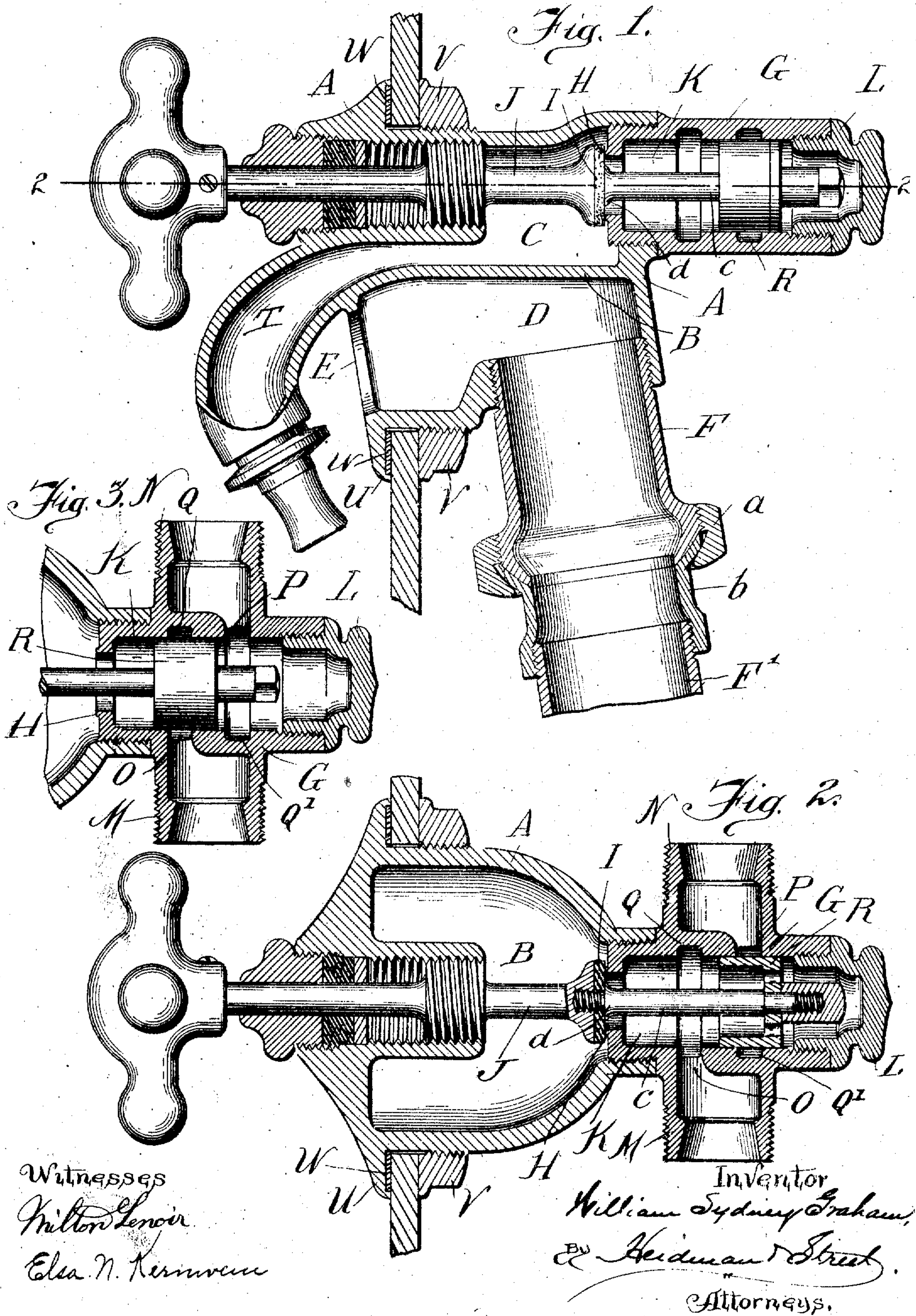


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COMBINATION SUPPLY AND OVERFLOW FIXTURE.  
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# UNITED STATES PATENT OFFICE.

