

May 18, 1937.

I. SALVONI

2,080,438

BIDET

Filed June 17, 1936

2 Sheets-Sheet 1

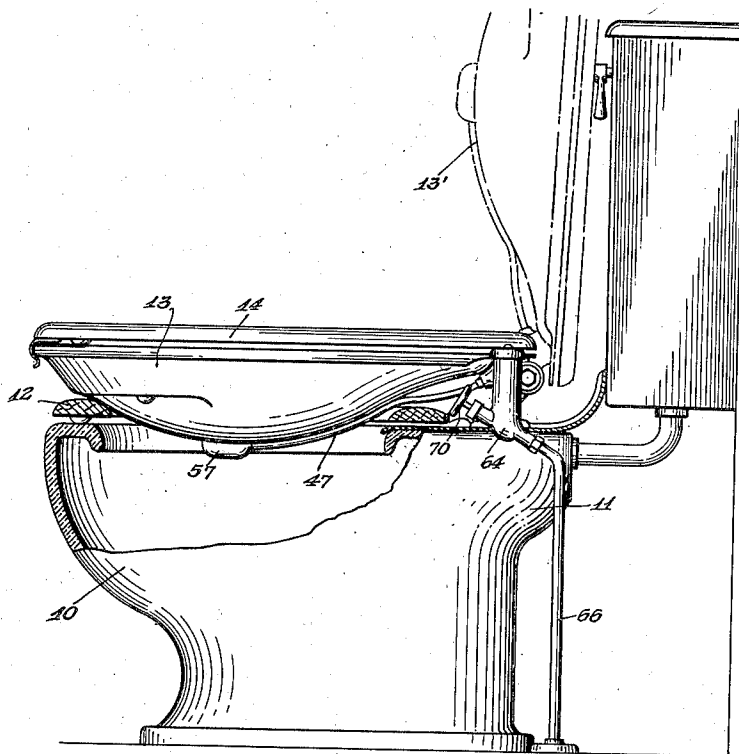


Fig. 1

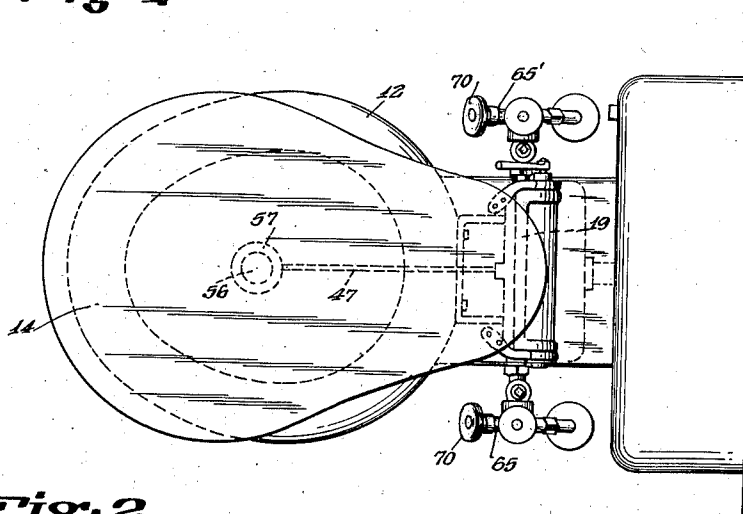


Fig. 2

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Fig: 4

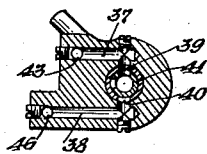
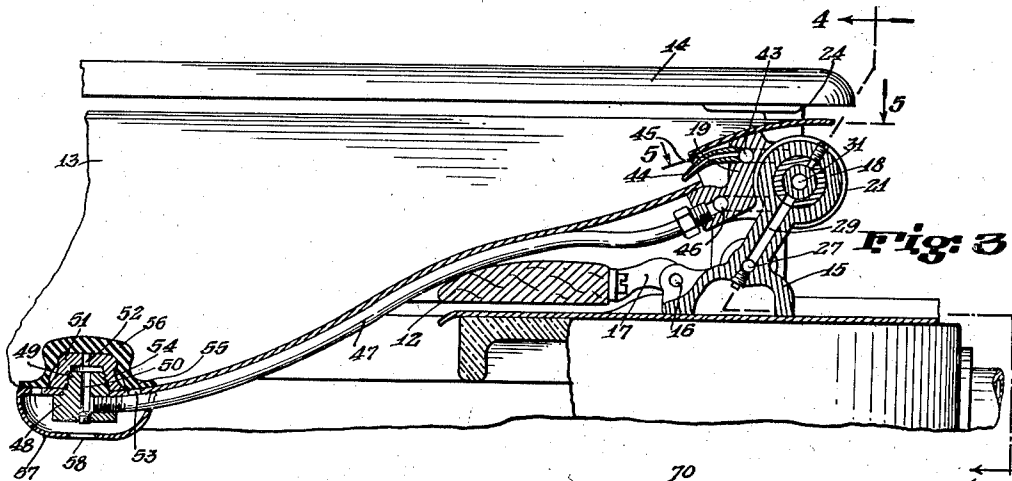
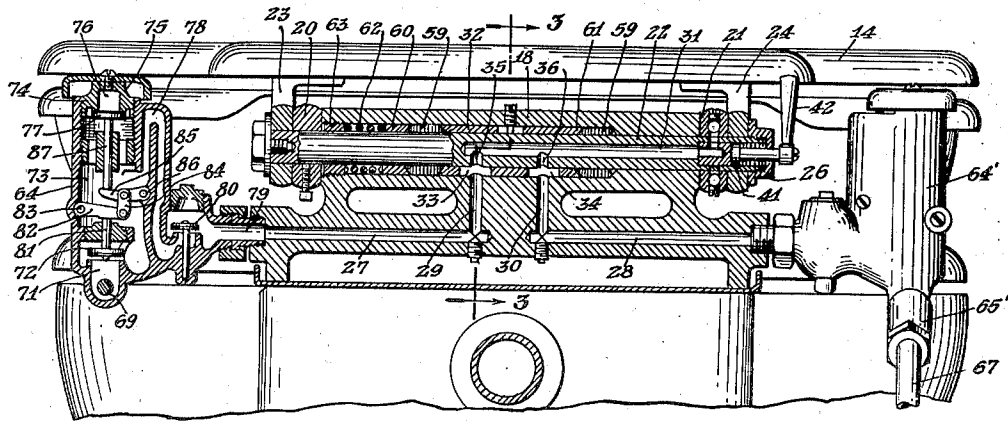


Fig: 6

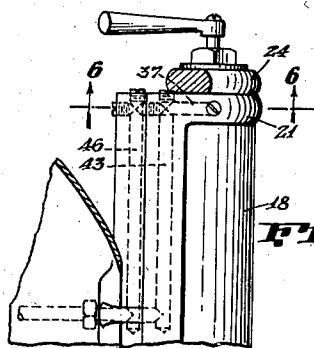


Fig: 5

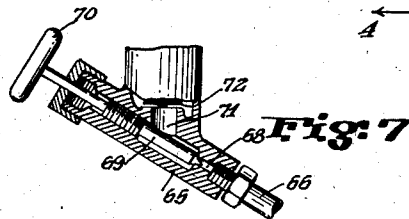


Fig: 7

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UNITED STATES PATENT OFFICE

2,080,438

BIDET

Ippolito Salvoni, New York, N. Y., assignor of
forty-four per cent to Riccardo Salmona, New
York, N. Y., and twelve per cent to Edward Q.
Jackson, Jackson Heights, N. Y.

Application June 17, 1936, Serial No. 85,649

17 Claims. (Cl. 4—6)

This invention relates to sanitary appliances and more particularly refers to improvements in bidets of the type adapted for attachment and use directly on top of a water closet bowl or seat.

In a patent entitled "Combined toilet and bidet", issued to me on April 7, 1936, No. 2,036,984, I have described and claimed a bidet adapted for use in combination with an ordinary water closet, the principal characteristic of said bidet being that it is so designed that it affords ample room for the performance of the service for which it is intended. To this end the bidet is formed with a front portion extending beyond the closet bowl and is pivotally mounted coaxially with the seat, so that said bidet and seat can be raised or lowered into position without interfering with each other.

As explained in the description forming part of the above mentioned patent, a bidet so designed that it will merely extend over or project through the seat or the closet bowl itself without longitudinally extending beyond the confines of said seat or bowl, is ill adapted for use inasmuch as it does not provide sufficient room for the insertion of the hand at the front when the user is sitting on the bidet. It is, therefore, highly desirable that the bidet be sufficiently extended in a longitudinal sense if an entirely practical device is to be produced.

