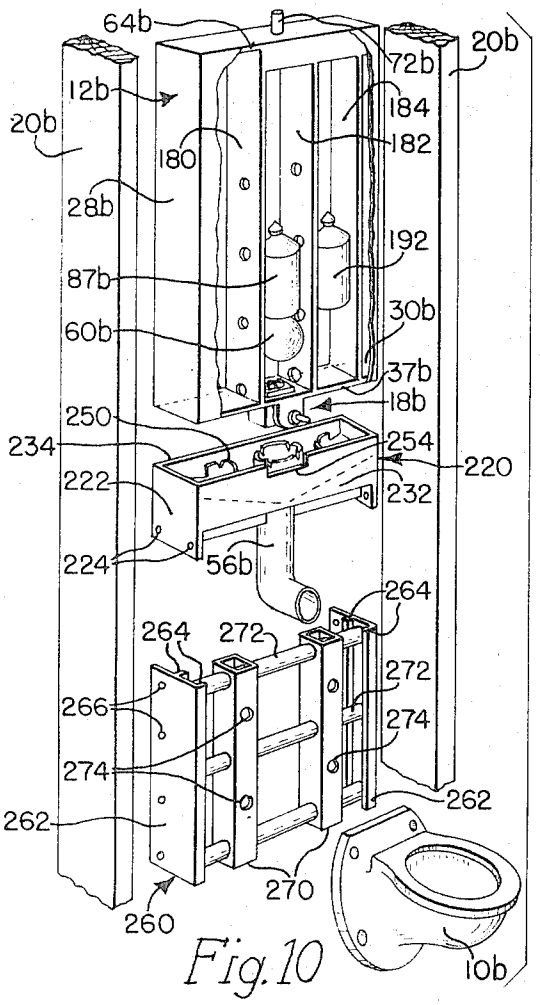



Fig. 10

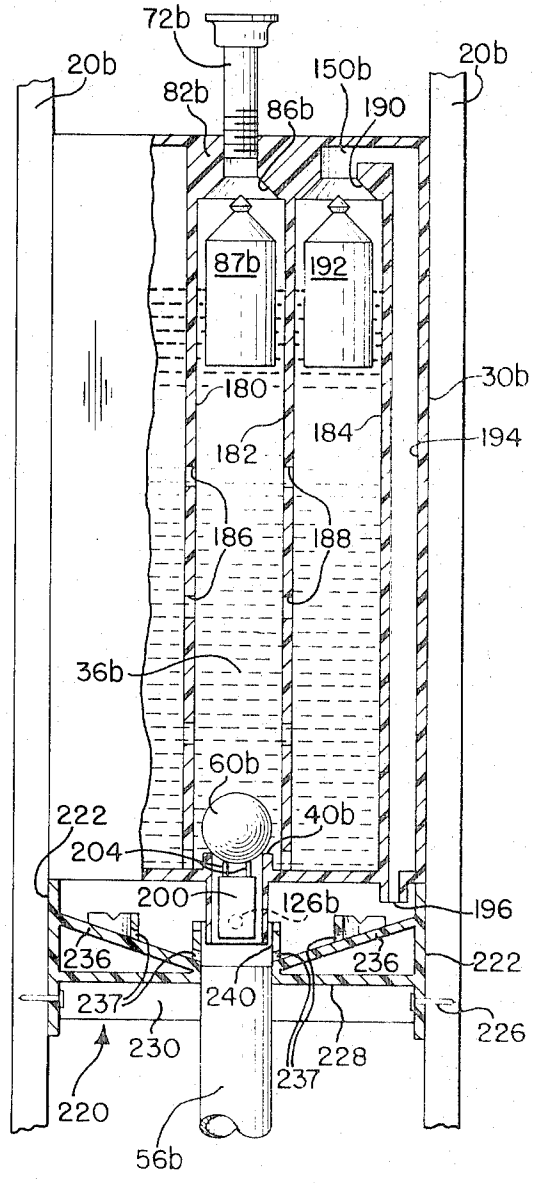



Fig. 11

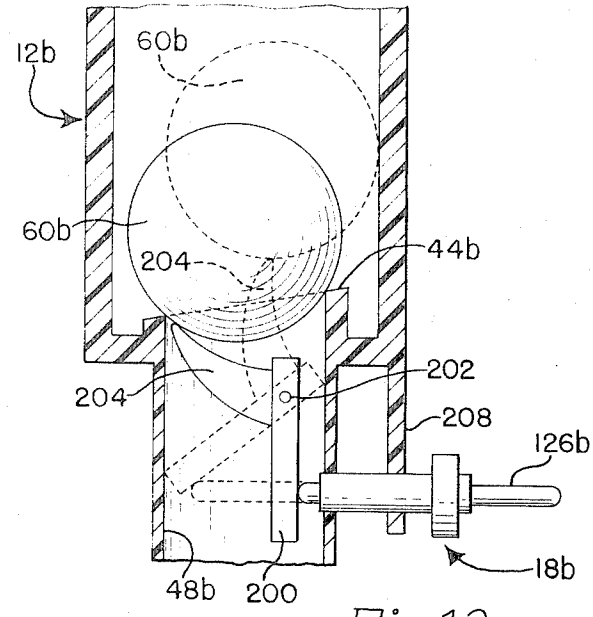



Fig. 12

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# WATER CLOSET

## BACKGROUND OF TEE INVENTION

The invention relates to an improved water closet having a water storage tank positioned within a wall so as to conserve floor space. In the past, installations of this type have not been satisfactory due to the mechanical features of the valving system which require occasional replacement of parts thereby necessitated the presence of a removable wall panel to obtain access to the water storage tank. Additionally, certain valve forms after extended use fail to seat properly and often were incapable of being unseated to permit discharge of the water. The hydrostatic pressure of the water in the tank acting against the float valve, which often takes the form of a ball, prevented the ball from being unseated or, if it was unseated often would reseat the ball and prevent the ball from rising to a flotation position whereby the tank could be discharged. Similarly, most of the previous forms did not provide an anti-syphon means to prevent the re-circulation of discharged waste into the supply source of pressurized water.

## SUMMARY

The invention relates to an improved water closet, and preferably a water closet which can be fabricated from plastic materials which are relatively light weight and will be relatively maintenance free. It is an object of this invention to provide a generally oblong or rectangular elongated water tank capable of being positioned intermediate two adjoining wall sections to conserve floor space. The tank employs the floating valve system in which a pair of float valves, one in the form of a ball, is positioned adjacent the lower end of the tank and the second in the form of a cylindrical member having a frusto-conical upper configuration, are adapted to cooperate with and seat and seal complimentary valve seat members at the upper and lower end of the tank. The invention also contemplates