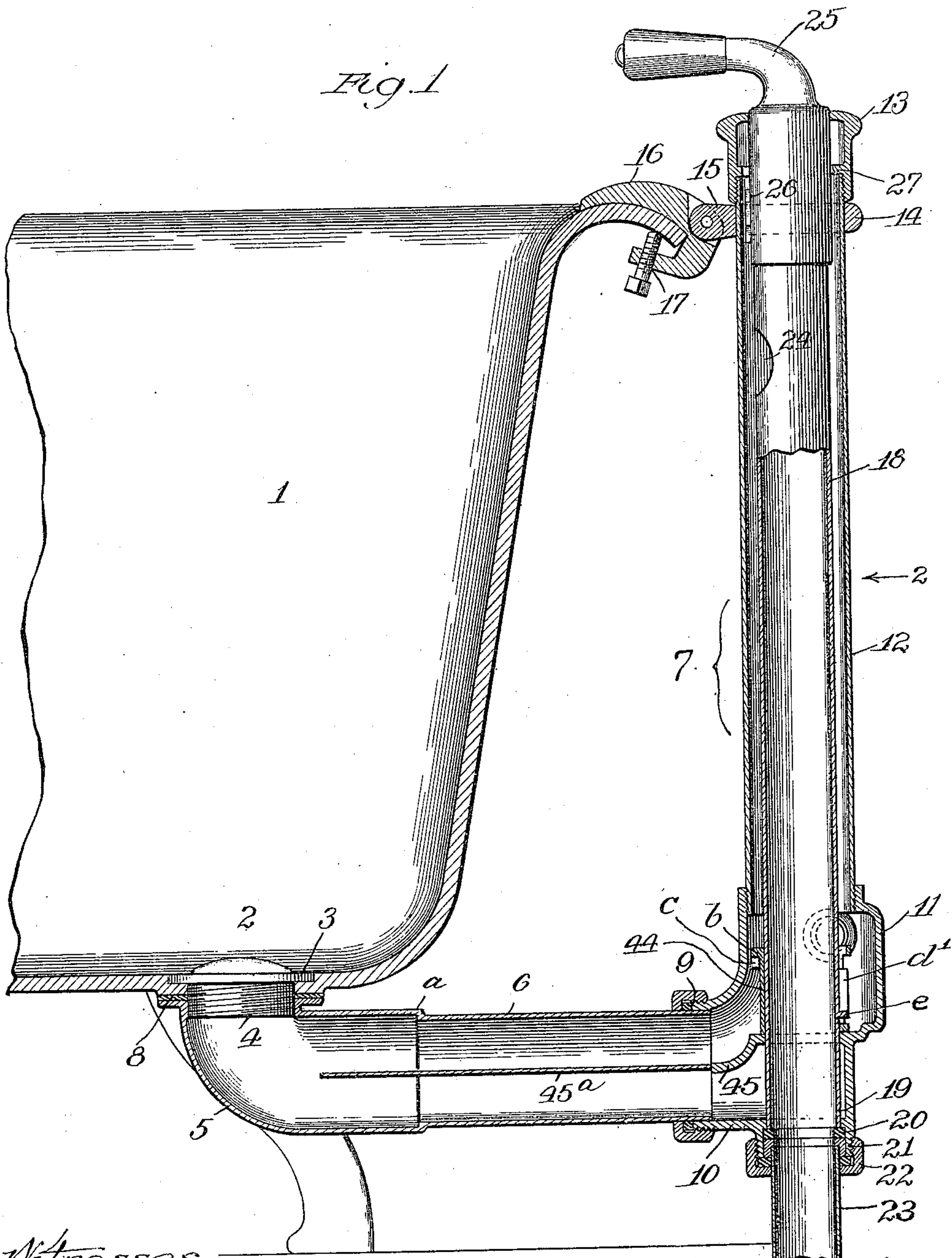


E. G. WATROUS.
 FIXTURE FOR BATH TUBS AND LAVATORIES.
 APPLICATION FILED JAN. 15, 1903.

975,662.

Patented Nov. 15, 1910.

