May 29, 1934. C. C. CAMPUS 1,960,839

BIDET

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Fig. 1.

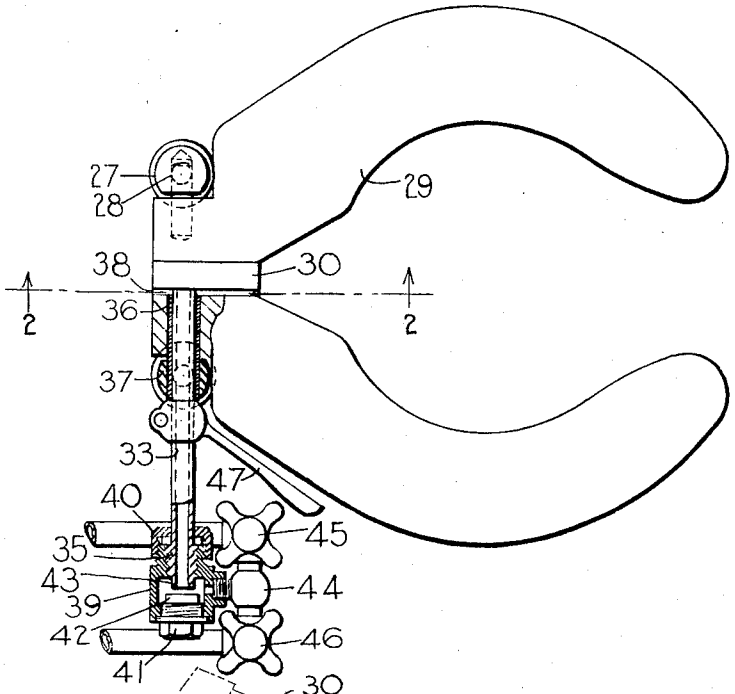


Fig. 2.

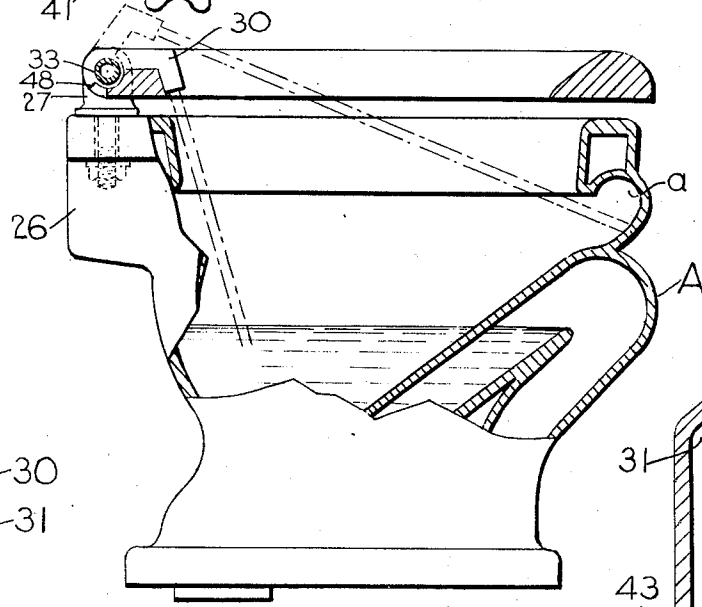


Fig. 3.

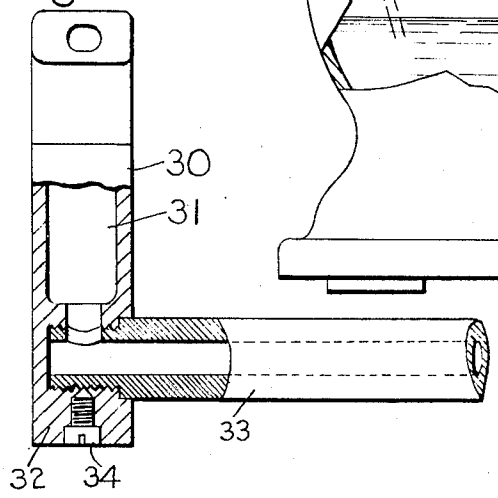
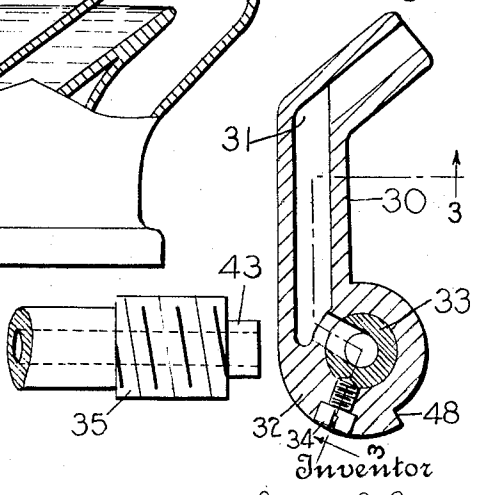