means for unseating the lower ball to permit discharge of the fluid from the tank as well as a means for overcoming the hydrostatic pressure which normally prevents unseating of the ball from the lower discharge seat. The invention also contemplates a novel anti-syphon means to prevent contamination of the water supply.

Thus, it is an object of this invention to provide an improved water closet having the water tank positioned intermediate the adjoining wall sections with an improved valving system for use in such a tank. The tank is simple in construction with relatively few moving parts which are substantially maintenance free. Another object of the invention is to provide a valve releasing mechanism which can be removed from the water tank without turning off the water supply. A still further object of the invention is to provide such a water tank which is economical to fabricate and because of its design facilitates ease in installation.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an elevation in partial section of a water closet installation incorporating an embodiment of the present invention;

FIG. 2 is a section taken along lines 2—2 of FIG. 1;



FIG. 3 is a vertical section taken along lines 3—3 of FIG. 2;

FIGS. 4–7 are vertical elevations in section similar to FIG. 3 showing the various valve elements in this embodiment of the invention and various positions during the operation of the water closet tank,

FIG. 8 is a front partial sectional elevation of the tank and valve elements taken along line 8—8 of FIG. 2;

FIG. 9 is a cross-sectional view of a modification of the present invention and illustrates the tank incorporating the modification from a view similar to FIG. 2 hereinabove;

FIG. 10 is a perspective, exploded view, in partial section, of a further embodiment of the present invention;

FIG. 11 is an elevational view in partial section of the upper two elements of the embodiment shown in FIG. 10; and

FIG. 12 is a side elevational view in partial section showing the operator means utilized in this embodiment of the invention.

