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Dominguez-Armada

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[45] **Nov. 4, 1975**

[54] **PORTABLE BIDET**

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[30] **Foreign Application Priority Data**

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[52] **U.S. Cl.** **4/7**

[51] **Int. Cl.²** **A47K 3/22;** A47K 11/08

[58] **Field of Search** 4/7, 6, 1, 146, 147, 155, 4/156

[56] **References Cited**

UNITED STATES PATENTS

211,874	2/1879	Wasson	4/147
485,943	11/1892	Jamison	4/6
2,988,754	6/1961	Misson	4/156 X
3,034,137	5/1962	Glou	4/6
3,072,918	1/1963	McCall et al.	4/6
3,528,112	9/1970	Warnick	4/6 X
3,711,872	1/1973	Jarosinski	4/7 X

FOREIGN PATENTS OR APPLICATIONS

128,405	2/1902	Germany	4/7

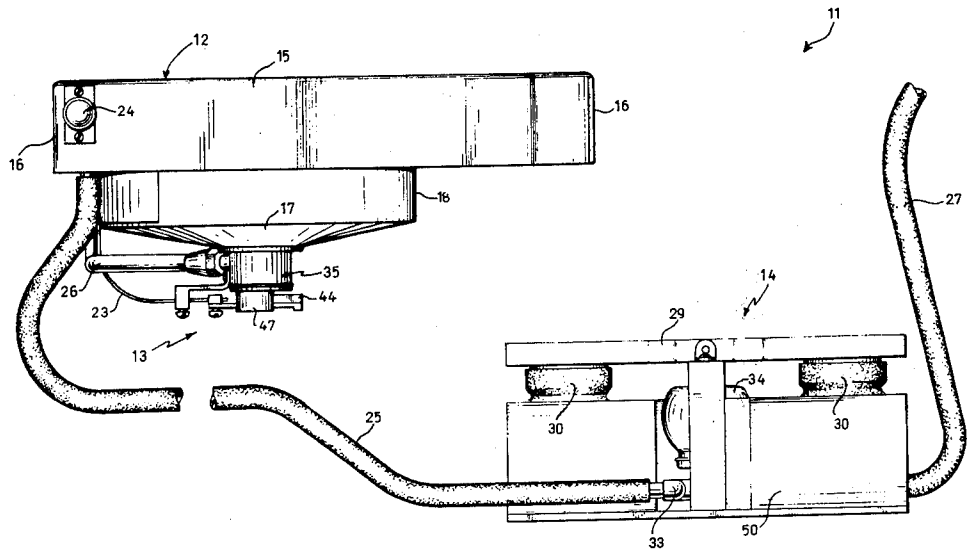
Primary Examiner—Henry K. Artis

Attorney, Agent, or Firm—Ladas, Parry, Von Gehr, Goldsmith & Deschamps

[57] **ABSTRACT**

A portable bidet adaptable to toilet bowls comprises an open container formed by side and bottom walls. One of the side walls is slightly tapered and has a rounded top edge. The bottom wall has an orifice which is covered by a plate including a section with a multiplicity of small openings and a slot for drainage. Located on the bottom wall a valve is also included next to the plate with the section of small holes and slot for drainage. The valve is operated by a sliding lever placed laterally in the open container.. The portable bidet also comprises a pump which is connected to the open container by means of a flexible tube, and which pump is also connected to a water tap by a coupling duct.