On the other hand I have found that a bidet extending frontwardly of the closet bowl may in some instances be objectionable or inapplicable. Such a bidet naturally makes it necessary for the user to sit with his back to the wall and since the valve or valves controlling the water supply are generally located at the rear, their operation may prove somewhat difficult for persons afflicted with lumbago, rheumatism or other ailments. Furthermore, in some cases there may be too small a space between the front of the bowl and a wall facing it so that the addition of a bidet projecting frontwardly of the bowl would interfere with or prevent the normal use of the closet. In some instances, a bidet projecting beyond the front of the bowl may be objectionable on purely aesthetic grounds, since some persons with fastidious tastes have expressed a dislike for the appearance resulting from the addition of such a bidet on a closet bowl in a well-appointed bathroom.

Due to these and other consideration, I have devised a bidet so constructed that, while it extends at the front substantially only as far as the front of the bowl, it extends at the rear well

beyond the rear edge of the bowl so as to provide a length sufficient for practical and comfortable use. In its preferred form the bidet forming the subject of the present invention has its narrower or nose portion at the rear, so that the user faces the wall when sitting on the bidet and can, therefore, conveniently reach the valve or valves controlling the water supply.

The primary object of the present invention is, therefore, to provide a bidet adapted for use as an attachment for a water closet, said bidet extending at the front substantially as far as the water closet itself and extending at the rear beyond the edge of the bowl, so as to provide a construction combining an attractive appearance with the possibility of practical use.

Another object is to provide a bidet of the character specified, having its narrower portion at the rear so that the user can face the wall while sitting on the bidet, in a convenient position for the operation of the valve or valves controlling the water supply.

A further object is to provide a novel and improved combination of water closet and bidet, in which the bidet is pivotally mounted on the closet bowl at a point rearwardly spaced from the hinged support of the seat so as to provide a convenient construction whereby the basin portion proper of the bidet can be made to extend rearwardly of the rear edge of the bowl itself.

Other objects and advantages of the present invention will more fully appear as the description proceeds and will be set forth and claimed in the appended claims.

My invention is illustrated by way of example in the accompanying drawings, in which:

Fig. 1 is a side view in elevation, partly broken away and sectioned, of a combination water closet and bidet embodying my invention;

Fig. 2 is a plan view of the same;

Fig. 3 is a fragmentary vertical longitudinal section of the same in an enlarged scale;

Fig. 4 is a fragmentary vertical transversal section of the same through line 4—4 of Fig. 3.

Fig. 5 is a fragmentary plan view partly sectioned along line 5—5 of Fig. 3;

Fig. 6 is a fragmentary vertical section through line 6—6 of Fig. 5; and

Fig. 7 is a fragmentary vertical longitudinal section through a valve controlling one of the sources of water supply.

Referring to said drawings, 10 designates a closet bowl made integral with the usual rearwardly extending portion 11, and 12 designates the seat resting on top of the bowl.

The bidet 13 consists of a basin-like structure which is pivotally mounted at the rear and can be moved from the position shown in full lines in Fig. 1, where it rests on top of the toilet seat, to the position 13' shown in dot and dash lines in the same figure.

The bidet is preferably provided with a cover 14, which is pivotally mounted coaxially therewith and which can be raised or lowered into position independently of the bidet.

In accordance with the present invention, and as shown in Figs. 1 and 2, the bidet does not materially project beyond the front of the closet bowl, so that the front end of the bidet may be said to be on substantially the same vertical plane as the front of the bowl. At the rear the bidet is shown extending materially beyond the seat and the rim of the bowl, so that its basin portion proper, as distinguished from its rim portion, extends at the rear a distance sufficient to provide ample room in a front to rear direction.

The contour of the bidet may be such that a user may have his back to the wall when sitting on the bidet, as in the arrangement described and claimed in my patent above referred to, but in the preferred embodiment of my invention shown in the drawings, the narrower or nose portion of the bidet is at the rear, so that the user faces the wall when sitting on the bidet.

In order to conveniently mount the bidet in position, I provide a specially designed fitting 15, adapted to be secured onto the rear extension 11 of the bowl in the usual manner, said fitting having a pivotal attachment 16 at the front for the arm 17 carrying the seat 12 and another pivotal support 18 at the rear for the bidet and cover. As a natural result of this construction the bidet extends all the way to a point above its pivotal support and can be raised or lowered into position independently of the seat without interfering with the normal use of the closet. An advantage resulting from this construction is that when the bidet is in its raised position, shown in dot and dash lines in Fig. 1, it extends frontwardly less than it would if the axis of its pivotal attachment coincided with that of the seat, so that the bidet is less likely to cause discomfort during the normal use of the closet bowl.