Referring more specifically now to the accompanying drawing and particularly to FIG. 1, a water closet installation of the type contemplated by this invention generally includes a toilet bowl **10**, a water closet tank **12**, an inlet supply **14**, a stack or soil pipe **16** and operator means **18**.

The toilet bowl **10** is of a type well known in the trade for a flush wall mounting. It is in the present instance spaced intermediate vertical wall studs **20** and supported by an inset brace **22** set into studs **20**.

The tank **12** is of a general rectangular shape and may be supported on cross member **24** which is suitably braced as by angle brackets **26** between adjacent studs **20**. The tank in the present instance can be manufactured from a variety of materials ranging from the normal cast iron or sheet metal to reinforced plastic as shown in FIGS. 3 through 7. As seen in FIG. 2 in the preferred embodiment, two pairs of longitudinally extending ribs or projections **32** and **34** respectively extend for substantially the entire length of the tank and project inwardly from the back and front walls respectively and are positioned intermediate and spaced from the lateral sides **28** and **30** respectively. While projections **32** and **34** are in opposition to one another, they are laterally spaced apart and spaced in opposition as well so as to provide access between the side portions of the tank. These projections define a central restrictive portion or cage **36**, for purposes best set forth hereinafter. At the lower end of the tank in cage **36**, as best seen in FIG. 3, there is provided a coaxial aperture **38** through the bottom of the tank. For ease in manufacture, there is provided a seat member **40** which extends through aperture **38** and projecting beyond either side of the tank bottom **37**. Member **40** on the inside of the tank is preferably co-extensive in area with the internal dimensions of cage **36** and has a transverse lower shoulder **42** which seats against the inner surface of the bottom of the tank. The upper surface **44** of seat **40** is disposed at a slight angle relative to the bottom of the tank, for purposes best set forth hereinafter. Extending downwardly from adjacent shoulder **42** is a cylindrical portion **46**. A central or first bore **48** traverses the entire length of seat member **40**. Cylindrical portion **46** is preferably threaded both internally and externally. A second bore **50** traverses the front side of seat member **40** and communicates between bore **48** and the front

side of seat member 40 for purposes best set forth hereinafter. Seat member 40 may be maintained in position relative to the tank by suitable means such as sealing washer 52 and ring 54 which is provided with threads complimentary to the exterior of cylindrical portion 46. Extending upwardly into and threadily engaged with bore 48 is discharged pipe 56.

The first valving member used in conjunction with member seat 40 is a resilient, floatable, preferably hollow substantially impervious ball 60 having a diameter greater than bore 48 but less than the internal dimensions of cage 36. Ball 60, of course, is greater in diameter than the distance between opposing projections 32 and 34 and is thereby captured within the cage 36. Ball 60 is prevented from lateral movement but is capable of vertical movement within cage 36.

A cover 64 is provided at the opposite or upper end of tank 12 for closing the upper end of the tank. Said cover 64 may be suitable seated and sealed against the upper end of tank 12 as by the normal gasket, not shown, or if tank and cover are plastic by heat sealing, adhesives, or epoxy-resins, as at the juncture indicated at 65 in FIG. 4.

Inlet supply pipe 14 extends vertically along the side of stud 20 opposite from the location of tank 12 and is teed off as at 68 and provided with a suitable header 70 to prevent knocking and pressure variations. stub 72 extends through the cover 64 to provide access to the tank 12.

Adjacent cover 64 and located within central portion 36 is shut off mechanism 80. Shut off 80 includes a vertical member 82 which is externally complimentary to the internal dimensions of cage 36 defined by the front and back walls of the tank and projections 32 and 34. A central longitudinally extending cylindrical bore 84 is provided which is suitably threaded to accept the threaded end of stub 72. At the lower end of bore 84 there is provided a conical counterbore or seat 86 with its broadest portion opening into the interior of the tank 12 and providing a second seat in opposition to seat 40.