14 Claims, 11 Drawing Figures



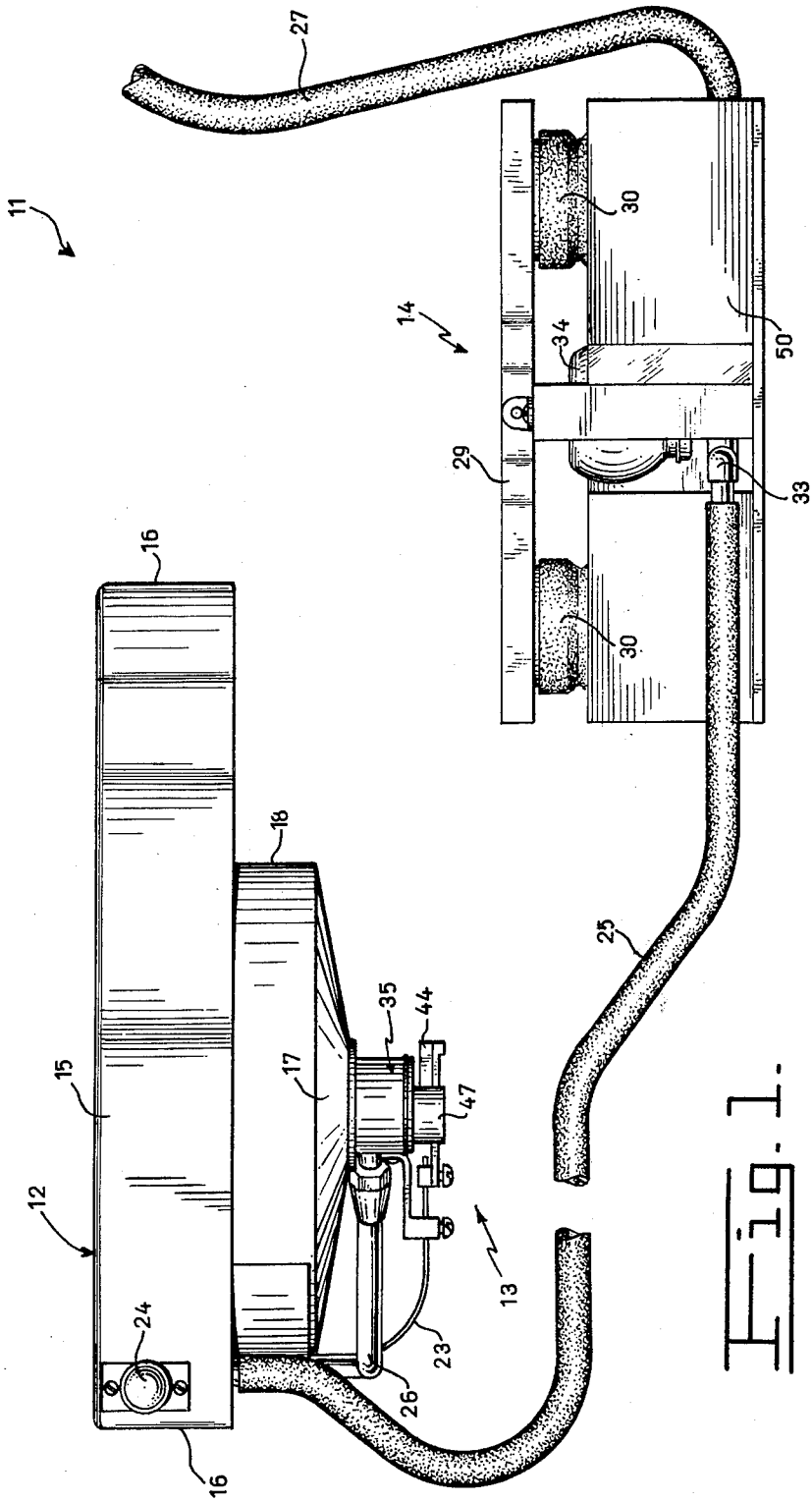
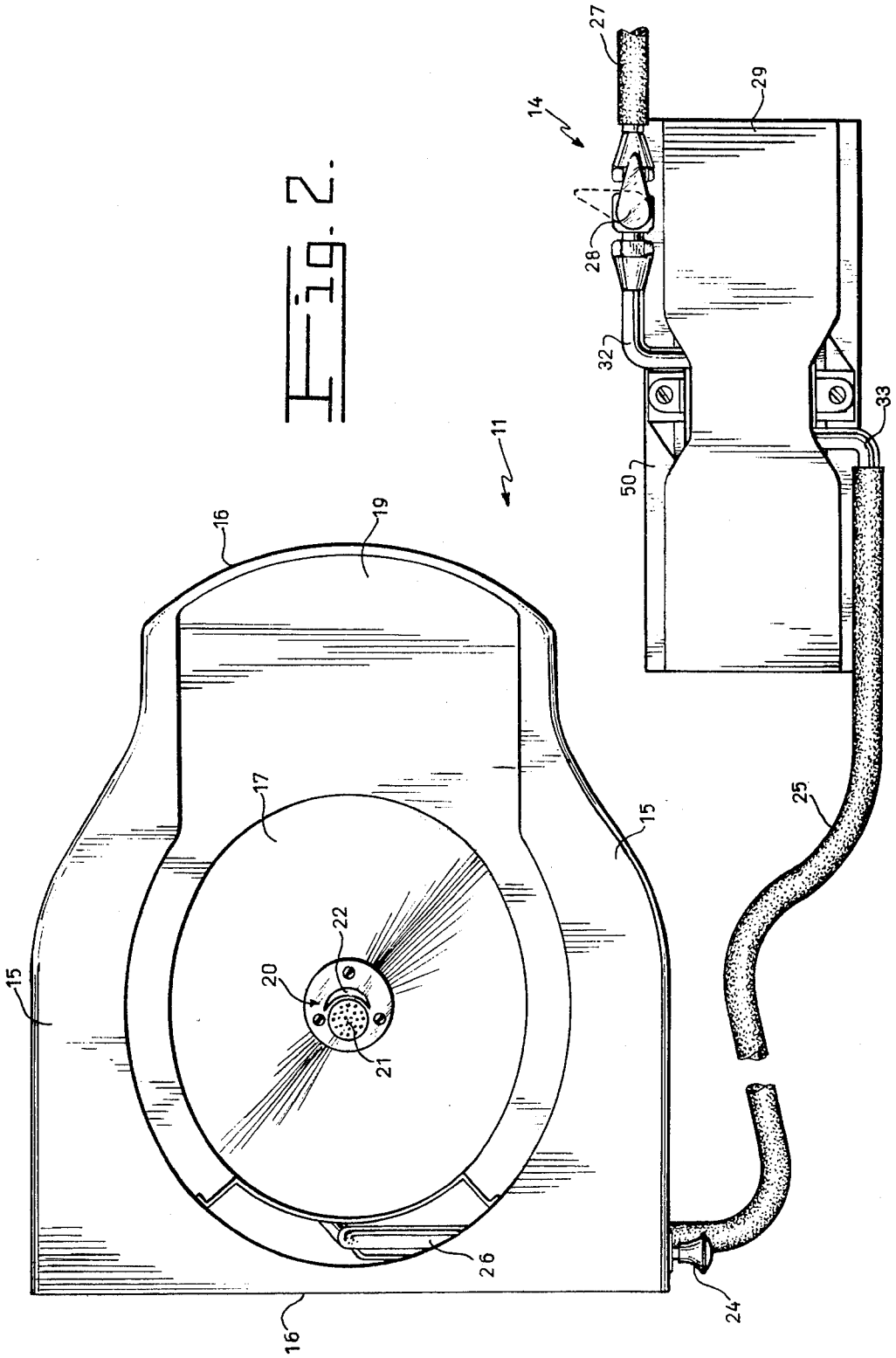


Fig. 1.

Fig. 2.