2 SHEETS—SHEET 1.



Witnesses:
Harold W. Bant
Louis B. Erwin

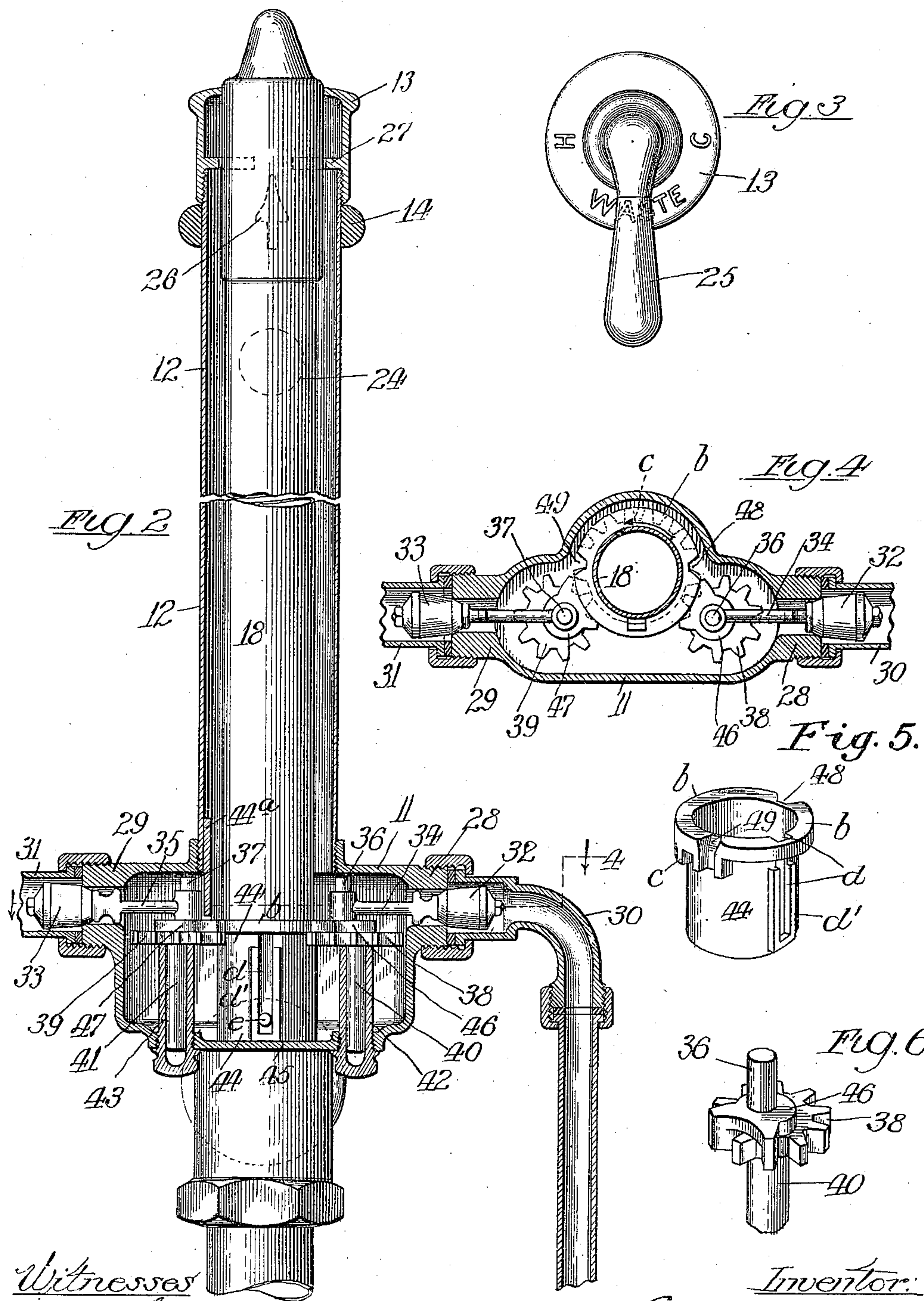
Inventor:
E. G. Watrous
 By *Rector & Hobbs*
H. S. Atty

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Witnesses
 Harold B. Pratt
 Louis B. Erwin

Inventor:
 Earl G. Watrous
 By: Redmond H. H. Hays

UNITED STATES PATENT OFFICE.

EARL G. WATROUS, OF CHICAGO, ILLINOIS.

FIXTURE FOR BATH-TUBS AND LAVATORIES.

975,662.

Specification of Letters Patent. Patented Nov. 15, 1910.

Application filed January 15, 1903. Serial No. 139,183.

To all whom it may concern:

Be it known that I, EARL G. WATROUS, a citizen of the United States, residing at Chicago, in the State of Illinois, have invented a certain new and useful Fixture for Bath-Tubs and Lavatories, of which the following is a description, reference being had to the accompanying drawings, forming a part of this specification.

My invention has for its object the production of a sanitary fixture which is not liable to become fouled, which will control both the inlet and discharge of the water to and from the bath tub through a single orifice in the latter, which may be applied to the tub in different positions around the same, as circumstances may require, and which shall be simple in construction, economical to manufacture and convenient and efficient in operation.

In the accompanying drawings, Figure 1 is a vertical section of one end of a bath tub, showing my fixture applied thereto; Fig. 2 a vertical cross-section of the fixture itself, looking toward the left in Fig. 1; Fig. 3 a top plan view of the upper end of the fixture; Fig. 4 a horizontal section approximately on the dotted line 4—4 of Fig. 2; Fig. 5 a perspective view of the operating sleeve and gear; and Fig. 6 a perspective view of one of the pinions driven by said gear.

The same letters of reference are employed to indicate corresponding parts in the several views.

The bath tub 1 is provided with a single orifice located in its bottom near one end, which serves both for the inlet of water to the tub and its subsequent escape therefrom. This orifice is covered by a grating 2, having a flange 3 seated in an annular recess formed in the bottom of the tub around the orifice, and is provided with a depending exteriorly threaded sleeve or connection 4, upon which is screwed the interiorly threaded upper end of an elbow 5, forming part of the pipe 6 leading from the bath tub to the lower end of the fixture 7. A packing ring 8 is interposed between a flange formed upon and surrounding the upper end of the elbow 5 and an annular boss upon the lower side of the tub 1, to effect a tight joint between the

parts when the sleeve 4 is screwed firmly into the elbow 5. The elbow 5 and the pipe 6 leading to the fixture may be a single casting, or the elbow may be a short casting terminating at the shoulder *a*, and the remainder of the pipe 6 consist of a piece of tubing inserted within the end of the elbow casting and soldered thereto. At its outer end the pipe 6 has a slip-joint connection 9 with a pipe connection 10 projecting from a casing 11 forming the lower part of the fixture.