A second float 86 which cooperates with seat 86 is generally cylindrical in conformation, semi-rigid in construction and hollow at its upper end 88. Upper end 88 is further provided with a conical outer surface substantially complimentary at the conical seat 86. At the apex of the conical portion 90 there is provided an integral finder portion or nose 92 which is generally arrow shaped in cross section but cylindrical when viewed in plan. At the bottom end of float 86 there is provided a concave undersurface 94 for purposes best set forth hereinafter. Float 86 can be suitably constructed of a plastic material and is solid and thereby weighted at its lower end and hollow at its upper portion 88 so that it is susceptible of concentric floatation along its vertical axis.

Referring once again to the lower end of the tank and in particular operator means 18. Operator 18 is generally cylindrical in configuration having a body 100 and a head 102 at the outer end thereof. Intermediate its length but spaced closer to the front end, as viewed in FIG. 3, is a threaded section 104 adapted to be complimentarily accepted within a threaded aperture 106 of the tank 12. Aperture 106 is positioned in registry with bore 50 of seat 40 so that operator 18 extended through bore 50 but terminates short of bore 48. Body 100 is provided with a through bore 108 which is counterbored at the head end so as to provide shoulder 110. It is also counterbored at the front end and provided with a conical seat 112 which communicates with the through bore 108. Located within bore 108 is a stem 114 which extends through bore 108 and the counterbored portion and is provided at its outer extremity with suitable threads 116. Integral with the left end of shaft 114, as viewed in FIG. 3, is the unseating mechanism or driver 118. Driver 118 is conical in configuration at the point of its juncture with shaft 114 and is complimentary to seat 112. The remainder of driver 118 is complimentary to and axially moveable within the counterbore at the front end of operator 18. The front free end of driver 118 is provided with a sloping semi-concave face 120 which terminates at the upper extremity in a sharp point 122 for purposes best set forth hereinafter. At the opposite extremity or head end of shaft 114, a button member 126 having a threaded internal bore complimentary to threaded portion 116 is seated thereon. The inner end of button 126 is counterbored to provide shoulder 128. Extending between shoulders 110 and 128 respectively, is compression spring 130 which acts to normally maintain driver 118 positioned against the seat 112.

For aesthetic purposes after the tank is installed in the wall, operator 18 at its head extremity can be provided with a cover plate 134 for decorative purposes in association with wall 136 covering the tank installation. Plate 134 is maintained in mounted relation to the head 102 by suitable screw means 138 and to the wall 136 by screw 140. For compliance with building codes in most communities an overflow pipe 150 may be provided to extend through the top 64 into the upper portion of the tank and then vent laterally into the soil pipe 16 as shown, or down to the discharge pipe 56, not shown.

In the operation of the present device the tank 120 is filled with water through inlet supply line 14 and its connecting parts. The weight of the water in the tank maintains ball 60 in closed position of the seat 40, as seen in FIG. 3, and the buoyancy of float 87 seals off the bore seat 84 with its upper portion 90. Referring now to FIGS. 4 through 7, movement of the button 126 to the left compresses spring 130 and results in a projection of point 122 into bore 48 adjacent the high side of the angularly disposed surface 44 adjacent bore 48. This distends or compresses an edge of ball 60 and also moves the ball slightly toward the low side of angularly disposed surface 44. allowing the seal to be broken and water to pass through the discharge pipe 56 into the toilet bowl 10. When the seal is broken the ball rises as shown in FIG. 5 and with the water flowing out through discharge 56 the float 87 drops from its seated position shown in FIGS. 3 and 4. As the water is completely evacuated, the float 87, with its concave bottom surface, seats the ball 60 against the tapered surface of seat 40, as best seen in FIG. 6. As the water level rises, the weight of the solid end of the float 87 maintains ball 60 against seat 40 until the volume of water in the tank is sufficient to maintain the ball in seated position. At this point float 87 rises to its position of closing or sealing seat 86. It should be noted that a tight seal does not have to be effected in any of the parts of the operator 18 since the passage of water past the free end of the operator acts like an aspirator and clears the operator of all possible fluids therein. The entire operator 18 can

be removed fron the tank without turning off the water supply should point 122 or spring 130 become worn.