Water can be supplied to the bidet in any suitable manner, for instance, through its pivotal support, in a manner somewhat similar to that described and claimed by me in another patent application now pending, entitled "Water supply arrangement for bidets", Serial No. 58,073.

The coaxial pivotal mounting of the bidet and cover is clearly illustrated in Figs. 2, 3, and 4, where it is seen that the bidet is carried by a bracket 19 rearwardly extending therefrom, said bracket having two depending ears 20, 21, one at each side thereof, fixed onto a pivotal shaft 22.

Said shaft is rotatable within support 18 and also forms a pivotal attachment for arms 23, 24 carrying the seat 14, said arms being retained in position by nuts 25, 26, respectively.

The lower portion of the fitting 15 is shown provided with two transversal passages 27, 28, opening one at each end thereof, and each adapted to be connected to a source of water supply, as will be hereinafter explained.

Passage 27 communicates with the space housing pivotal shaft 22 by means of a branch passage 29; similarly, passage 28 communicates

with said space by means of a branch passage 30. Pivotal shaft 22 is bored from one of its ends to a point somewhat beyond branch passage 29 so as to provide an axial passage 31, which can be reached by the waters coming through passages 29, 30. Pivotal shaft 22 rotates within a bushing 32, which is provided with openings 33, 34, registering with passages 29, 30, and said pivotal shaft is also provided with corresponding radial openings 35, 36, extending from passage 31 to the periphery of said shaft, said radial openings being adapted to register with passages 33, 34 when the bidet is in its lowered position shown in Figs. 3 and 4. It is thus apparent that when the bidet is in the position shown in dot and dash lines at 13' in Fig. 1, shaft 22 acts as a valve closing the outlet of passages 29 and 30.

Water thus admitted to passage 31 will reach the bidet by way of bracket 19, one of the ears 21 of said bracket being provided with two passages 37, 38, registering with two ports 39, 40, provided through the wall of the outer enlarged end of passage 31, said ports being controlled by a valve 41 coaxial with passage 31 and rotatably inserted within the enlarged outer end of said passage, said valve being retained in position by nut 26 and being operated by means of a handle 42.

When valve 41 is in the position shown in Fig. 6, ports 39, 40 are both closed, and if the valve is turned 90° in a clockwise direction it will establish communication between passage 31 and passage 37, while if it is turned 90° in the opposite direction it will establish communication between passage 31 and passage 38.

Passage 37 communicates with a longitudinal passage 43, leading to a spout 44, projecting through an opening 45 in the wall of the bidet and discharging in the bidet from the upper portion thereof. Passage 38 communicates with another longitudinal passage 46, leading to a tubular member 47 extending under the bidet along its longitudinal central line, said tubular member in its turn leading to a block 48 formed with a threaded portion 49 inserted through the bottom of the bidet and upwardly extending therefrom. Said threaded portion is provided with a central passage 50 communicating with tubular member 47, said passage 50 being open at the upper end.

Block 48 is retained in position by means of a gland nut 51, screwed over part 49, said gland nut being provided with an outlet 52 registering with passage 50.

The bottom of the bidet is also provided with a set of perforations 53 surrounding gland nut 51, and said gland nut is formed with an annular recess 54, which has the double purpose of retaining in position the rubber washer 55 shown in Fig. 3, and to provide a convenient means for attaching a rubber hose when it should be desired to use the water spray for internal cleansing.

To this end rubber washer 55, the function of which is to cover perforations 53, is formed with a button portion 56, adapted to be mounted over and retained by gland nut 51, said button portion 56 providing a convenient means for handling the washer 55 for the purpose of removing it when it is necessary to drain the contents of the bidet.

In order to prevent splashing, perforations 53 are covered by a shell 57 at the lower side of the bidet, said shell having a discharge opening 58

through which water issuing from perforation 53 will be discharged into the closet bowl.

In order to prevent leakages the housing of shaft 22 is provided with packings, such as 59, held in position by bushings such as 60, 61, and a spring 62 is interposed between bushing 60 and a nut 63 inserted at one end of the housing of shaft 22.