Fig. 4.



Inventor
Cesare C. Campus

By Attorney
Westall and Walker

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Fig. 5.

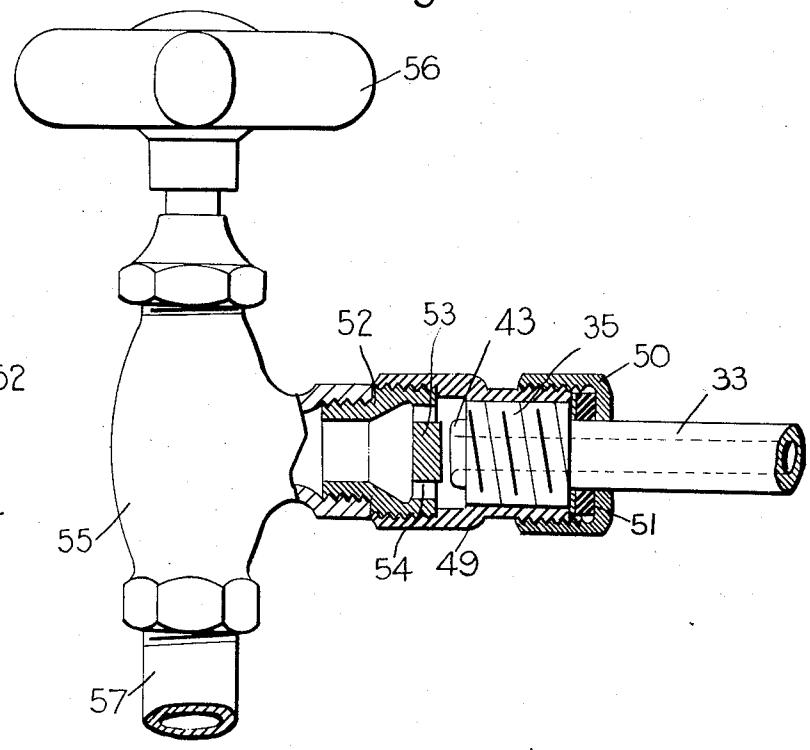
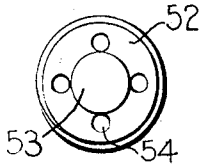


Fig. 6.