A vent passage 150 provides communication between the upper end of the tank and the soil pipe or stack 16 to accommodate air passage to and from the tank as well as overflow if there should be a temporary malfunction of the valves.

For clarity in illustration the water lines are not shown in FIG. 3 since the relative position of the various components and the water are substantially identical to the view shown in FIG. 7. Further, it must be pointed out that the flow of water from inlet stub 72 through vertical member 82 has been omitted from FIGS. 5 and 6 for clarity in illustration, it being understood of course that the water will commence flowing to refill the tank simultaneously with the unseating of float 87 from seat 86, with the large discharge bore 48 evacuating the tank substantially completely before refill is possible.

The angular disposition of upper surface 44 was selected to provide maximum contact between driver 118 and ball 60 as well as to create an unstatic surface for ball 60 to contact when establishing its seated relation with base 48. If the ball 60 contacts the right side of seat 40, as seen in FIGS. 3 and 6, it will roll to the left to the bore 48. If it contacts the left side the water filling the tank will float it to the right into seated position.

In the embodiment just disclosed the tank may be manufactured in multiple sections from the reinforced plastic materials with the projections 32 and 34 being extruded integral with the major wall portions of the tank and the top and bottom heat sealed or suitably connected thereto. In the event that code requirements are such that they demand a cast iron tank for this type of installation, then the invention can be modified, as seen in FIG. 9, wherein similar parts bear similar numerals with the suffix *a*. The projections 32 and 34 replaced by longitudinally extending rod like members 160 which are suitably mounted in seat 40 and shut off mechanism 80 to vertically position these members within the tank as well as acting as the cage or retaining means for float 87 and ball 60.

A further embodiment of the invention can be seen in FIGS. 10 through 12 wherein similar parts are designated by similar numerals with the addition of the suffix *b*. The tank 12*b* is generally rectangular in section for accomodation between adjacent studs 20*b* within a wall section, as set forth hereinbefore. This embodiment is preferably made of plastic materials and includes, deside the sidewalls 28*b* and 30*b* a plurality of transverse walls 180, 182 and 184 which extend substantially the entire length of the tank and extend between the front and back walls. The walls 180 and 182 are apertured, as at 186 and 188 respectively to provide a free communication between the various compartments on the tank, with the walls 180 and 182 being positioned laterally on opposite sides of the seats 86*b* and 40*b* to form the cage 36*b* for accomodation of the floating valve members 60 *b* and 87*b* respectively. The third transverse wall 184 defines a second chamber, the upper end of which communicates with the vent and overflow passage 150*b*. This is provided with a seat 190 similar in configuration to the float 87*b*. The wall 184 with sidewall 30*b* forms a vent passageway 194 which communicates with an opening 196 at the lower extremity of the tank for purposes best set forth hereinafter. The water level is omitted from FIG. 10 with the floats centrally positioned for clarity in illustration.