Screwed into the upper end of the casing 11 is the lower end of a vertical pipe or cylindrical casing 12 extending to the top of the bath tub and having screwed upon its upper end a cap 13. For convenience in attaching the upper end of the fixture to bath tubs having rims of the shape of that shown in Fig. 1 of the drawings the fixture is loosely surrounded beneath the cap 13 with a collar 14 having upon its side next to the bath tub an ear 15 upon which is pivoted a clip 16 whose lower jaw carries a set screw 17 engaging the under side of the rim of the tub, by tightening up which screw the clip, and consequently the upper end of the fixture itself, may be secured to the tub.

Extending vertically through the outer pipe or casing 12 of the fixture is an internal pipe 18, whose lower end 19 constitutes the waste or discharge valve and rests upon a seat 20 secured in the pipe connection 21 depending from the lower end of the casing 11, said pipe connection having a slip-joint connection 22 with the discharge pipe 23. The internal pipe 18 also constitutes the overflow pipe, for which purpose it is provided in its upper portion with the overflow opening 24, and the valve operating means, for which latter purpose its upper end is provided with an operating handle 25. This pipe is free to be lifted by means of the handle 25, to open the valve at its lower end and permit the water in the tub to escape through the elbow 5, pipe 6, connection 10 and discharge pipe 23, at which time, by slightly turning the handle to right or left, the pipe may be maintained in elevated position, with the valve open, by means of a lug 26 upon the forward side of the pipe near its upper end (Figs. 1 and 2), which lug is adapted to pass upward through a re-

cess formed in the forward side of an internal annular shoulder 27 within the cap piece 13 when the handle 25 and pipe 18 are lifted, and to then catch over and rest upon said shoulder at one side or the other of the recess therein when the handle is turned as described, and thereby support the parts in elevated position. The contact of the upper end of this lug 26 with the top of the cap piece 13 limits the upward movement of the parts, while the depending lower end of the lug, which does not rise above the shoulder 27 but remains in the recess therein, limits the movement of the handle in either direction while in elevated position. By turning the handle back to middle position the lug 26 will be brought over the recess in the shoulder 27 and the parts will thereupon drop back to normal position and close the discharge valve. In such lower position the lug 26 is beneath the shoulder 27, so that the handle 25 and internal pipe 18 may be freely turned to any limit in either direction, but cannot be lifted, to open the discharge valve, except when the handle is in normal position with the lug 26 immediately beneath the recess in the shoulder 27.

The casing 11 is provided with opposite pipe connections 28 and 29 (Figs. 2 and 4), to which are coupled the hot water and cold water supply pipes 30 and 31. The admission of water from these pipes to the interior of the casing 11 is controlled by valves 32, 33, in this instance consisting of Fuller balls seating against the outer end of the pipe connections 28, 29, and provided with inwardly extending stems 34, 35, whose inner ends are provided with eyes fitting over studs 36, 37, projecting vertically from and located eccentrically upon pinions 38, 39, having depending bearing spindles 40, 41, Fig. 2, journaled in tubular bearings 42, 43, projecting vertically from the bottom of the casing 11 and screwed therein.

Surrounding the internal pipe 18 within the casing 11 is a loose sleeve 44, which rests at its lower end upon a horizontal diaphragm or partition 45, formed integrally in the casing 11, Figs. 1 and 2. At its upper end this sleeve 44 is provided with a circumferential flange *b*, upon the under side of which is formed a gear *c*, adapted to cooperate with the pinions 38 and 39 (Figs. 4, 5 and 6). The sleeve 44 is provided in one side with a vertical slot *d* in which fits a stud *e* projecting from the internal pipe 18. The engagement of this stud with the slot in the sleeve serves to lock the pipe and sleeve together, so that when the pipe is turned by means of the handle at its upper end the sleeve will be turned with it; while the pipe is left free to be moved vertically in the manner and for the purpose heretofore described, without moving the sleeve with it. The walls

of the slot *d* are reinforced by ribs *d'* formed upon the outer surface of the sleeve 44. A depending plate 44^a secured to the outer pipe 12 within its lower end serves to prevent vertical displacement of the sleeve 44.

When the parts are in the position shown in the drawings the handle 25 is in "waste" position, and free to be lifted to open the waste valve at its lower end as heretofore explained. In this position the cooperating gears within the casing 11 occupy the position shown in Figs. 2 and 4 and hold the valves 32 and 33 against their seats, to cut off the water supply from the interior of the casing. When, however, the handle is turned in either direction the sleeve 44 will be turned with it, and its gear *c* will engage the pinion 38 or the pinion 39, according to the direction in which the handle is turned, and, turning such pinion during its continued movement, will open the valve 32 or 33 connected with such pinion. Thus, if we assume the handle to be turned to the right in Fig. 3, it will turn the sleeve 44 in the direction of the arrow in Fig. 4, and cause its gear *c* to mesh with the left hand pinion 39 and open the valve 33, thereby admitting hot or cold water (as the case may be) to the interior of the casing 11; while the right hand gear 38 will remain stationary and the valve 32 closed. So, if the handle be turned to the left in Fig. 3, the sleeve 44 will be turned in the opposite direction in Fig. 4, and its gear *c* will engage the right hand pinion 38 and open the valve 32, while the left hand pinion will remain stationary and the valve 33 closed.