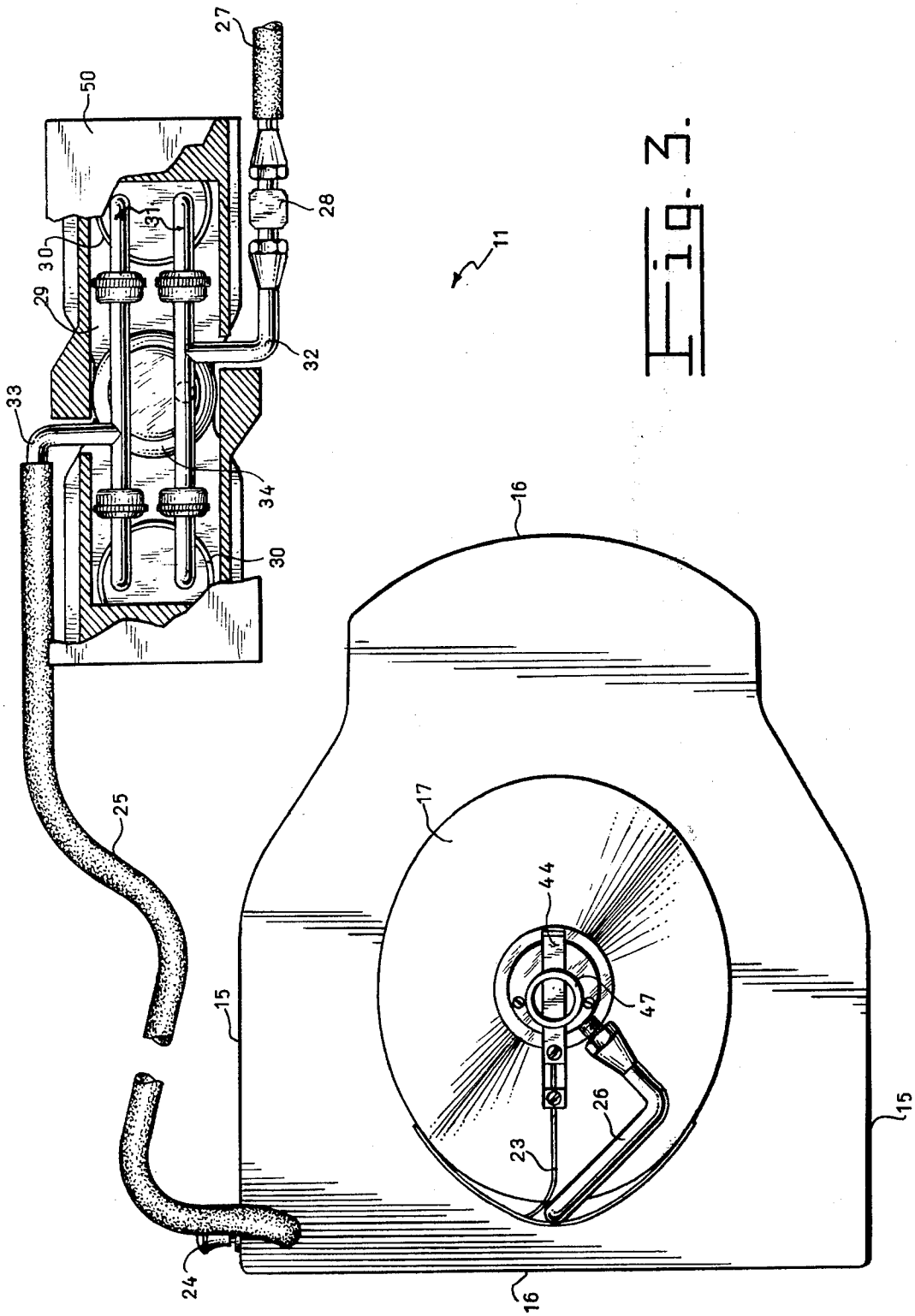


Fig. 3.

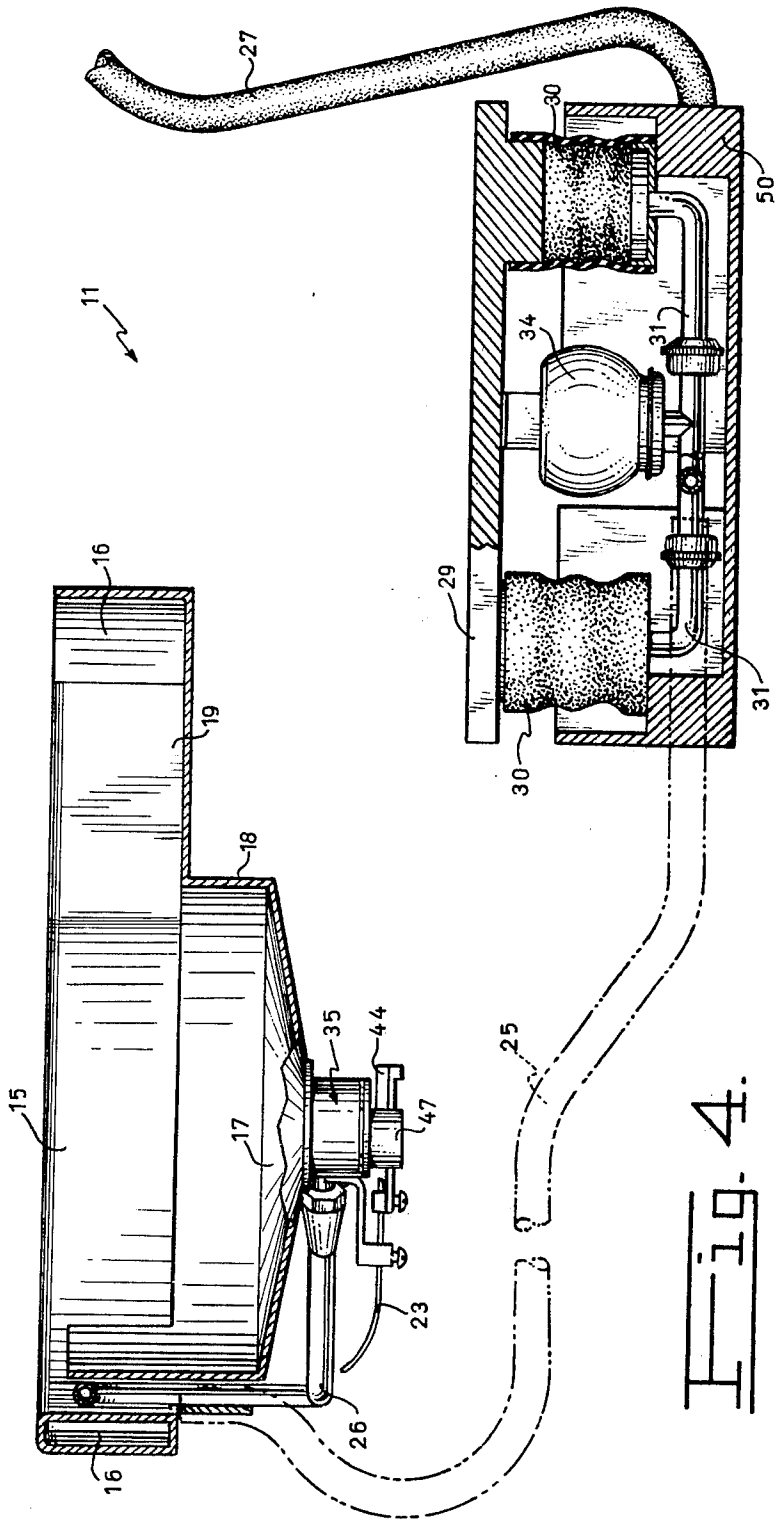


Fig. 4.