The operator 18b in this embodiment is provided with a plunger and button 126*b* which is operable from the front side of the wall and can utilize a spring return mechanism similar to the previous embodiment positioned internally of the housing of the operator. Instead of the point contact with ball 60 being carried out by the driver 118 as provided in the other embodiment, in this device there is provided a plate-like member 200 pivoted adjacent its upper extremity by suitable pin means 202. One or more rigid crescent shaped members 204 are positioned on and extend laterally from plate-like member 200. Plate 200 is normally aligned in a plane perpendicular to the axis of and adapted to be moved in an arc by the linear actuation of plunger 126*b* with the crescent shape, sharply pointed members 204 being swung into contact with and unseating the ball member 60*b*, the pivoted plate member 200 substantially closing the bore 48*b*, as shown in phanton. Plate 200 prevents an initial rush of water through the bore 48*b* and thereby insures that the hydrostatic head of water in the filled tank will not reseat the ball 60*b* when the members 204 revert back to their initial position. Thus, when plate-like member 200 is in its open or normally vertical position shown in FIG. 12 a free flow of water is possible with the extremities of sharply ended members 204 being positioned below the seat surface 44*b* which permits the ball 60*b* to be seated in the same fashion as the other embodiment. When plunger 126*b* is actuated linearly and extended inwardly to rock plate-like member 200 about pivot means 202 to its closed or blocked position, shown in phantom, a small amount of water is initially allowed to enter the bore 48*b* and equalize the pressure on both sides of the unseated ball 60*b* thereby permitting ball 60*b* to freely float upwardly. When operating pressure is relieved from the plunger 126*b* plate 200 returns to its normal position to permit the substantially complete discharge of the water from tank 12*b* through the bore 48*b*. The rush of water past plate 200 assisting in its return to the normal position plus assisting the retrograde motion of plunger 126*b* to its initial positoin.

During the filling operation of this embodiment, after the seating of ball 60*b*, the water coming in through pipe 72*b* operating in the same manner as previously described will raise the floats 87*b* and 192 to a predetermined level whereby both the intake 72*b* as well as the vent and overflow 150*b* will be closed when the floats 87*b* and 192 are seated against seats 86*b* and 190 respectively.

The operator 18*b* in this embodiment which depends from and projects below the tank bottom is provided with a downwardly extending forward flange 180 which is apertured to support the operator 18*b* between the wall of the discharge bore 48*b* and itself, for purposes set forth hereinbelow.

Associated with this embodiment is an anti-syphon device and the mounting bracket 220. The device 220 is a generally box-shaped member having downwardly extended end walls 222 suitably apertured as at 224 to accept fasteners 226 for the mounting of the device relative to the studs 20*b*. Device 220 has a base 228 preferably with a central reinforcing flange 240, and front and back walls 232 and 234 are a pair of sloping surfaces 236 which extend downwardly from the side walls 222 to a central bore 240 which extends through the

base **228.** The central bore **240** is larger than and adapted to freely accept a downwardly extending projection from the tank **12** containing the bore **48***b* so that the bore **48***b* discharges directly through central bore **240** into the discharge pipe **56***b* which is connected to the toilet **10***b*. In this fashion there is an ambient condition in which the atmosphere is open to the discharge pipe **56***b* during the egress of water from the tank. Without a closed positive connection between the tank and the tube **56***b*, it is impossible to have a syphoning effect. Extending upwardly from the surfaces **236** are a series of notched curbed baffles **250** having lower openings and upper notches to permit restricted egress of water past the baffles to bore **240** and passage of air if the tank contacts the upper edge of the baffles. This prevents surges or the bankup of any fluids in the event that there is an overflow through the opening **186** which discharges onto surface **236** in spaced relation from the central bore **240.** The tank **12***b* may be positioned directly atop the anti-syphon mounting bracket **220** with suitable vertically disposed stop means, not shown, being provided for front and back stability of the tank relative to the studs **20***b*.

In this embodiment the operator **18***b* is shown extending below the tank. It should be recognized, as was true in the previous embodiment that it is often desirable, should there be a malfunction in the spring or plunger means **126***b* that replacement be available with a minimum of effort. While this embodiment, in FIG. **12,** shows the operator **18***b* with bore **48***b* and its attendant tubular portion as an integral part of the tank **12***b*, it should be recognized that this can be made a secondary or removable member which could be extracted through the wall and through the front wall **232** of the anti-syphon means **220** by means of the slot **254** or any other suitable arrangement.

The embodiments shown as tank **12** can be manufactured economically from plastic materials such as glass filled polypropylene, polyethylene, poly-vinyl-chloride or any other material having the inherent structural qualities necessary to overcome the bursting strength of the contained water. The tank can be manufactured in many ways such as extruded with the top and bottom walls carrying the various seats being suitably added to the extruded walls; or the tank can be injection molded with either the front or back wall added in a secondary operation; or the tank and its associated fittings could be therein formed from sheet stock and the parts suitably joined as by adhesives, heat sealing, or epoxy resins. The choice of materials and method of manufacture are limited only by the designers experience.