INVENTOR.
Cesare C. Campus

BY Westall and Wallace

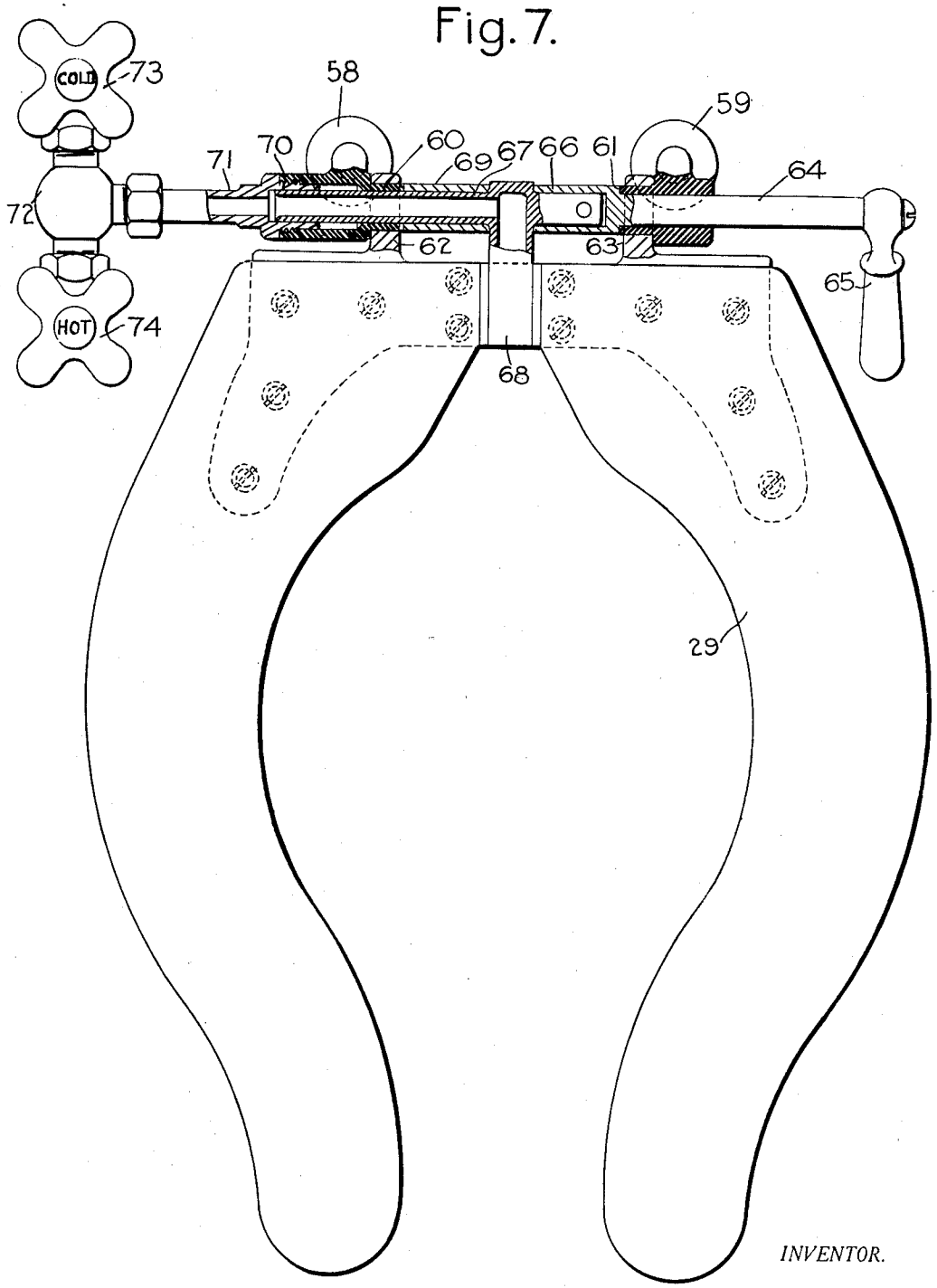
ATTORNEY.

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Fig. 7.



INVENTOR.

Cesare C. Campus

BY Westall and Wallace

ATTORNEY.

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Fig. 8.

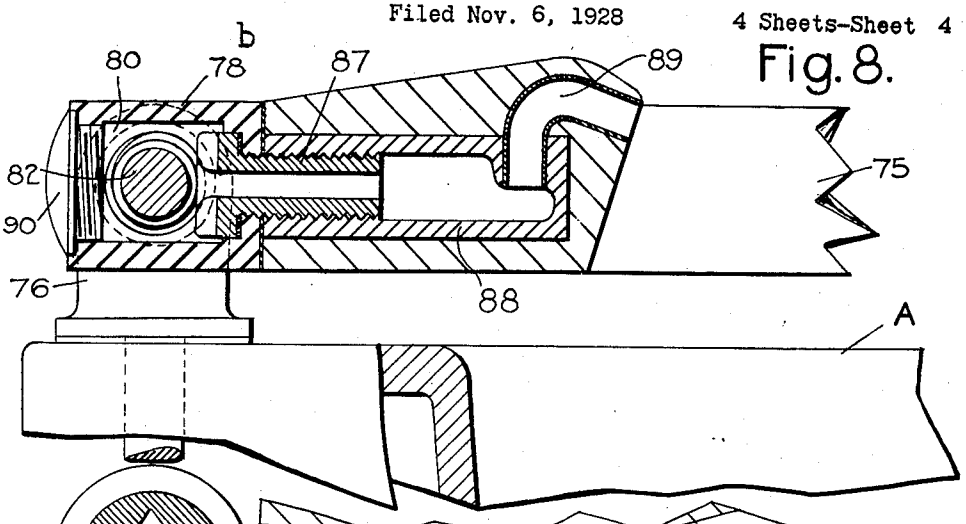


Fig. 9.