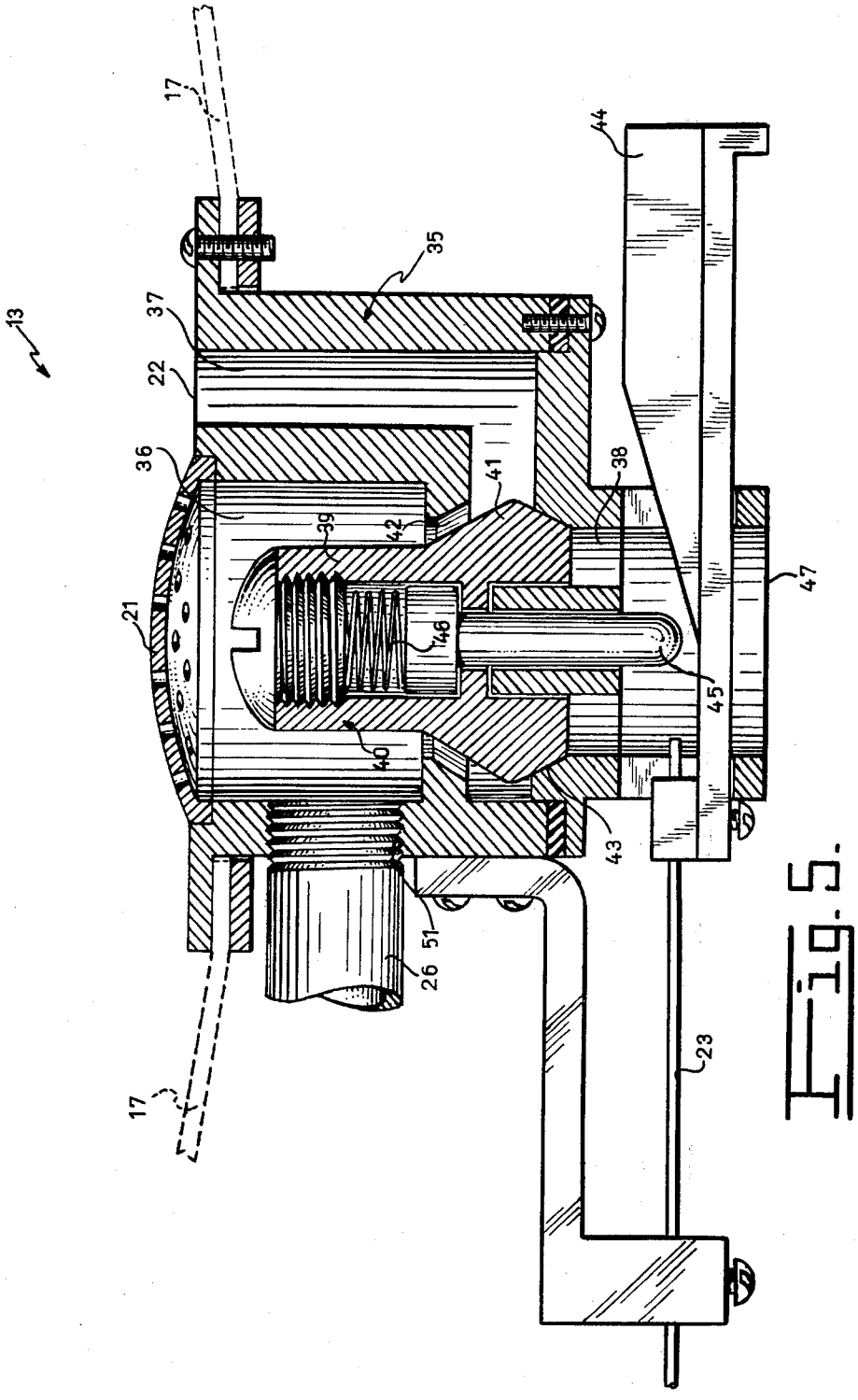


Fig. 5.