An additional feature of this embodiment is the quickly installed support member **260** for the mounting of the toilet **10***b*. The support member **260** includes a pair of channeled members **262** having inwardly directed flanges **264** extending longitudinally in predetermined spaced relation. A plurality of apertures **266** are provided along one edge of members **262** and spaced from the channel-shaped opening formed by the flanges **264,** to accept suitable fasteners such as nails or screws to mount the channel members **262** to studs **20***b*. A pair of rigid, vertical, non-circular tubular members **270** are provided with transverse bores for accomodating a plurality of tubular members **272.** A plurality of intermediate apertures **274** are provided in tubular members **270** spaced between the transverse tubular members **272** to accommodate a suitable fastening means such as bolts to fasten the toilet **10***b* to the support member **260.** Thus, the channel members **262** can be readily installed on the studs **20***b;* the tubular assembly including vertical members **270** and transverse members **272** can be slid into the channel **262** between flanges **264** and the toilet **10***b* readily assembled by suitable fasteners through the apertures **274.** The discharge pipe **56***b* is suitably accomodated within the space between the transverse members **272** for attachment to the toilet **10***b*. A soil pipe, not shown, can be accepted within the other space between the members **272** and connected to a stack, not shown, as is normal practice.

Thus, the various embodiments of this invention disclose an economical water closet having its tank disposed between adjacent studs in an inner wall relationship and which with a few moving parts can provide a contact water supply for use in the discharge of solid waste materials.

I claim:

**1.** An improved flush tank for use with a toilet including a generally rectangular tank having substantially vertical height and a plurality of transverse axially extending reinforcing members dividing the tank into generally elongated compartments, first and second ports communicating through the bottom and top of the tank respectively with at least one of said compartments, each of said compartments communicating laterally with any adjacent compartments, an angularly disposed first seat means surrounding said first port discharging through the bottom of said tank, resilient impermeable floatable ball means adapted to seat upon and seal with said first seat means, said reinforcing members forming the compartment within which said first bore is located being spaced so as to guide said ball into seated relation on said seat means, second seat means surrounding said second port providing inlet means at the top of the tank which is connected to a pressurized water source, second float means adapted to cooperate with second seat means to shut off said water source at a predetermined water level in said tank, operator means including at least one means for contacting and unseating said ball from said first seat, and vent means for introducing and removing air from said tank during the ingress and egress of water from said tank.

**2.** A tank of the type claimed in claim **1** wherein said compartments are formed by at least one pair of spaced ribs projecting inwardly from opposing walls of said tank and terminating in free edges in spaced opposition to one another, said float means being greater in size than the space between opposing pairs of ribs.

**3.** A tank of the type claimed in claim **2** wherein said tank body is manufactured of extruded plastic, said ribs being formed integral therewith and the top and bottom of the tank carrying the associated seats being fastened and sealed to the main body of said tank.

**4.** A tank of the type claimed in claim **2** wherein said second seat means being in the form of a counterbore communicating with said second bore which is the inlet, said second float means being generally cylindrical in configuration and having a weighted bottom and a conical, hollow upper end adapted to cooperate and seal with said second seat.

**5.** A tank of the type claimed in claim **1** wherein said operator means includes a through bore transverse to said tank axis and positioned adjacent said angularly

disposed first seat, a spring loaded driver movably positioned within said bore, said driver adapted with said ball when linearly moved through said bore for point engagement to resiliently distort said ball whereby water is permitted to bypass said ball and cause it to become unseated and float during the egress of water through said first bore.

6. A tank of the type claimed in claim 1 wherein said operator means includes one or more means for contacting and unseating said ball from said seat, blocking means for preventing egress of the water from said tank during the unseating of said ball.