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## COMBINATION SUPPLY AND OVERFLOW FIXTURE.

954,731.

Specification of Letters Patent. Patented Apr. 12, 1910.

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To all whom it may concern:

Be it known that I, WILLIAM SYDNEY GRAHAM, a citizen of the United States, and resident of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Combination Supply and Overflow Fixtures, of which the following is a description, reference being had to the accompanying drawing, which forms a part of my specification.

This invention relates to a novel construction in a fixture comprising the supply and over-flow, the object being to provide a simple, efficient, compact and ornamental device of this character and consists in the features of construction and combinations of parts hereinafter set forth.

In the accompanying drawing, Figure 1 is a central vertical sectional view of my improved fixture, showing the valves and valve stem and a portion of the nozzle in full lines. Fig. 2 is a horizontal sectional view taken on the line 2—2 of Fig. 1. Fig. 3 is a view of the valve-end of Fig. 2, being a similar sectional view, but showing the auxiliary or tempering valve in full and in a different position.

The main object of my invention is to provide a fixture which is very compact and embodies cold water and hot water supply and valves controlling the same and likewise the overflow connection of the bowl or bath-tub with the waste pipe, whereby only one opening in the wall of the bowl or tub is required to effect all of said connections. The said fixture as illustrated comprises a cylindrical casing A preferably substantially semi-spherical at one end and which is divided by a partition wall B into two chambers, the upper chamber C constituting a valve and mixing chamber, and the chamber D constituting an overflow passage. This passage D communicates through opening E in the front wall of the casing A with the receptacle or tub and is also connected with a pipe or tube F, which may be integrally or otherwise secured thereto, connecting with the soil or waste-pipe F'. As the angle of the fixture relative to the waste-pipe F' may vary at times, I prefer to provide the separate pipe F with threads to receive nut a which also takes over the upper end of sleeve b. This sleeve connects with the waste-pipe F'; and it will be seen that the connection between the sleeve b and nut

a, which is in the nature of a ball and socket joint, permits of the sleeve b being set or adjusted at different angles as is readily apparent from Fig. 1.

In the preferred construction illustrated 60 in the drawing, the upper rear end portion of the chamber C is provided with a threaded opening in which the externally threaded end of the member G is received, the latter terminating in a valve-seat H on 65 which the valve I seats. The stem J of the latter has its axis disposed concentric with the said valve-seat H, said stem being moved longitudinally to control the water-supply in the well-known manner illustrated, de- 70 scription being omitted as superfluous. The said member G comprises the middle portion or valve-chamber K terminating at one end in said valve-seat H and preferably closed at its other end by a screw-plug L, 75 so that access to the interior may be had without unscrewing member G from the body of the fixture.

Two oppositely disposed lateral arms M and N are secured to or made integral with 80 member G and are adapted to connect said member G with cold and hot water supply pipes respectively. Said arms M and N communicate with the valve-chamber K through openings O and P which are rela- 85 tively off-set, the inner face of said chamber K being provided with annular grooves Q, Q' in alinement with said openings. A hollow trunk piston valve R is longitudinally movable in said chamber K and is open at 90 both ends, or rather the one end is provided with adequate perforations or openings so that water may flow through the same.

Secured to the valve R and preferably by screwing into it, is a stem c, the other end of 95 which is secured to valve-stem J. This attachment is also preferably made by screwing stem c into stem J, thus permitting of the dismembering of the valves when it is desired. Stem c is provided with a shoulder 100 c whereby the washer I is securely held in place. The length of the body of the valve R accords substantially with the distance from center to center between the annular grooves Q, Q', so that when one of said 105 grooves is fully covered thereby the other is fully open. The length of the stem of said valve R is such that when the valve I is seated the groove Q communicating with the opening O and arm M is fully uncovered 110



thus normally maintaining open communication between the cold water supply and the said chamber K and the contrary with relation to the hot water supply.