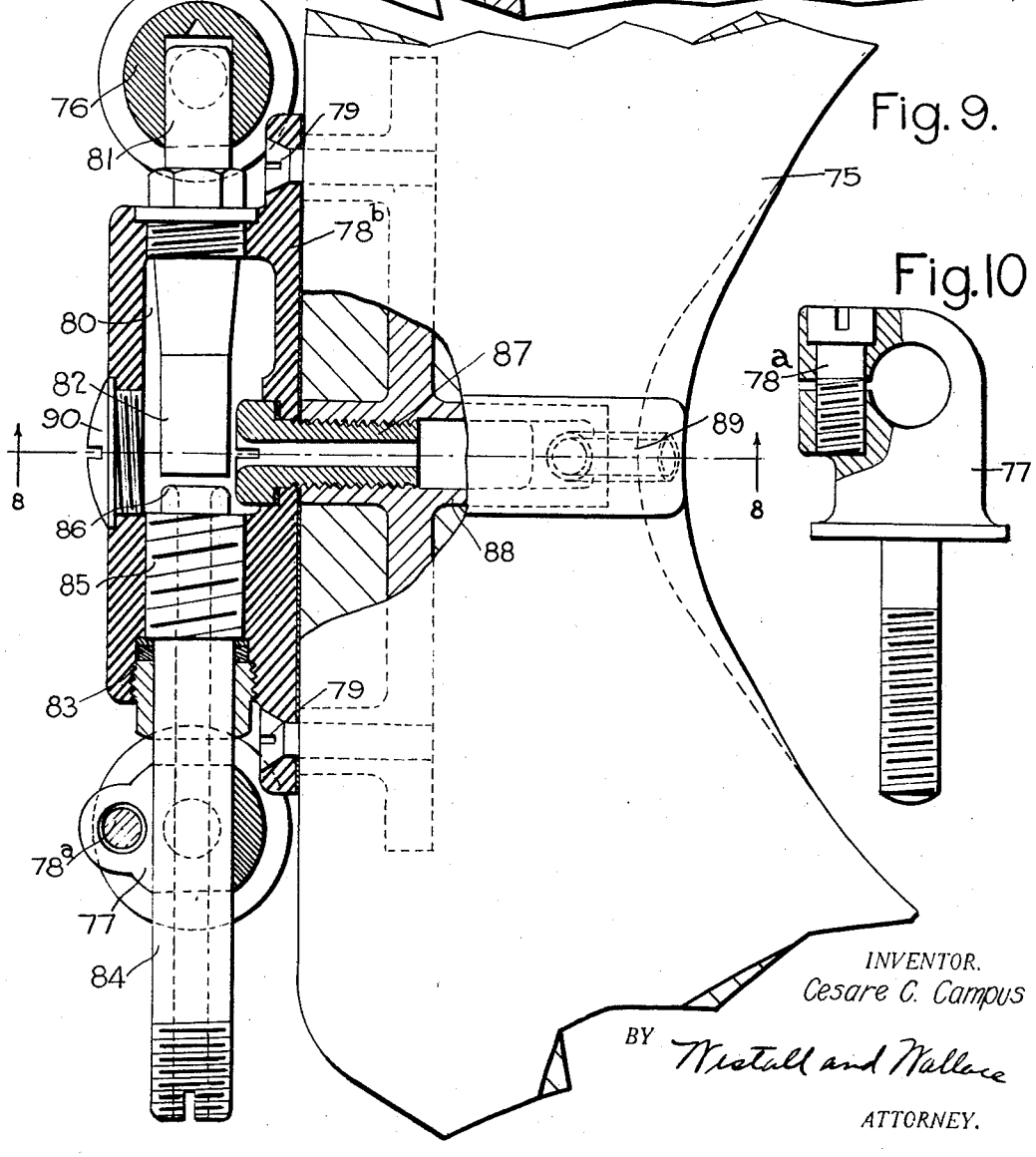


Fig. 10

INVENTOR.
Cesare C. Campus
BY Mistall and Wallace
ATTORNEY.