For the purpose of positively locking the pinions in normal position and holding the valves closed excepting when the pinions are turned to open the valves in the manner described, I provide each pinion with a locking cam 46, 47, whose outer edge is curved to snugly fit the periphery of the flange *b* upon the upper edge of the sleeve 44. The engagement of these cams with the periphery of the flange positively locks the pinions 38, 39 in normal position, except when the sleeve 44 is turned in a direction to engage its gear *c* with one or another of the pinions, at which time a notch 48 or 49, provided in opposite sides of the flange *b* for the purpose, comes opposite the adjacent end or corner of the cam and permits the latter to enter it as the pinion is turned by the gear upon the sleeve. Thus in Fig. 4 both of the pinions 38 and 39 are positively locked in normal position, with the valves 32 and 33 closed, by the engagement of cams 46, 47 with the flange *b*; but if the sleeve 44 be turned in the direction of the arrow in said figure the notch 49 will come opposite the upper end or corner of the cam 47 in said view

at the same time that the gear *c* engages the pinion 39, so that said pinion and cam may be freely turned in the direction of the arrow to open the valve 33. The pinion 38 will remain locked in normal position at such operation by the engagement of its cam 46 with the flange *b*, unless the sleeve 44 be turned far enough in the direction of the arrow to cause the gear *c* to engage the pinion 38, in which case the notch 49 in the flange *b* will be brought opposite the lower end or corner of the cam 46 and the pinion 38 be turned in the direction of the arrow upon it, to open the valve 32.

As will be understood from the foregoing, the handle 25 may be turned in either direction from normal position, to open either valve, and thereby admit either hot or cold water to the interior of casing 11; while if it be turned far enough in either direction both valves may be opened, to admit both hot and cold water to the casing. A slight preliminary movement of the handle to the right from the position shown in Fig. 3 will bring the first tooth of the gear *c* into position to contact the first tooth of the pinion 39 in its path, Fig. 4, and the notch 49 into such position that it will receive the upper prong or tooth of the locking cam 47 and permit the further revolution of the pinion; and the continued movement of the handle in the same direction for about a third of a revolution will fully open the valve 33, Fig. 4, without opening the valve 32, and assuming the valve 33 to control the cold water supply such movement of the handle will admit a maximum quantity of cold water. If the handle be turned on beyond such third revolution the gear *c* will engage the pinion 38 controlling the valve 32, and gradually open the latter, while its engagement with the pinion 39 will gradually close the valve 33. As the handle is turned on from a third to a half revolution, therefore, the quantity of cold water admitted will be gradually decreased and the quantity of hot water gradually increased, until, when the handle reaches middle position at the end of a half revolution, hot and cold water will be admitted in equal quantities. If it be moved on in the same direction, the supply of cold water will be gradually decreased and that of hot water increased until, when it reaches a position about two thirds of a complete revolution around, the valve 33 will be entirely closed and the supply of cold water cut off, and a maximum supply of hot water be admitted. Its further movement to normal position will close the valve 32 and entirely cut off the supply of water, so that if the handle be then lifted the water which has been admitted to the casing and thence to the bath tub will be permitted to escape, while the supply valves remain closed. The

notch 48, Fig. 4, will, just before the end of a complete revolution of the pinion 39, have engaged the prong or tooth of the locking cam that is shown lowermost in that figure, and said pinion will have been returned to normal position, the end of the gear *c* shown at the right in Fig. 4 having passed out of gear with said pinion so that the sleeve might continue to revolve without further turning the pinion.

By turning the handle 25 in one direction or the other, therefore, hot or cold water may be admitted to the bath tub as described, and by turning it far enough both may be admitted at the same time in any relative quantities desired; and by bringing the handle back to normal position the supply of both may be cut off and the water which has been admitted may then be permitted to escape by lifting the handle. The top of the cap piece 13 at the upper end of the fixture is provided with an index, as shown in Fig. 3, to indicate the various positions to which to turn the handle for the results desired. As the handle can be lifted, to open the discharge valve, only when the handle is in normal or "waste" position, and as the supply valves are locked in closed position at such time, it follows that the discharge valve cannot be opened when either of the supply valves is open.

The water admitted to the interior of the casing 11 in the manner described passes thence through the pipe 6 and elbow 5 into the bath tub, and to prevent its flowing along the bottom of the pipe 6 and carrying with it any sediment which may have been previously deposited thereon by waste water from the tub I provide within the pipe 6 and elbow 5 a horizontal diaphragm 45^a, extending from side to side thereof, and at its outer end abutting against the downwardly curved edge or end of the diaphragm 45 within the casing 11, Fig. 1. The diaphragm 45^a extends at its left hand or inner end to a point adjacent the vertical plane of the orifice in the bottom of the bath tub, so that the supply of water passing to the tub is carried upon this diaphragm to a point as near said orifice as may be conveniently done without projecting the diaphragm into position to catch any of the waste water escaping from the tub when the discharge valve is opened.