5 Upon unseating the valve I and in accordance with the extent of opening movement thereof the valve R gradually reverses its position with relation to the respective grooves Q and Q' thus first admitting cold  
10 water only, then both cold and hot in such relative quantities as may be desired and finally hot water only if desired. Thus, a single valve-stem serves to control the water supply and the handle of this valve-stem is  
15 disposed within the receptacle or bath-tub and within convenient reach of the occupant.

The water enters the chamber C at one end of the latter upon unseating the valve I and when both hot and cold water are ad-  
20 mitted, said chamber serves as a mixing chamber besides constituting a passage for admitted water to the outlet or nozzle T communicating therewith at its other end and at a lower point. The point of connection of the nozzle T with the chamber C is  
25 shown substantially centrally of the casing A. When employing the fixture in connection with a bath-tub, I prefer to have nozzle T curved backward toward the fixture so  
30 that the water will be thrown against the wall of the tub and prevent splashing.

The front wall of the casing A is extended annularly beyond the peripheral wall thereof to provide an annular flange U between  
35 which and a nut V the end wall of the bath-tub or other receptacle is confined, a gasket W being interposed to form a fluid-tight joint; casing A being shown threaded near the flange to receive nut V.

40 Primarily only a single opening in the wall of the bath-tub or other receptacle is required to effect both the service and overflow connections; second, the valve-stem controlling all service connections may be hori-  
45 zontally disposed and within convenient reach, and again, the fixture, though relatively very small and compact affords an ample and very advantageously disposed mixing chamber.

50 The fixture as illustrated, is more especially adapted for use in connection with bath-tubs, but it is apparent that it may be adapted for use in other connections. Furthermore, I have shown and described the  
55 stems of the valves as positively connected, so that the movement of both valves will be positive, and believe this to be the preferred form, but it is apparent that other constructions or arrangements may be employed  
60 without this positive connection, it being essential merely to so construct the valves that the movement of the primary valve will result in a corresponding movement of the auxiliary valve, which may be accomplished  
65 in different ways. It will be seen in the

drawing, that the fixture is so constructed that easy access may be had to all parts thereof.

Having thus described my invention, what I wish to secure by Letters Patent, is:— 70

1. A combination supply and overflow fixture comprising a casing, a partition whereby the casing-interior is divided into two chambers, one of said chambers communicating with a hot and cold water-sup- 75 ply and constituting an inlet-passage for either or both of said water supplies, the other chamber communicating with the casing-exterior and with a waste-pipe and constituting an overflow passage, and a valve 80 located in said first-mentioned chamber whereby both of the water-supplies are controlled.

2. A combination supply and overflow fixture consisting of a casing provided with 85 two chambers which communicate with the casing-exterior, one chamber being provided with a hot and cold water-supply, mechanism located in said chamber whereby the water-supply may be controlled and its 90 nature regulated, the other chamber having communication with a waste-pipe, and means whereby an adjustable connection with the waste-pipe may be made.

3. A combination supply and overflow fix- 95 ture consisting of a casing provided with several chambers which communicate with the casing-exterior, a member connecting with one of said chambers, said member being provided with a hot and cold water- 100 supply, mechanism located in said chamber and taking into the member whereby the supply of hot and cold water entering said member may be regulated and its passage into said chamber controlled, the other 105 chamber constituting an overflow passage, and mechanism whereby an adjustable connection with a waste-pipe may be effected.

4. A combination supply and overflow fixture comprising a casing, a partition wall 110 dividing said casing into two chambers, one of said chambers being connected with the waste pipe and communicating with the casing-exterior, a member connected with the other chamber at one end of the latter and 115 terminating in a valve seat disposed in said chamber, said chamber also being provided with an outlet at its other end, said member being connected with the hot and cold water service pipes, a valve movable in said 120 chamber and seating on said valve-seat, an auxiliary valve in said member controlling the hot and cold water supply, and means whereby said valves are actuated and the water-supply regulated. 125

5. A combination supply and overflow fixture comprising a casing, a partition wall dividing said casing into two chambers, one of said chambers adapted to be connected 130 with the waste-pipe and communicating



with the casing-exterior, a member connected with the other chamber and terminating at one end in a valve-seat disposed therein, said chamber being also provided with an outlet at its other end, a valve movable in said chamber and seating on said valve-seat, the stem of said valve projecting from said casing above the said outlet, said member being connected with the hot and cold water service pipes, an auxiliary valve movable in said member and controlling both of said connections, the relation between the two valves being such that the movement of the one controls the movement of the other.