The open end of each of passages 27, 28 is equipped with a fitting 64—64', of which a controlling valve such as shown at 65—65' in Fig. 2 forms a part. Each valve is connected to a source of water supply, for instance, valve 65 may be connected to the cold water piping system, as shown at 66 in Fig. 1, while valve 65' may be connected to the hot water piping system, as shown at 67 in Fig. 4.

As shown in detail in Fig. 7, the body of each valve is preferably upwardly inclined towards the front of the closet bowl and its inlet 68 is controlled by a needle 69 actuated by a hand-wheel 70.

When the needle is withdrawn from its closing position shown in Fig. 7, the water admitted to the valve through inlet 68 will reach passage 27 or 28 through the valve outlet 71.

Recent developments in the art of sanitation as related to the connection of plumbing fixtures to a system of water supply have led to the adoption of safety devices inserted in the piping, the objects of such devices being the prevention of back syphonage in such cases where contaminated water from a fixture might reach the water supply system when a vacuum or reduction in pressure should occur. In some cases where through the manipulation or leakage of a valve or valves there might be the possibility of the city water becoming contaminated through the intermingling therewith of an unsafe water coming from another source of supply, for instance, water obtained from a cistern for steam and hot water producing purposes, corrective arrangements of the piping have been made, or safety devices, such as check valves, have been installed.

As a rule, such safety devices consist of vacuum breakers and/or check valves inserted at some suitable point in the piping, so that the safety of an installation does not solely depend upon the design of a fixture, but depends rather upon the care with which the installation is made.

In order to insure absolute safety and prevent the possibility of the device being improperly installed through carelessness or inexperience of the plumber, I have incorporated the necessary safety devices in the fittings 64—64', so that said devices form an integral part of the bidet structure itself.

As clearly shown in Fig. 4, outlet 71 of valve 65 is controlled by a check valve 72, permitting water to flow only in the direction of the bidet. Said outlet 71 opens into chamber 73 vertically extending to a point above the level which may be reached by the water within the bidet, the upper part of said chamber being provided with a cap 74, provided with air inlets 75, leading to a port 76 controlled by a normally open valve 77.

From chamber 73 water can reach passage 27 through a passage 78 leading to outlet 79 connected to the open end of passage 27, said passage 78 being controlled by another check valve 80, allowing water to flow only in the direction of the bidet.

As stated, air valve 77, which together with

air inlets 75—76 constitutes a vacuum breaker, is normally open, whereas check valve 72 is normally closed. The drawings show valve 72 forced open by the water flowing through outlet 71 of the control valve, the outward movement of said check valve 72 forcing the air valve 77 to its closed position, as shown. This is obtained by causing stem 81 of check valve 72 to force upwardly a lever 82, pivotally mounted at 83, the outer end of said lever being connected by a link 84 to another lever 85 pivotally mounted at 86, the tip of said lever 85 abutting against the lower end of stem 87 of air valve 77.

It will be seen that by virtue of this arrangement when a vacuum occurs within pipe 66 the possibility of back syphonage from the bidet through the various passages leading to valve outlet 71 will be prevented not only by check valve 72, but also and mainly by the free admission of air through inlets 75, 76 of the vacuum breaker.

The additional check valve 80 has for its object to prevent water from pipe 67 of one of the water supply systems reaching chamber 73 and overflowing through air inlets 75, an occurrence which might possibly take place with valve 65' open and valve 41 in the position shown in Fig. 6, while the bidet is in its operative position, or which might even take place when the bidet is in its raised position if valve 65' should happen to leak. As a consequence, water from one of the systems of water supply will be effectively prevented from reaching the other system so that contamination of one water by the other through the so-called direct cross connection between the two systems will be avoided. Furthermore, such a contamination will be doubly guarded against due to the fact that in the arrangement as designed two check valves arranged in series are provided, instead of a single check valve.

It is thus seen that since fittings 64, 64' constitute an integral part of the device it is sufficient for said device to be directly connected to the water supply systems without the necessity of using any special precaution or of providing separate vacuum breakers and check valves in the connections.

The constructional details of the invention may vary from those shown without departing from the inventive idea; the drawings should, therefore, be understood as being intended for illustrative purposes only and not in a limiting sense.

I accordingly reserve the right to carry my invention into practice in all those ways and manners which may enter, fairly, into the scope of the appended claims.

I claim:

1. A bidet of the character described, adapted to be pivotally mounted on top of a closet bowl, the basin portion proper of said bidet rearwardly extending beyond the edge of the bowl.