In the ordinary use and operation of my improved fixture the handle 25 will be turned to position to admit hot or cold water, or both in the desired relative quantities, to the bath tub. This water will pass from the casing 11 through pipe 6 and elbow 5 to the tub, and will also rise in the outer pipe 12 of the fixture. If the supply is not cut off, by restoring the handle to normal position, before the water reaches the level of overflow opening 24 in the internal pipe 18 the surplus will escape through said opening and pipe

to the waste pipe 23 at the bottom of the fixture. After the water in the tub has been used, the handle 25 (assuming it to have been returned to normal position to cut off the supply of water) is lifted, to open the discharge valve 19 at the lower end of the fixture, and is slightly turned to right or left to cause the lug 26 to catch over the shoulder 27 and maintain the valve in open position while the water is escaping, as heretofore explained. When the valve is thus opened the water in the tub rushes down through the grate-covered orifice 2 into the elbow 5 and thence along the bottom of the latter and the bottom of the pipe 6, beneath the diaphragm 45^a, to the discharge opening in the bottom of the fixture, while the water within the outer pipe 12 of the fixture will descend in the latter and flow to the left toward the bath tub, along the upper side of diaphragms 45 and 45^a, and mingle with the waste water from the tub at the left hand or inner end of the diaphragm, and pass thence with such waste water to the discharge outlet.

As will be understood from the foregoing, the waste water from the tub never reaches the interior of the fixture above the diaphragm 45 therein, so that there is no opportunity for the interior of the fixture to become fouled by such water. It will be further understood that water admitted to the bath tub passes over substantially no surface which has been exposed to waste water discharged from the tub, so that the newly admitted water does not carry back into the tub any sediment deposited by the waste water. Both in respect to maintaining the interior of the fixture in sanitary condition, therefore, and in respect to cleanliness in the tub itself, my new fixture is an improvement upon any fixtures in which waste water from the tub is permitted access to the interior of the fixture, or in which any surfaces are alternately exposed to the action of water escaping from the tub and water admitted to the tub.

Inasmuch as the employment of my fixture requires but a single opening in the bath tub, the convenience and economy of its application in this respect are manifest; while another advantage due to this feature is the fact that the single connection at the bottom of the bath tub permits the fixture to be applied to the tub in any position about the end of the tub which may be necessary or most convenient, since the elbow 5 and pipe 6 of the supply and discharge connection may be directed outward at any angle from the orifice in the bottom of the tub and thereby permit the fixture to be applied to the tub at any point along its end, or at either corner, or even around the corner at one side, it being simply necessary to provide a combined elbow 5 and pipe 6 of

proper length to connect the bottom of the fixture with the orifice in the bottom of the tub.

The particular means which I have illustrated and described for connecting the upper end of the fixture to the rim of the tub is convenient and efficient and advantageous for tubs having rims such as that shown; but where the tub has a wide, flat rim, for instance, such connecting means may be dispensed with and the upper end of the fixture extended vertically through a hole provided in such rim for the purpose.

In the particular form illustrated in the drawings my new fixture has been specially adapted to bath tubs, but the invention which it embodies may also be utilized to advantage in lavatory fixtures, as illustrated in another application filed by me upon such fixtures.

I claim:

1. A bath tub fixture having a combined supply and discharge pipe connected at one end with the tub, said pipe containing passages for the admission and discharge of the water, and valve mechanism arranged toward the other end of said pipe for controlling the independent admission and discharge of water through one or the other of said passages; substantially as described.

2. A bath tub fixture having a combined supply and discharge pipe connected with the tub, said pipe containing separate passages for the admission and discharge of the water, a supply valve for controlling the admission of the water to the tub through one of said passages, a discharge valve for controlling its escape or discharge therefrom through the other of said passages, and a handle common to the supply valve and the discharge valve for operating them independently of each other; substantially as described.

3. A bath tub fixture connected with the tub by a single pipe, a horizontal partition or diaphragm separating it into upper and lower passages, a supply valve controlling the admission of water to the tub through the upper one of said passages, a discharge valve controlling the escape of water from the tub through the lower one of the passages, and manually operated means common to both of said valves for independently operating them; substantially as described.

4. A bath tub fixture connected with the tub by a single pipe, a horizontal partition or diaphragm separating it into upper and lower passages, a supply valve controlling the admission of water to the tub through the upper one of said passages, a discharge valve controlling the escape of water from the tub through the lower one of said passages, and an operating handle for said valve having a rotary movement for opening and closing the supply valve and a ver-

tical movement for opening and closing the discharge valve; substantially as described.

5. A bath tub fixture comprising a casing connected with the tub by a combined supply and discharge pipe, inlet and discharge valves arranged in said casing for controlling the admission and discharge of water through said pipe, an outer tube extending upwardly from said casing and communicating with said supply and discharge pipe, an inner tube arranged within said outer tube operatively connected with said inlet and outlet valves and provided with an operating handle whereby water may be admitted to the tub by one movement of the handle and discharged therefrom by another, said inner tube being provided with an overflow opening at the high water level of the tub and its interior being in communication with the discharge opening.