6. A combination supply and over-flow fixture comprising a cylindrical horizontally disposed casing, a longitudinally disposed partition wall dividing said casing into two chambers, one of said chambers constituting an inlet passage for either hot or cold water or both and terminating in a rearwardly curved nozzle and the other chamber constituting an overflow passage and being connected with the waste pipe, a valve in said inlet chamber for controlling both water-supplies, and a horizontally disposed valve-stem for controlling the valve.

7. A combination supply and over-flow fixture comprising a cylindrical casing adapted to be inserted in an opening in the end wall of the receptacle or bath-tub and there secured, a longitudinally disposed partition wall dividing said casing into two chambers, one of said chambers being connected with the waste pipe and communicating with the bath-tub, the other chamber being connected with the water-supply at one end and equipped at its other end with a nozzle, a valve movable in said chamber and controlling the water-supply, and a horizontally disposed stem actuating said valve.

8. A combination supply and over-flow fixture comprising a cylindrical casing adapted to be inserted in an opening in the end wall of a bath-tub and there secured, a longitudinally disposed partition wall dividing said casing into two chambers, one of said chambers being connected with the waste-pipe and communicating with the bath-tub or receptacle, a member connected with the other chamber at one end of the latter and terminating in a valve-seat disposed in said chamber, a nozzle at the other end of said chamber, said member being connected between its ends with the hot and cold water service pipes, a valve movable in said chamber and seating on said valve-seat, an auxiliary valve in said member controlling the hot and cold water supply, and a horizontally disposed stem actuating said valves.

9. A combination supply and over-flow fixture comprising a cylindrical casing adapted to be inserted in an opening in the

wall of the receptacle or bath-tub and secured thereto, a longitudinally disposed partition wall dividing said casing into two chambers, one of said chambers being connected with the waste-pipe and communicating with the bath-tub or receptacle, a nozzle disposed centrally of said casing and communicating with the other chamber, a member connected with said last-named chamber and terminating at one end in a valve-seat disposed therein, said member being connected between its ends with hot and cold water service pipes, a valve movable in said chamber and seating on said valve-seat, an auxiliary valve movable in said member and controlling both of said connections with the service pipes, and means whereby said valves are actuated.

10. A combination supply and over-flow fixture comprising a casing, a partition wall whereby the casing-interior is divided into two chambers, one of said chambers communicating with a water-supply and having an outlet for the passage of the water therethrough, the other chamber communicating with the casing-exterior and also adapted to have communication with a waste-pipe, mechanism whereby an adjustable connection between said chamber and the waste-pipe may be effected, and a valve located in the first-mentioned chamber for controlling the water-supply.

11. In a combination supply and over-flow fixture the combination of a casing having chambers which communicate with the casing-exterior, one of said chambers having communication with a water-supply, a valve whereby said water-supply may be controlled, the other chamber being adapted to have communication with a waste-pipe, with mechanism whereby an adjustable connection between said chamber and the waste-pipe may be effected.

12. A combination supply and over-flow fixture comprising a casing provided with an annular flange on its outer surface, said flange being so formed as to provide an annular depression to receive a gasket, said casing having two chambers one above the other which communicate with the exterior, the upper one of said chambers having communication with a hot and cold water-supply, a valve whereby both of said water-supplies may be controlled, the other or lower chamber having communication with a waste-pipe, and mechanism adapted to take about the body-portion of said casing adjacent said flange to secure it in place and bring the annular flange and gasket against the wall of the receptacle to effect a water-tight joint.