7. A tank of the type claimed in claim 5 wherein said operator means includes a pivoted plate-like member positioned within said first bore and adapted to provide free access through said bore in a first normal position and to substantially block said bore in a second closed position, unseating means mounted on said plate-like member including one or more pointed projections adapted to contact said ball and to unseat said ball when said plate-like member is in its second closed position whereby said ball is permitted to be unseated and float to the upper level of the water in said tank before egress of the water from said tank, and means for moving said plate-like member from its first normal open position to its second closed position.

8. A tank of the type claimed in claim 1 wherein said tank includes transverse walls extending between opposed walls of said tank and extending substantially throughout the length of said tank to divide said tank into at least three compartments, at least a pair of said transverse walls being apertured and positioned on opposite sides of and extending substantially between said first and second seats to form said cage-like restrictive means for guiding said two float means, said vent means communicating the upper end of a compartment which is in lateral communication with said cage-like restrictive means, said vent means including third seat means, third float means adapted to close said vent when the water level reaches a predetermined point in the tank, said vent means communicating through a passage with the lower end of said tank, anti-syphon means adjacent the lower end of said tank to accept the discharge through said first bore and said vent means passage.

9. A tank of the type claimed in claim 8 wherein said anti-syphon means includes means for mounting to a support adapted to accept the weight of the tank, a central bore larger than and capable of accepting a projection containing said first bore with an ambient vent, canted surfaces leading downwardly to said bore, baffles extending vertically from said surfaces, said vent passageway discharging into said anti-syphon means at a point laterally removed from said central bore, said central bore being connected to a discharge pipe communicating with a toilet, whereby said ambient vent around said projection containing said first bore plus the baffle arrangement between said vent passageway and said central bore precludes any syphon action and contamination between said toilet and an inlet water supply connected to said second bore.

10. An anti-syphon wall enclosed flush tank for use with a toilet including a generally rectangular tank having a plurality of transverse axially extending reinforcing members dividing the tank into generally elongated compartments, first and second bores communicating through the bottom and top of the tank with a generally centrally located compartment, said central compartment communicating laterally with any adjacent compartments, an angularly disposed first seat means surrounding said first discharge bore at the bottom of said tank, resilient impermeable floatable ball means adapted to seat upon and seal with said first seat means, second seat means surrounding said second inlet bore means at the top of the tank which is connected to a pressurized water source, second float means adapted to cooperate with said second seat means to shut off said water source at a predetermined water level in said tank, vent and overflow passage means communicating with an adjacent chamber, third seat means surrounding said passage means, a third float means adapted to cooperate with said third seat means to seal said vent and overflow passage at a predetermined water level in said tank, said vent and overflow passage at its opposite end of said tank, operator means including one or more means for contacting and unseating said ball from said first seat, blocking means for preventing discharge of the water from said tank during the unseating of said ball and an anti-syphon device including means for mounting said device to a support adapted to accept the weight of the tank and the water to be contained therein, said anti-syphon device being open to ambient conditions, a central bore larger than and capable of accepting in spaced ambient venting relation a delivery means containing said first bore depending from said tank, baffled surface means draining into said central bore, said vent and overflow passage discharging onto said baffled surface for drainage, if any, into said central bore which is connected to suitable means for discharge of said water into said toilet upon actuation of said operator means or discharge from said vent and overflow passage, means for hanging said toilet in axially spaced relation from the same supports holding the anti-syphon device and tank.

11. A tank of the type claimed in claim 10 in combination with a wall hung water closet and mounting bracket assembly for said wall hung water closet including a pair of mirror image channel means adapted to be mounted in opposition to a pair of adjoining stud members, vertical mounting means including two or more vertically disposed support members and a plurality of horizontally disposed members supporting said vertical members, the extremities of said horizontal members being adapted to be slidingly accepted within said channel means, means on said vertical mounting means to cooperate with and support said water closet.

12. A device of the type claimed in claim 11 wherein said vertical support members are laterally apertured tubular members arranged in spaced relation on a plurality of horizontally disposed tubular members which are telescoped through said lateral apertures, said horizontally disposed tubular members extending between and having their extremities slidingly accepted within said channel means, said means on said vertical members for supporting said water closet including a plurality of fore and aft disposed apertures adapted to accept a plurality of fasteners for support of said water closet.

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