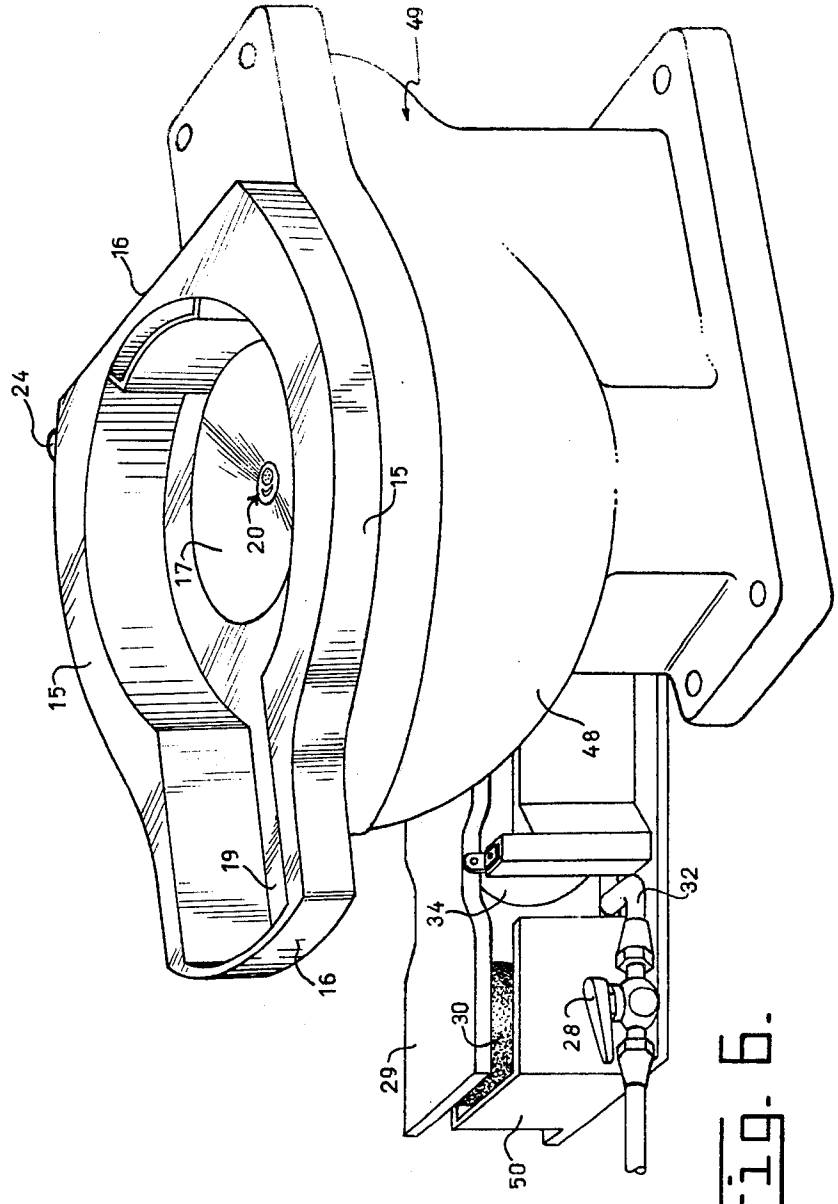


Fig. 6.

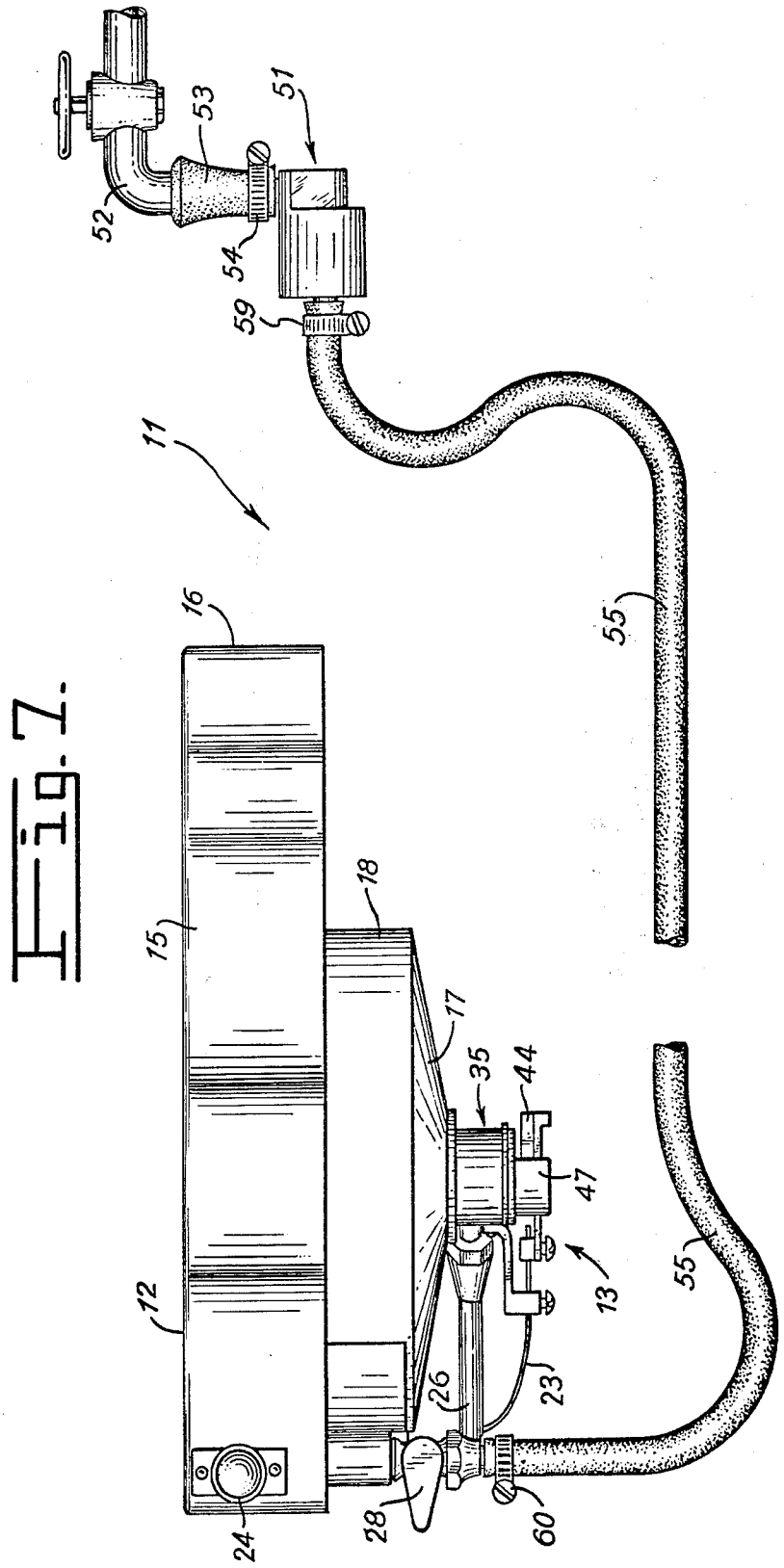


Fig. 7.