Patented May 29, 1934 1,960,839

UNITED STATES PATENT OFFICE

1,960,839

BIDET

Cesare C. Campus, Santa Monica, Calif.

Application November 6, 1928, Serial No. 317,544

13 Claims. (Cl. 4—7)

This invention relates to a lavatory attachment for water closet bowls and the like and pertains more particularly to a bidet device adapted to be connected to the type of closet bowls now in current use. The present invention contemplates a bidet fixture supported by the closet seat structure.

Heretofore, it has been the practice to mount bidet fixtures in conjunction with bowls so as to direct a stream of water in an upward direction. The disadvantages of such devices are obvious. When the seat is not being occupied by a person, and the jet supply line is open, water will shoot out of the bowl with resultant flooding of the lavatory floor and the wetting of persons or articles near the bowl. In the event that the attachment is fixed directly under the face of the seat, and the seat is raised, the bidet supply line being open, the nozzle points upward and the jet will project a stream to the ceiling. In the use of cold water only in a bidet nozzle the user may be subjected to a nervous shock and in the use of hot water only there is always a liability of scalding the body. Therefore, to obtain the proper temperature it is desirable to mix the hot and cold water. Where a mixing valve is used, adjustment must be made until water of the right temperature is obtained. During this period water must be wasted until the desired temperature is obtained. In the case of a thermostatic valve, there is generally a long column of cold water to be discharged before water at the right temperature will reach the bidet nozzle. The present invention contemplates a fixture which without any auxiliary apparatus will permit the water wasted during the temperature adjustment to run directly into the bowl. It is desirable to provide a bidet device which will become automatically inoperative when the seat is raised or not in position for use.

The present invention has for its objects the provision of any or all of the following features in conjunction with a water closet bowl; a bidet fixture mounted so as to project water into the bowl particularly when the fixture is not in position for use; a bidet fixture associated with the seat structure; a bidet fixture mounted on the seat and above the undersurface thereof; a bidet fixture having a nozzle swingable in a vertical direction; a bidet fixture having a nozzle swingable with the seat; a control for the bidet fixture water supply which is actuated by swinging of the seat; and a manually operable valve to be used in cooperation with the control.

These objects together with other objects and corresponding accomplishments are obtained by means of the embodiments of my invention illustrated in the accompanying drawings, in which:—

Fig. 1 is a plan view of a seat having a bidet attachment secured thereto, the position of the nozzle being manually controllable and there being provided a shut-off operable by swinging of the seat, part of the structure being shown in cross-section; Fig. 2 is a side elevation of the bowl and seat together with the bidet attachment shown in Fig. 1, parts being shown in section as seen on the line 2—2 of Fig. 1; Fig. 3 is a detail view partly in section of the conduit rod and nozzle used with the structure shown in Figs. 1 and 2 the section being taken on line 3—3 of Fig. 4; Fig. 4 is an axial section through the nozzle shown in Fig. 3; Fig. 5 is a plan view of a detail showing an automatic shut-off operable by the seat and which may be substituted for the shut-off shown in Figs. 1 to 4; Fig. 6 is a face view of the valve seat employed in the structure shown in Fig. 5: Fig. 7 is a plan view of a seat and another form of bidet attachment having a swinging nozzle, parts being shown in section: Fig. 8 is a sectional elevation taken on the line 8—8 of Fig. 9 through a fragment of a bowl and seat showing a steady type of nozzle and an automatic shut-off; Fig. 9 is a plan view of the structure shown in Fig. 8, the bidet structure being shown in section; and Fig. 10 is an elevation of a clamp employed with the structure shown in Figs. 8 and 9.