6. A bath tub fixture comprising a casing connected with the tub by a combined supply and discharge pipe and provided with inlet and discharge chambers governed by inlet and discharge valves, an outer tube extending upwardly from said casing and communicating with said supply and discharge pipe, an inner tube arranged within said outer tube its lower end forming a discharge valve for governing the discharge passage and its upper end provided with an operating handle whereby said discharge valve may be lifted to operate it and whereby also said tube may be rotated, said inner tube being also provided with an overflow opening at the high water level of the tube and its interior being in communication with the discharge opening, and an inlet valve within said casing arranged to be operated by the rotary movement of said inner tube.

7. A bath tub fixture comprising a casing connected with the tub by a combined supply and discharge pipe and provided with an inlet and a discharge chamber governed respectively by hot and cold inlet valves and a discharge valve, an outer tube extending upwardly from said casing and communicating with said inlet chamber, an inner tube arranged within said water tube its lower end forming the discharge valve governing the exit from the discharge chamber and its upper end provided with an operating handle whereby said discharge valve may be lifted to operate it and whereby also said tube may be rotated, said inner tube being also provided with an overflow opening at the high water level of the tub and its interior being in communication with the discharge opening, and inlet valves for hot and cold water operable by the rotary movement of the handle to admit either hot water or cold water or varying quantities of both hot and cold water according to the direction and extent of such rotary movement.

8. A bath tub fixture comprising a casing

connected with the tub by laterally extending supply and discharge passages both terminating at a single opening in the bottom thereof, said casing being provided with an inlet chamber communicating with said supply passage and controlled variably by both hot water and cold water inlet valves and also provided with a discharge chamber communicating with said discharge passage and controlled by a discharge valve, an outer tube extending upwardly from said casing and communicating with said inlet chamber, an inner tube arranged within said outer tube, its lower end forming the discharge valve governing the exit from the discharge chamber and its upper end provided with an operating handle whereby said discharge valve may be lifted to operate it and whereby also said tube may be rotated, said inner tube being also provided with an overflow opening at the high water level of the tub and its interior being in communication with the discharge opening, and inlet valves for hot and cold water operable by the rotary movement of the handle to admit hot water or cold water or varying quantities of both hot and cold water according to the direction and extent of such rotary movement.

9. A bath tub fixture comprising a casing separated by an internal partition into an upper water chamber and a lower discharge chamber, both communicating with the tub through a combined supply and discharge pipe having separate supply and discharge passages communicating with the water and discharge chambers of the casing, respectively, a valve seat at the bottom of the discharge chamber of the casing, a tube resting at its lower end against said seat and extending vertically through the casing and provided at its upper end with a handle for lifting and turning it, an inlet valve controlling the admission of water to the water chamber of the casing, and means intermediate said valve and tube for opening and closing the valves by turning the tube; substantially as described.

10. A bath tub fixture comprising the casing 11 having the pipe connections 10, 21, 28 and 29 and the valve seat 20, the outer tube 12 extending vertically from the casing 11 and inner tube 18 extending vertically through the tube 12 and casing 11 and resting at its lower end upon the seat 20 and provided at its upper end with a handle for lifting and turning it, inlet valves controlling the admission of water through the pipe connections 28 and 29, and operating means intermediate said valves and the tube 18 for opening and closing said valves by turning said tube; substantially as described.

11. A bath tub fixture comprising the casing 11, having pipe connections 10, 21, 28 and 29 and the valve seat 20, the outer tube 12 extending vertically from the casing 11

and provided at its upper end with the cap 13 having an internal annular shoulder, the inner tube 18 extending vertically through the outer tube 12 and casing 11 and normally resting at its lower end upon the valve seat 20 and provided at its upper end with the handle 25 and with the lug 26 cooperating with the annular shoulder 27 and the recess therein, inlet valves controlling the admission of water through the pipe connections 28 and 29, and operating means intermediate said valves and the tube 18 for opening and closing said valves by turning said tube; substantially as described.

12. A bath tub fixture comprising the casing 11 having the pipe connections 10, 21, 28 and 29 and the internal partition 25 and valve seat 20, the elbow 5 and pipe 6 having the slip-joint connection 9 with the pipe connection 10 of the casing, and containing the diaphragm 45^a separating their interior into upper and lower passages communicating with the interior of the casing 11 above and below the diaphragm 45, respectively, the outer tube 12 extending vertically from the casing 11, the inner tube 18 extending vertically through the outer tube 12 and the casing 11 and normally resting at its lower end upon the valve seat 20, and provided at its upper end with the handle 25, inlet valves controlling the admission of water through the pipe connections 28 and 29, and operating means between said valves and the tube 18 for opening and closing said valves by turning said tube; substantially as described.

13. A plumbing fixture comprising a casing provided with connections for hot water and cold water pipes, inlet valves controlling the admission of water through said connections, a single operating handle common to said valves, and means intermediate said handle and valves for positively opening and closing either valve independently of the other or for opening both to any relative degree desired by means of said handle; substantially as described.

14. A plumbing fixture comprising a casing having connections for hot water and cold water pipes, valves controlling the admission of water through said connections, a single operating handle common to said valves, means intermediate said handle and valves whereby either valve may be opened independently of the other by means of said handle, and locking means cooperating with the valves for locking each valve in closed position except when opened by a movement of the handle; substantially as described.