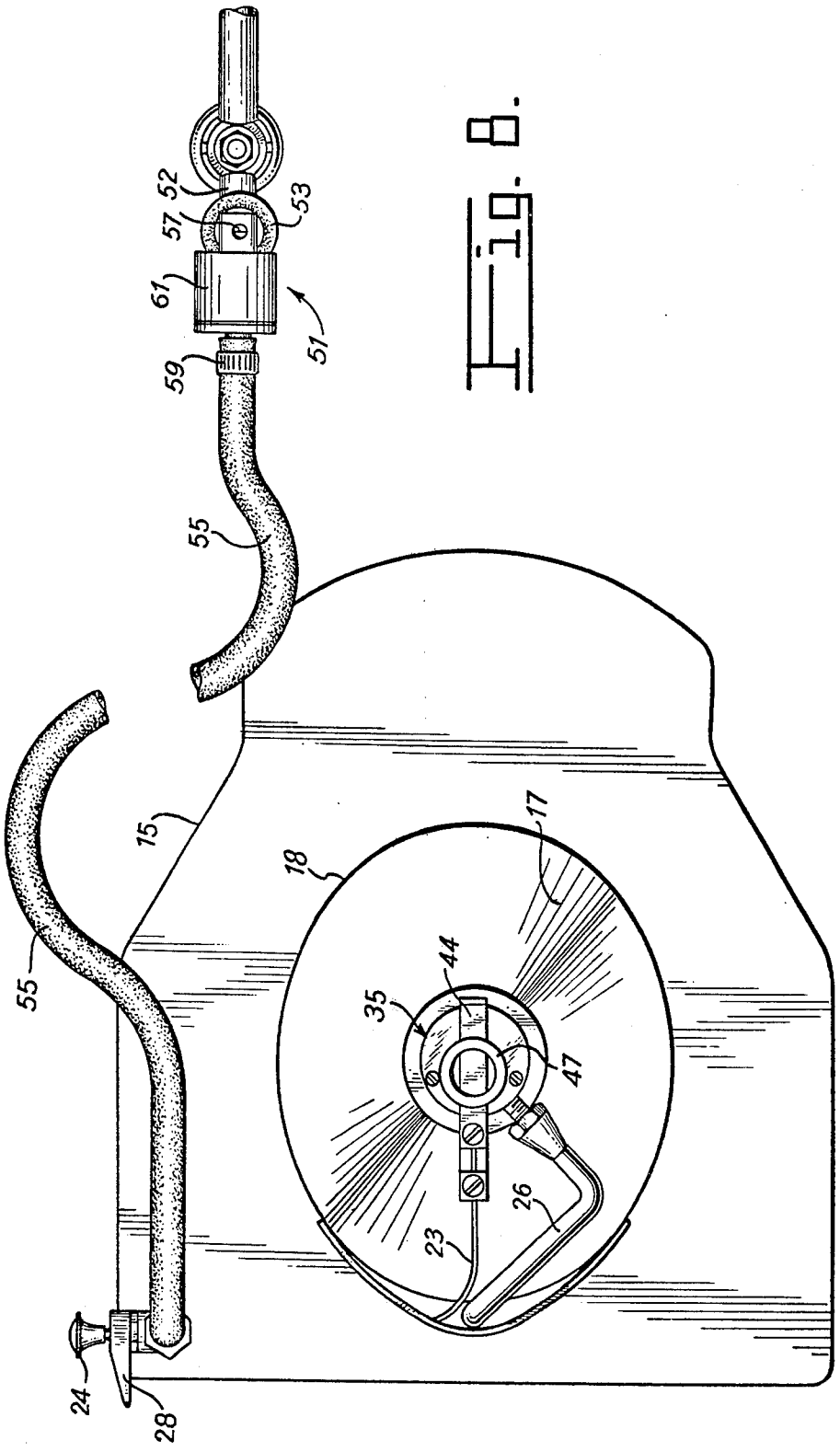


Fig. 8.

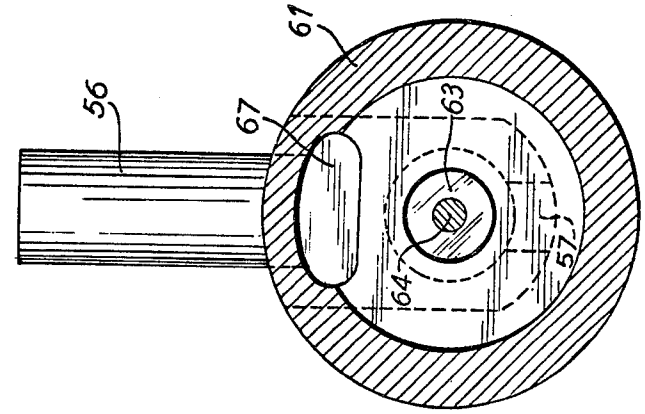


Fig. 11.

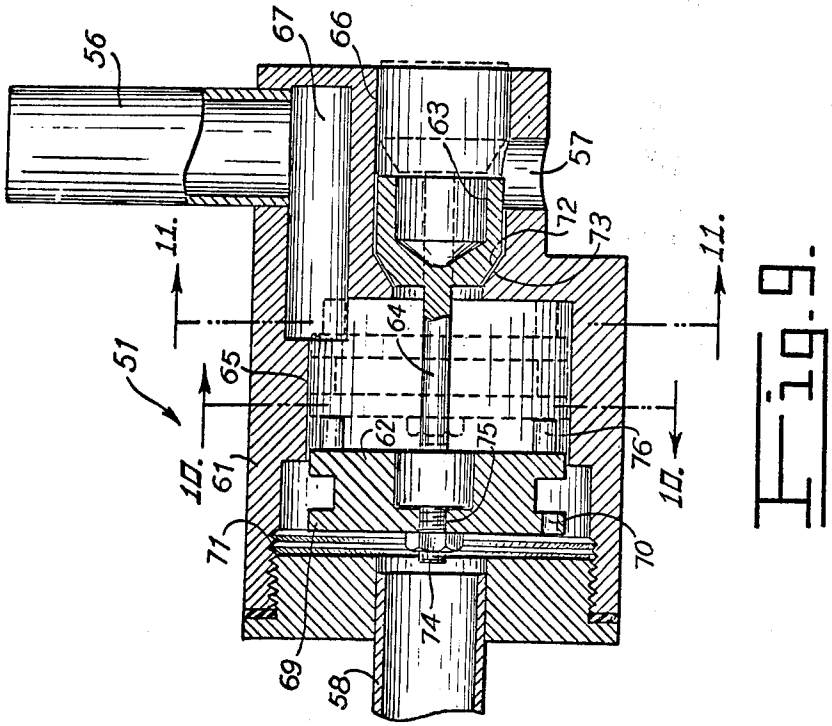


Fig. 9.