Referring more particularly to the species shown in Figs. 1 to 4 inclusive, A indicates a water closet bowl in general of a conventional type having a rear flange extension 26 adapted for fitting a service pipe thereto and for attachment of a seat. Secured to the extension by a threaded shank and bolt is a ball hinge member 27 having pivotally mounted therein a trunnion 28 affixed to the seat 29. The rear of the seat is recessed below the upper surface to accommodate a bidet nozzle 30, best shown in Figs. 3 and 4. The nozzle 30 is angled and is provided with a jet passage 31, there being a head 32 at the other end having a laterally extending threaded opening communicating with the passageway 31. This opening is internally threaded to receive a conduit bar 33 having a lateral port for communication of the bore of the conduit with the passageway 31. A set screw 34 serves to fix the nozzle to the conduit bar in proper angular relation. At the end of the conduit bar opposite to the nozzle is an enlargement 35 having a thread

of a properly designed pitch as will be understood as the description proceeds. A sleeve 36 is mounted in a bore in the seat and is pivotally disposed in a ring hinge member 37 secured to extension 26. The seat is thus hingedly supported by the sleeve 36 and the trunnion 28 working in their respective hinge members. Journalled in the sleeve 36 is the conduit bar 33, the nozzle 30 being disposed in the recess in the seat and having a slight lateral clearance 38. Mounted in any suitable manner to one side of the seat is a valve casing 39 serving as a mixing valve having a tapped opening to engage the threaded portion 35 of the conduit bar, a bonnet 40 being provided. A closure plug 41 is threaded into the casing in alinement with the conduit bar and carries a tap seat 42 for cooperation with a valve seat end 43 on the conduit bar. A T fitting 44 is connected to the side of the valve casing, the other branches thereof being controlled by manually operable valves 45 and 46. One of these valves may control a hot water line and the other a cold water line. Fixed to the conduit bar is a handle 47, whereby the conduit bar may be swung. On the head of the nozzle is a shoulder 48 for coaction with a shoulder on the seat to limit the backward swinging movement of the nozzle in relation to the seat.

With the nozzle in its lower position as shown in full lines in Fig. 2, the stream issuing therefrom will be directed almost vertically downward into the bowl preferably at the rear thereof. In this position the stream cannot be used for irrigation purposes. If the valves 45 and 46 are open, the temperature of the water entering the nozzle may be determined by feeling the exposed portion of the conduit bar, it being preferable that this bar be of pressed metal with a thin wall to best conduct the heat. After the correct and comfortable temperature has been reached, the handle 47 is grasped and pulled upwardly so as to position the nozzle as shown in dotted lines in Fig. 2. The jet issuing from the nozzle is then so projected as to be used for irrigation purposes and if the seat is unoccupied will strike the bowl at pocket *a*. Swinging of the conduit bar will cause travel of the valve end 43 toward the tap seat 42, but the pitch is so adjusted that the valve end will remain clear of the seat permitting the passage of water to the nozzle. If the closet seat is unoccupied and is in raised position and either or both valves 45 and 46 should be opened while in such position the valve end 43 being tightly seated upon the tap seat 42 closes the supply to the nozzle. If such means were not provided, and the nozzle were in its position for use, a jet of water would be projected upwardly and beyond the bowl. It will be noted that the clearance 38 permits movement of the nozzle so as to accommodate it to the longitudinal movement of the conduit bar.

Referring more particularly to Figs. 5 and 6 a type of shut-off is shown which is especially adapted for a single valve to be used in cooperation with the type of structure shown in Figs. 1 to 4 inclusive and as a substitute for the shut-off valve. The same conduit bar 33 is used having a threaded extension 35 and a valve end 43. The valve casing comprises a tubular member 49 externally threaded at one end to receive a bonnet 50, a washer 51 being mounted between the bonnet and the end of the tubular member. At the other end the tubular member is internally threaded to receive a tap seat member 52 having a tap seat 53 at the center thereof raised to cooperate with the valve seat end 43. Perforations 54 open alongside of the tap seat and communicate with the bore of the tap seat member. The tap seat member is reduced in diameter and threaded to receive a valve casing 55 provided with a manually operable valve 56 to control a service line 57. The operation of the structure is obvious.