15. A bath tub fixture comprising a casing having connections for supply and discharge pipes, valves controlling the admission and discharge of water through said connections, a combined supply and discharge connection leading laterally from the

casing, a single operating handle common to said valves, and positive operating means intermediate said valves and handle whereby water may be admitted by one movement of the handle and discharged by another movement thereof, said operating handle and operating means being arranged extraneous of the tub; substantially as described.

16. A plumbing fixture adapted to be arranged extraneous of a tub and comprising a casing having connection for supply and discharge pipes and a vertical tube communicating with said casing and extending above the high water level of the tub, a rotatable and longitudinally movable tube extending vertically through said casing and communicating vertical tube, the interior of said movable tubes communicating with the discharge pipes and with said vertical tube at the high water level of the tub and its upper end provided with an operating handle by which it may be lifted and turned, a valve seat in the lower part of the casing with which the lower end of said movable tube cooperates to control communication between the casing and said discharge pipe, an inlet valve controlling the admission of water to the casing, and operating means intermediate said valve and movable tube whereby said valve may be opened or closed by turning said tube, and whereby the water admitted to the casing may be discharged by lifting said tube from the valve seat in the lower end of the casing; substantially as described.

17. A plumbing fixture comprising a casing having connections for hot water and cold water pipes and a connection for a discharge pipe, valves controlling the admission of water through the first mentioned connections and a valve controlling the discharge of the water through the last mentioned connection, a single operating handle common to all three of said valves, and operating means intermediate said valves and handle for positively operating the admission valves in both directions whereby either inlet valve may be opened independently of the other or both be simultaneously operated and whereby the discharge valve may be opened independently of the inlet valves, by means of said single handle; substantially as described.

18. A plumbing fixture comprising a casing having connections for hot water and cold water pipes and a connection for a discharge pipe, valves controlling the admission of water through the first mentioned connections and a valve controlling the discharge of the water through the last mentioned connection, a single operating handle common to all three of said valves, and operating means intermediate said valves and handle whereby either inlet valve may

be opened independently of the other, or both be opened simultaneously with or to any desired relative degree, and whereby the discharge valve may be opened independently of the inlet valves, all by means of said single handle for positively operating the admission valves in both directions; substantially as described.

19. A plumbing fixture comprising a casing having connections for hot water and cold water pipes and a connection for a discharge pipe, inlet valves controlling the admission of water through the first mentioned connections and a discharge valve controlling its discharge through the last mentioned connection, a single operating handle common to all of said valves, means intermediate said valves and handle whereby either inlet valve may be opened independently of the other and the discharge valve be opened independently of the inlet valves, by means of said handle, and locking means for preventing the discharge valve from being opened while either of the inlet valves is open; substantially as described.

20. A plumbing fixture adapted to be arranged extraneous of a tub, and comprising a casing having connections for hot water and cold water supply pipes and for a discharge pipe, and also for a vertical tube communicating with said casing and extending above the high water level of the tub, a rotatable and longitudinally movable tube extending vertically through said casing and communicating vertical tube, the interior of said movable tube communicating with the discharge pipes and with said vertical tube at the high water level of the tub, and its upper end being provided with an operating handle for lifting and turning said tubes, a valve seat in the lower part of the casing with which the lower end of said movable tube coöperates to control communication between the casing and discharge pipe, inlet valves controlling the admission of water to the casing from the hot water and cold water pipes, and operating means intermediate of said valves and movable tube whereby said valves may be independently opened by turning the tube in opposite directions, and whereby the water admitted to the casing may be subsequently discharged by lifting said tube from the valve seat in the lower end of said casing; substantially as described.

21. A plumbing fixture adapted to be arranged extraneous of a tub, and comprising a casing having connections for hot water and cold water supply pipes and for a discharge pipe, and also for a vertical tube communicating with said casing and extending above the high water level of the tub, a rotatable and longitudinally movable tube extending vertically through said casing and

communicating vertical tube, the interior of said movable tube communicating with the discharge pipe and with said vertical tube at the high water level of the tub and its upper end being provided with an operating handle for lifting and turning said tubes, a valve seat in the lower part of the casing with which the lower end of said movable tube coöperates to control communication between the casing and discharge pipe, inlet valves controlling the admission of water to the casing from the hot water and cold water pipes, and operating means intermediate of said valves and movable tube whereby said valves may be independently opened by turning the tube in opposite directions, or both be opened to any relative degree desired by turning the handle sufficiently for the purpose, and whereby the water admitted to the casing may be subsequently discharged by lifting the tube from the valve seat in the lower end of the casing; substantially as described.

22. A plumbing fixture comprising a casing having connections for hot water and cold water pipes and a connection for a discharge pipe, a longitudinally movable and rotatable tube extending vertically through said casing, the interior of said tube communicating with the discharge pipe and its upper end being provided with an operating handle for lifting and turning the tube, a valve seat in the lower part of the casing with which the lower end of said tube coöperates to control communication between the casing and discharge pipe, inlet valves controlling the admission of water to the casing from the hot water and cold water pipes, and operating means intermediate said valves and tube whereby said valves may be independently opened by turning the tube in opposite directions, and the water admitted to the casing be subsequently discharged by lifting the tube from the valve seat in the lower end of the casing, and means for preventing the tube from being lifted for this purpose while turned from normal position to open either inlet valve; substantially as described.