2. A bidet of the character described, adapted to be pivotally mounted on top of a closet bowl, the basin portion proper of said bidet rearwardly extending beyond the edge of the bowl and extending frontwardly substantially no more than the front of said bowl.

3. In a device of the character described, a closet bowl, and a bidet pivotally mounted on top of said bowl, the basin portion proper of said bidet rearwardly extending beyond the edge of said bowl.

4. In a device of the character described, a closet bowl, a seat pivotally mounted on top of

- said bowl, and a bidet also pivotally mounted on top of said bowl, adapted to be lowered to its operative position above said seat, the basin portion proper of said bidet rearwardly extending beyond the edge of said bowl.
- 5 5. In a device of the character described, a closet bowl, a seat pivotally mounted on top of said bowl at a point rearwardly spaced from the pivotal support of said seat, said bidet being adapted to be lowered to its operative position above said seat, the basin portion proper of said bidet rearwardly extending beyond the edge of said bowl.
- 10 6. A bidet of the character described, adapted to be pivotally mounted on top of a closet bowl, said bidet having an elongated contour narrower at the rear than at the front end.
- 15 7. A bidet of the character described, adapted to be pivotally mounted on top of a closet bowl, said bidet having an elongated contour narrower at the rear than at the front end and extending at the rear beyond the edge of the bowl.
- 20 8. A bidet of the character described, adapted to be pivotally mounted on top of a closet bowl, said bidet having an elongated contour narrower at the rear than at the front end, and a cover for said bidet, copivotal therewith, having a contour substantially corresponding to the contour of said bidet.
- 25 9. In a device of the character described, comprising a bidet and a support therefor, a member pivotally mounted on said support, carrying said bidet, said member being provided with a water inlet and two outlets, one leading to a filling and the other to a spray discharge outlet in said bidet, and a valve, coaxial with said member, adapted to selectively connect either member outlet to said inlet.
- 30 10. In a device of the character described, a bidet, a support therefor provided with a water passage at each end, and a member pivotally mounted in said support, carrying said bidet, said member having a passage adapted to lead water from said first mentioned passages to the inside of said bidet, said second mentioned passages registering with said first mentioned passages when said bidet is moved to operative position, said member closing both of said first mentioned passages when said bidet is moved to its inoperative position, thereby cutting off communication between said two passages.
- 35 11. In a device of the character described, a bidet, a support therefor provided with a water passage at each end, a member pivotally mounted in said support, carrying said bidet, said member having a passage adapted to lead water from said first mentioned passages to the inside of said bidet, said second mentioned passage registering with said first mentioned passages when said bidet is moved to operative position, said member closing both of said first mentioned passages when said bidet is moved to its inoperative position, thereby cutting off communication between said two passages.
- 40 12. In a device of the class described, a closet bowl, a support mounted on said bowl, a seat pivotally mounted on said support, and a bidet also pivotally mounted on said support at a point rearwardly spaced from the pivotal attachment of said seat, said bidet being adapted to be lowered to its operative position above said seat.
- 45 13. In a device of the class described, a closet bowl, a support mounted on said bowl, a seat pivotally mounted on said support, a bidet also pivotally mounted on said support at a point rearwardly spaced from the pivotal attachment of said seat, said bidet being adapted to be lowered to its operative position above said seat, and means for supplying water to said bidet through its pivotal support.
- 50 14. In a device of the class described, a closet bowl, a support mounted on said bowl, a seat pivotally mounted on said support, a bidet also pivotally mounted on said support at a point rearwardly spaced from the pivotal attachment of said seat, said bidet being adapted to be lowered to its operative position above said seat, and means for supplying water to said bidet through its pivotal mounting from two separate sources of supply, one at each end of said support.
- 55 15. In a device of the character described, a bidet, a support therefor provided with a water passage at each end, and a member pivotally mounted in said support, carrying said bidet, said member being provided with an inlet communicating with both of said passages, and with two outlets leading one to a filling outlet and the other to a spray discharge outlet in said bidet, and valve, coaxial with said member, adapted to selectively connect either outlet to said inlet.
16. In a device of the class described, a closet bowl, and a bidet movably mounted with respect to, and adapted to rest in its operative position above said bowl, the basin portion proper of said bidet rearwardly extending beyond the edge of said bowl.
17. In a device of the class described, a closet bowl, and a bidet movably mounted with respect to, and adapted to rest in its operative position above said bowl, said bidet having an elongated contour narrower at the rear than at the front end and extending at the rear beyond the edge of said bowl.

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