In Fig. 7 another species of bidet fixture is shown wherein the seat 29 has a recess at the rear for the accommodation of a bidet nozzle. Ring hinge members 58 and 59 provide for mounting the seat and associated parts upon the bowl. Collar extensions 60 and 61 accommodate ring hinge members 62 and 63 secured to the seat. The bar 64 is journalled in ring member 59 and has a handle 65 for operation. At the end opposite the handle, the bar is provided with a socket 66 and pinned therein is one end of a nozzle bar. The nozzle bar marked 67 has a passageway opening to the bore of a swingable nozzle 68. By turning the handle 65, the nozzle 68 may be swung in the manner of the nozzle shown in Figs. 1 and 2. In order not to detract from the appearance, of the structure, a sleeve 69 is placed over the hollow portion of the nozzle bar. Hinge ring member 58 is constructed at the outer side to provide a stuffing box 70, a nipple 71 serving as a gland. Nipple 71 is connected to a T fitting 72, the other branches of which are connected to valves 73 and 74 which may lead to hot and cold water supply lines.

In the structure last described there is no automatic shut-off, the nozzle being swung by the handle 65 into active or inactive position. It will be noted that in both the species above described, the weight of the seat is carried independent of the bearings for swinging the nozzle so that no cramping of the nozzle swinging elements occurs.

Referring to Figs. 8, 9 and 10 a steady type nozzle is shown attached to a seat 75 and provided with an automatic shut-off. A ball hinge member at one side is indicated by 76 and may be of conventional type. A split ring clamp member 77 is attached to the bowl having a screw 78*a* coupling the split portion of the hinge together and serving for adjustment. A bidet casing 78*b* is secured to the rear edge of the seat by means of screws 79. At the ends of the chamber 80 formed in casing 78*b* are openings, one of which is internally threaded to receive a trunnion member 81 journalled in the ball hinge member 76 and having an extension 82 serving as a tap seat. The chamber is provided at the opposite end with a stuffing boss 83 through which passes a conduit bar 84 provided with an enlarged portion 85 having a thread to engage a corresponding thread within the chamber of the casing. At the inner end of the conduit bar is a valve end 86 to coact with the tap seat 82. The conduit bar 84 is clamped in the member 77 to hold it fixed in position. Swinging of the seat will cause the casing to travel with the valve end and tap seat travelling to and from each other so as to close the supply line when the seat is raised or in inactive position and to open the supply line when the seat is in position for use. The lateral opening to the chamber of the casing has received therein a bushing 87 over which is mounted the inlet end of a nozzle body 88. The nozzle body is embedded in the rear of the seat and has a jet nozzle 89 extending therefrom and through the wall of the seat so as to project a stream of water downwardly when the seat is in active position.

For the convenience of assembly, a closure plug 90 is threaded into an opening in the casing in registration with the bushing 87.

It is obvious that by lifting the seat to its non-use position, the supply of water will be shut off from the nozzle. When the seat is down or in its position for use, water will be supplied to the nozzle when the bidet valve attached to the bidet end of tubular member 84 is operated.

It will be understood that in the types of automatic shut-off valves shown in Figs. 1 to 5 inclusive 8 and 9, the closet seats will ordinarily be moved through an angle greater than 90°, in order to bring the seat's center of gravity over its pivotal axis and the pitches of the threads on the conduit rod will be arranged accordingly. The bowls may be constructed so that there is an inner overhanging portion to prevent splashing of the jet when striking the side of the bowl. It will also be noted that in the species shown in Figs. 8 to 10, the operating structure is between the hinges thereby aiding in alinement and simplifying installation. Covers for the seats may be attached by well known mechanical expedients.

What I claim is:—

1. The combination with a closet bowl and a movable seat therefor, of a bidet fixture associated with said seat above the under surface thereof and having a nozzle adapted to discharge a stream in a downward direction relatively to the said bowl when the said seat is in its position for use, and means operable by the movement of the seat from its position for use for shutting off the water supply to the said bidet fixture.

2. The combination with a closet bowl and a seat therefor adapted to be moved to and from positions for use and non-use, of a bidet nozzle associated with the seat above the under surface thereof and adapted when the seat is in its normal position for use to direct a stream at a downward inclination into the bowl, and means for shutting off the water supply when the seat is moved from its position for use.

3. The combination with a closet bowl and a seat therefor, of a bidet nozzle associated with the seat, the said nozzle being shiftable to and from positions for use and non-use when the seat is in position for use, the said nozzle when in position for non-use being adapted to direct a stream downwardly toward the back of the bowl and when in position for use adapted to direct a stream downwardly toward the front of the bowl.