23. In a plumbing fixture, the combination of the casing 11 having the pipe connections 28 and 29, the pinions 38, 39, journaled in said casing, the valves 32, 33, controlling the admission of water through the pipe connections 28, 29, and having their stems 33, 34, eccentrically connected to the pinions 38, 39, and a gear engageable with either of said pinions independently of the other, for turning the same to open its connected valve; substantially as described.

24. In a plumbing fixture, the combination of the casing 11 having the pipe connections 28 and 29, the pinions 38, 39, journaled in said casing, the valves 32, 33, controlling the admission of water through the

pipe connections 28, 29, and having their stems 33, 34, eccentrically connected to the pinions 38, 39, and a gear engageable with either of said pinions independently of the other and with both of them in unison, for opening the valves independently of each other or at the same time and in the relative degree desired; substantially as described.

25. In a plumbing fixture, the combination of the casing 11 having the pipe connections 28 and 29, the pinions 38, 39, journaled in said casing, the valves 32, 33, controlling the admission of water through the pipe connections 28, 29, and having their stems 33, 34, eccentrically connected to the pinions 38, 39, a gear engageable with either pinion independently of the other, a locking ring or flange turning with the gear, and locking cams 46, 47, carried by the pinions 38, 39, and cooperating with said locking ring to lock each pinion in normal position, with its connected valve closed, except when the gear is turned to a position to engage and turn such pinion; substantially as described.

26. In a plumbing fixture, the combination of the casing 11 having the pipe connections 28, 29, the tubular bearings 42, 43, screwed into the bottom of said casing and projecting upward therein, the pinions 38, 39, having the spindles 40, 41, mounted in said bearings 42, 43, and provided with the upwardly projecting studs 36, 37 eccentric to the axes of the pinions, the valves 32, 33, having their stems 34, 35, provided with eyes engaging the studs 36, 37, and a gear engageable with either pinion independently of the other for opening either valve; substantially as described.

27. In a plumbing fixture, the combination of the casing 11 having the pipe connections 28, 29, the pinions 38, 39, journaled in said casing, the valves 32, 33, having their stems eccentrically connected to said pinions, the rotatable tube 18 extending vertically through the casing and provided with an operating handle at its upper end, and the gear *c* turning with said tube and cooperating with the pinions 38, 39; substantially as described.

28. In a plumbing fixture, the combination of the casing 11 having the pipe connections 28, 29, the pinions 38, 39, journaled in said casing, the valves 32, 33, having their stems eccentrically connected to said pinions, the rotatable tube 18 extended vertically through the casing and provided with an operating handle at its upper end, and the gear *c* and locking ring or flange *b* turning with the tube 18, the former cooperating with the pinions 38, 39 and the latter with locking cams 46, 47, carried by said pinions; substantially as described.

29. In a plumbing fixture, the combina-

tion of the casing 11 having the pipe connections 28, 29, the pinions 38, 39, journaled in said casing, the valves 32, 33, eccentrically connected to said pinions, the longitudinally movable and rotatable tube 18 extending vertically through the casing, the lower end of said tube cooperating with a valve seat to control the discharge from the casing and its upper end provided with an operating handle for lifting and turning it, the sleeve 44 surrounding said tube and having a slot and pin engagement *d e* therewith, and the gear *c* carried by the sleeve 44 and cooperating with the pinions 38, 39; substantially as described.

30. In a plumbing fixture, the combination of the casing 11 having the pipe connections 28, 29, the pinions 38, 39, journaled therein, and carrying the locking cams 46, 47, the valves 32, 33, having their stems eccentrically connected to said pinions, the longitudinally movable and rotatable tube 18 extending vertically through the casing and cooperating with a valve seat at its lower end, and provided with an operating handle at its upper end, and the sleeve 44 surrounding said tube and having the slot and pin engagement *d e* therewith, and provided with the gear *c* and locking ring or flange *b*, the former cooperating with the pinions 38, 39 and the latter with the locking cams 46, 47, carried thereby; substantially as described.

31. A plumbing fixture comprising a casing having connections for hot water and cold water pipes, valves controlling the admission of water through said connections, a single operating handle common to said valves and having operating connection therewith, and means for locking the valves in closed position except when opened by a movement of the handle; substantially as described.

32. A plumbing fixture comprising a casing having connections for hot water and cold water pipes, valves controlling the admission of water through said connections, a single operating handle common to said valves and having gearing connection with said valves for controlling them, and means for locking the valves in closed position except when opened by a movement of the handle; substantially as described.

33. A plumbing fixture comprising a casing having connections for hot water and cold water pipes, valves controlling the admission of water through said connections, a rotatable and longitudinally movable tube in such casing, a sleeve arranged on said tube and having operating connection with said valves, said sleeve being rotated by such tube to operate the valves, and means for discharging the water admitted through the casing by means of the longitudinal movement of said tube; substantially as described.

34. A plumbing fixture comprising a casing having connections for hot water and cold water pipes, valves controlling the admission of water through said connections, mechanism for operating either valve independently, and means under the control of the operating mechanism for locking each valve in closed position except when opened by the operation of said mechanism; substantially as described.

EARL G. WATROUS.

Witnesses:

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