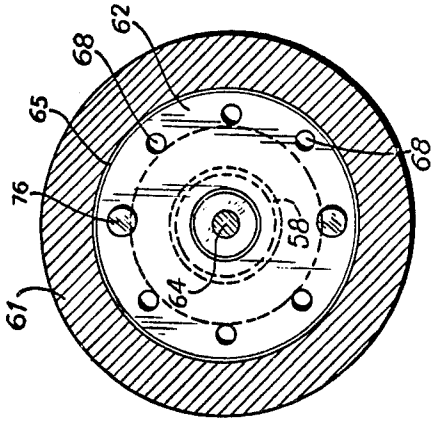


Fig. 10.

PORTABLE BIDET

BACKGROUND OF THE INVENTION

It is felt at the present time the bathroom fixture known as a bidet is no longer commonly used primarily because it requires special drainage installations which added to the cost of the fixture itself, prices it out of the market.

Another reason why the bidet is no longer as commonly used as it was in the past, is because its structural design is not esthetically attractive and the special drainage installations required are always clearly visible.

Furthermore, we must take into consideration that due to the population explosion taking place in the modern world, cities are overcrowded and living units have been reduced in size in order to take maximum advantage of minimum space. Therefore, the bathrooms of modern living units have been reduced to a size sufficient to accommodate only the fixtures which are considered absolutely essential, e.g. a washbowl, a toilet and a small space adequate for bathing, which usually means a shower with a drain. Other fixtures, which it is felt can be dispensed with, such as a bathtub and a bidet, have been eliminated. Nonetheless, it should be borne in mind that the installation of a bidet is not something to be disregarded since it is an essential fixture from the point of view of hygiene.

OBJECTS OF THE INVENTION

Therefore, one purpose of this invention is to provide an improved bidet adaptable to toilet bowls which can be installed regardless of the size of the bathroom.

Another purpose of this invention is to provide an improved portable bidet adaptable to toilet bowls which does not require special drainage installations.

An additional purpose of this invention is to provide an improved portable bidet adaptable to toilet bowls which is economical and simple.

A further purpose of this invention is to provide an improved portable bidet adaptable to toilet bowls which can not be considered esthetically unattractive inasmuch as, since it is portable, it will not be permanently installed in the bathroom and therefore will not be visible.

It is another purpose of this invention to provide an improved portable bidet adaptable to toilet bowls comprising an open container formed by side and bottom walls; one of said side walls being slightly tapered and having a rounded top edge and said bottom wall including an orifice covered by a plate with a section with a multiplicity of holes and a drainage slot; a valve located in said bottom wall, next to the plate with the section with a multiplicity of openings, said valve being operated by a sliding lever laterally placed in the open container; and, a pump coupled to the open container and to a water tap by means of flexible ducts.

Another object of this invention is to provide an automatic discharge valve which obviates the said pedal pump to drive the water, which valve can be attached directly to a faucet by means of a flexible tube and the corresponding clamps, whereby when the valve for regulating the flow of water to the bidet is closed and the faucet is open, the water passes out through a first discharge orifice of the valve directly below the faucet and into the washbowl, allowing the user to regulate the temperature of the water for subsequent application in the bidet. When the valve which admits water to the bidet is opened, the automatic discharge valve changes its position automatically, closing the first or discharge orifice and opening a second orifice which delivers the water, the temperature of which has now been regulated, directly to the bidet.

The important feature of this valve is that, when the faucet is running and the bidet is closed, it prevents the building up of pressure in the hose which transmits water from the faucet to the bidet, pressure which otherwise might dislodge the hose from the faucet and cause undesirable consequences.

Furthermore, in the absence of this device it would be necessary first to regulate the temperature of the water issuing from the faucet and then with the faucet open attach the hose leading to the bidet, causing the user the inconvenience of splashing.

These and other objectives to be obtained from the use of this invention will be better understood and appreciated by the reading of the following description which refers to the drawings of the preferred embodiment of the present invention.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side vertical elevational view showing the improved portable bidet adaptable to toilet bowls which is the subject of this invention.

Fig. 2 is a top plan view showing the improved portable bidet adaptable to toilet bowls which is the subject of this invention.

FIG. 3 is a bottom plan view showing the improved portable bidet adaptable to toilet bowls which is the subject of this invention.

FIG. 4 is a conventional longitudinal sectional view showing the structural elements which constitute the improved portable bidet adaptable to toilet bowls which is the subject of this invention.

FIG. 5 is a conventional longitudinal sectional view showing the valve of the improved portable bidet adaptable to toilet bowls which is the subject of this invention.

FIG. 6 is a perspective view showing the improved portable bidet, the subject of this invention, placed on a toilet bowl.

FIG. 7 is a view in vertical elevation which shows the bidet of the present invention in an embodiment containing an automatic discharge valve which eliminates the manual water supply pump, supplying the water instead directly from a washbowl faucet or the like.

Fig. 8 is a lower plan view of the bidet of the present invention as shown in FIG. 7.

Fig. 9 is a view in lengthwise section of the automatic discharge valve which is attached to the water supply faucet, and which is one of its positions permits the water to flow directly from the faucet into the washbowl, and in its other position illustrated with dotted lines conducts the water directly to the bidet for the practical application thereof.

Fig. 10 is a transverse section along 10—10 of FIG. 9.

FIG. 11 is a view in transverse cross-section along 11 11 of FIG 9.

DETAILED DESCRIPTION OF THE INVENTION

This invention refers to sanitary installations and, more specifically, to an improved portable bidet (11) adaptable to toilet bowls, as shown in FIG. 1, which bidet (11) comprises an open container (12) having a valve (13) connected to it, said valve (13) allowing

water to flow in and out of the inside of the container (12), and a pump (14) which supplies the flow of water necessary for its operation.

The open container (12), as shown in FIG. 1 to 4, is formed by side walls (15) and (16) and a bottom wall (17). One of said side walls (16) is slightly tapered and has a rounded top edge. From said tapered side wall (16) to said bottom wall (17) there is a drop (18) so that said bottom wall (17) is slightly deeper, thus forming a step or overflow (19) registering with said tapered side wall (16).