4. The combination with a closet bowl and a seat therefor, of a bidet nozzle associated with the seat, and means for shifting the nozzle to and from positions for use and non-use, the said nozzle when in position for use being adapted to direct a stream downwardly toward the front of the bowl and when in position for non-use being adapted to direct a stream downwardly toward the rear of the bowl.

5. The combination with a closet bowl and a seat therefor adapted to be moved to and from positions for use and non-use, of a bidet nozzle associated with the seat and shiftable to and from positions for use and non-use, the said nozzle when in position for non-use being adapted to direct a stream downwardly toward the rear of the bowl and when in position for use to direct a stream downwardly toward the front of the bowl, and means operative upon raising the said seat for shutting off the water supply to the nozzle.

6. The combination with a closet bowl and a seat therefor adapted to be moved to and from positions for use and non-use, of a bidet nozzle associated with the seat, means for shifting the bidet nozzle to and from positions for use and non-use, the said nozzle being adapted when in position for non-use to direct a stream downwardly toward the rear of the bowl and when in position for use to direct a stream downwardly toward the front of the bowl, and means operative in moving the seat from its position for use to its position for non-use for shutting off the water supply to the said nozzle.

7. The combination with a closet bowl and a seat therefor, of a bidet nozzle associated with the seat above the under surface thereof, the said nozzle being shiftable to and from positions for use and non-use and adapted when in position for non-use to direct a stream downwardly toward the rear of the bowl and when in position for use to direct a stream downwardly toward the front of the bowl.

8. The combination with a closet bowl and a seat therefor, of a bidet nozzle associated with the seat above the under surface thereof, and means for moving the bidet nozzle to and from positions for use and non-use, the said bidet nozzle being adapted when in position for non-use to direct a stream downwardly toward the rear of the bowl and when in position for use to direct a stream downwardly toward the front of the bowl.

9. The combination with a closet bowl and a seat therefor adapted to be moved to and from positions for use and non-use, of a bidet nozzle associated with the seat above the under surface thereof, means for shifting the bidet nozzle to and from positions for use and non-use, the said bidet nozzle when in position for non-use being adapted to direct a stream downwardly toward the rear of the bowl and when in position for use to direct a stream downwardly toward the front of the bowl, and means operative upon moving the seat from its position for use to its position for non-use for shutting off the supply to the bidet nozzle.

10. The combination with a closet bowl and a seat therefor, of a supply conduit, a nozzle associated with the seat above the under surface thereof, the said nozzle being adapted to direct a stream downwardly into the said bowl, a shut-off valve, and means for hingedly connecting the seat on the supply conduit to close the shut-off valve by raising the same.

11. The combination with a closet bowl and a seat therefor adapted to be moved to and from positions for use and non-use, of a supply conduit, a bidet nozzle associated with the supply conduit and also with the said seat above the under surface thereof, a shut-off valve, means for shifting the bidet nozzle to and from positions for use and non-use, in the former of which the bidet nozzle directs a stream toward the front of the bowl and in the latter of which the bidet nozzle directs a stream downwardly toward the rear of the bowl, and means operable in raising the seat to close the said shut-off valve.

12. The combination with a closet bowl and a seat therefor adapted to be moved to and from positions for use and non-use, of a supply conduit, a sleeve thereon, the said seat being pivotally mounted on the said sleeve, a bidet nozzle connected to the said supply conduit and asso-

ciated with the said seat above the under surface thereof, means connected to the supply conduit for shifting the said bidet nozzle to and from positions for use and non-use, the bidet nozzle when in position for non-use being adapted to direct a stream downwardly toward the rear of the bowl and when in position for use to direct a stream downwardly toward the front of the bowl, a shut-off valve at one end of the said supply conduit, and means for shifting the supply conduit and bidet nozzle when the supply conduit is turned by the means for shifting the bidet nozzle and also when turned by raising the seat to close the said shut-off valve when the seat is in its position for non-use.

13. The combination with a closet bowl and a seat therefor, of a bidet nozzle formed in and carried by the rear part of the seat with its orifice so situated as to discharge into the opening of the seat.

CESARE C. CAMPUS.