13. A combination supply and over-flow fixture comprising a casing having two chambers which communicate with the casing-exterior, one of said chambers having



communication with a hot and cold water-supply, a valve whereby said water-supply may be controlled and the flow of hot, cold or tempered water regulated, the other chamber being provided with a ball and socket connection for effecting communication with a waste-pipe.

14. A combination supply and overflow fixture consisting of a casing provided with several chambers which communicate with the casing-exterior, a member connecting with one of said chambers and provided with a hot and cold water supply, mechanism located in said chamber and taking into the member whereby the supply of hot and cold water entering said member may be regulated and its passage into said chamber controlled, the other chamber constituting an overflow passage.

15. A combination supply and overflow fixture comprising a casing divided into two chambers, one chamber being connected with the waste-pipe and communicating with the casing-exterior, a member connecting with the other or mixing chamber at one end and terminating in a valve-seat disposed in said chamber, said member being provided with arms adapted to connect with cold and hot water-supply pipes respectively, the points of communication between the arms and the member being relatively off-set, a valve located in the mixing-chamber and adapted to seat itself on the valve-seat therein, an auxiliary valve in said member and arranged to control the off-set points of communication between the member and its arms, and means whereby said valves are actuated and the water-supply regulated.

16. A combination supply and overflow fixture comprising a casing divided into two chambers, one of which is connected with a waste-pipe and communicates with the casing-exterior as an overflow chamber, the second chamber provided with an opening at its one end communicating with the receptacle to which the fixture is secured, a member provided with laterally extending tubes or arms and communicating with the opposite end of said second chamber, said arms adapted to connect with hot and cold water-supply pipes and terminating in relatively off-set ports communicating with the member-interior, and means longitudinally movable in said second chamber and the member whereby the water-supply and its nature is controlled.

17. A combination supply and overflow fixture comprising a casing divided into chambers which communicate with the casing-exterior, one of the chambers acting as an overflow chamber being adapted to connect with a waste-pipe, an auxiliary chamber communicating with the second chamber, said auxiliary chamber being provided with relatively off-set openings communicating

with hot and cold water-supply pipes respectively, and means movable in said second and auxiliary chambers whereby the points of communication between the auxiliary and second chambers and the supply pipes and auxiliary chamber are affected.

18. A combination supply and overflow fixture comprising a casing divided into chambers which communicate with the exterior, one of said chambers acting as an overflow and adapted to connect with a waste-pipe, an auxiliary chamber communicating with the other or second chamber, said auxiliary chamber being provided with ports communicating with hot and cold water-supply pipes respectively, a hollow piston-valve movable in said auxiliary chamber adjacent said ports and open at both ends, a valve located in the second chamber and adapted to regulate the communication between said chamber and the auxiliary chamber, said valves being operatively connected, and means whereby said valves are actuated and the water-supply controlled.

19. A combination supply and overflow fixture comprising a casing divided into two chambers which communicate with the exterior, the one acting as an overflow and connected at its opposite end with a waste-pipe, while the other is a supply or mixing chamber, an auxiliary chamber communicating with the supply chamber and provided with relatively off-set ports communicating with hot and cold water-supply pipes respectively, a hollow valve open at both ends, adapted to reciprocate in said auxiliary chamber and affect either one or both of said ports, a valve located in the mixing chamber and operatively connected with the hollow valve, said last mentioned valve being adapted to affect the communication between the auxiliary and mixing chambers.

20. A combination supply and overflow fixture comprising a casing divided into two chambers which communicate with the exterior, the one acting as an overflow and connecting with a waste-pipe, while the other is a supply or mixing chamber, a hollow member connected with one end of the mixing chamber where it terminates in a valve-seat, means removably connected with the other end of said member for sealing the latter, said member being provided with laterally extending arms or conduits which communicate with the member-interior at relatively off-set points, and means reciprocally mounted in said mixing chamber and taking into the member whereby the communication between the chamber and member and the member with its arms or conduits is affected.

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