The bottom wall (17) includes, in the center, an orifice which is covered by a plate (20) comprised of a section (21) with a multiplicity of small openings and of a slot for drainage (22). Therefore, the open container (12) has a spray type water inlet through said perforated section (21) and a stream type one through said drainage slots (22), and water is drained out through said drainage slot (22).

The valve (13) is coupled to the out side and to said orifice on said bottom wall (17) and it is operated by a connecting cable (23) and a sliding lever (24) which lever is attached to one of said side walls (15).

In order to establish the necessary flow of water, the pump (14) is coupled by a flexible tube (25) to a water inlet tube (26) fixed to the open container (12) and, on the other hand said pump (14) has a flexible connection or coupling duct (27) through which water is obtained from a suitable source, whose flow is regulated by means of a small valve (28).

Therefore, in order to operate the bidet (11) which is the subject of this invention, the connection (27) is joined to an adequate water tap and the pump (14) is actuated by a pivoting pedal (29) housed in housing (50). Said pedal (29) is connected at its ends to one end of bellows (30) which, in turn, are joined to parallel tubes (31). These parallel tubes (31) inter-connect said bellows (30), besides one of them is coupled to said connection (27) through said valve (28) which is attached to said one tube (31) by a bend connector (32) and the other of said parallel tubes (31) is joined to the flexible tube (25) by means of another bend connector (33) (See FIG. 3).

The parallel tube (31) which is joined to the connection (27) is also connected by its middle portion to an air chamber (34) which acts as a regulating air cushion against the pulsations of the water flow. That is to say, when the pedal (29) is moved, a difference of pressure between the water inlet and the bellows (30) is produced, thus making it possible to start a flow of water from said water inlet into the open container (12), which flow is intermittent because it is stopped each time the pedal (29) is moved. Thus, in order to eliminate the inconvenience of continuously actuating the pedal (29) for obtaining a constant flow of water (which will also be pulsating), the aforementioned air chamber (34) has been added to the invention fixture, making it a pleasant and functional piece of equipment to use.

After the water has been pumped, it flows through the flexible tube (25) and the water inlet tube (26) to the valve (13) which makes it possible to obtain the desired amount of water in the open container (12) by means of a spray or stream of water. Therefore, as shown in FIG. 5, said valve (13) consists of a valve body (35), which is divided into two chambers (36) and (37). The chamber (36) is open at its upper end by way of the perforated section (21) of the plate (20), while the chamber (37) is open at its upper end by way of the drainage slot (22) of the plate (20). The two chambers (36) and (37) open at their lower ends into a joint drainage openings (38). Consequently, said chamber (37) is square angular in shape and said chamber (36) is cylindrical. Said cylindrical chamber (36) has a water inlet opening (51) wherein said water inlet tube (26) is coupled.

Inside chamber (36) there is a cylindrical end portion (39) of a movable throttle (40), the other end portion (41) of which is irregular in shape, being formed as two truncated cones coupled by their largest diameter bases. These truncated cones are seated, respectively, in a conical perforation (42) at the discharging end of said chamber (36) and in another conical perforation (43) at the discharging end of said chamber (37), registering with said joint drainage opening (38).

The shape of said movable throttle (40) allows the valve (13) to perform its various functions, when said movable throttle (40) is raised and lowered by a sliding elevating plate (44), and by virtue of the fact that said throttle (40) houses a bolt (45) and a spring (46), i.e. it it spring loaded. Therefore, the sliding elevating plate (44) is mounted by a supporting ring (47) to register with the joint drainage opening (38) and is also connected by one of its ends to one end of said connecting cable (23) which actuates it when said sliding lever (24) is pushed or pulled. Said bolt (45) and said spring (46), as indicated, are located inside said movable throttle (40) so that said spring (46) forces said bolt (45) away from the end of said irregularly shaped portion (41) registering with said joint drainage opening (38).

So then, when said sliding elevating plate (44) is moved by means of said connecting cable (23), it pushes up said movable throttle (40), because its beveled end portion nearer the coupling with the connecting cable (23) brings up against the protruding portion of said bolt (45), in this way the upper truncated cone of said irregularly shaped portion (41) becomes seated in said conical perforation (42) of said chamber (36).

As a consequence of the foregoing, at that point the flow of water is stopped and when more water is run through said water inlet opening (51) and said water inlet tube (26), its only escape is through said section (21) with a multiplicity of openings, hence, providing a spray type supply of water to said open container (12). At the same time, the water flows through said drainage slot (22) to said chamber (37) and, inasmuch as said conical perforation (43) of said chamber (37) is open, the water drains out through said joint drainage openings (38) and said supporting ring (47).

Here we can see that in the above described position of said movable throttle (40) there is a constant flow of water that is immediately drained off. This is the proper position to be used when fixture of the invention is to be employed as a bidet.

If we wish to fill said open container (12) with water in order to use it as a bath for a limited portion of the body, then the action of said sliding elevating plate (44) on said movable throttle (40) must be stopped in order to allow it to fall down by its own weight and seat the lower truncated cone of its irregularly shaped portion (41) with said conical perforation (43) of said chamber (37), thus closing the water flow at this point. Consequently, when water is run through said water inlet tube (26), it will flow through said water inlet opening (51) into said chamber (36) and out through

said conical perforation (42) of same into chamber (37), continuing on through said chamber (37) to said joint drainage opening (22), whence it will pass into said open container (12). In this case, therefore, the water will accumulate in said open container (12).

So then, water is to be run as outlined above until the desired amount has accumulated inside open container (12) and until such time as the bath for a limited portion of the body has been completed. Only then will the water be drained from said open container (12). To drain the water, said movable throttle (40) is raised actuating said sliding elevating plate (44) by pulling said lever (24) and said connecting cable (23). This action will open said conical perforation (43) of chamber (37) and allow the free flow of the water through same and out said joint drainage opening (38) and said supporting ring (47).

The open container (12) is shaped in such a way that it may be coupled to a bowl (48) of a toilet (49) as shown in FIG. 6. Then the fixture which is the subject of this invention is very useful inasmuch as it may be used in any size bathroom. For example, in an ordinary size bathroom of a small apartment, we fill the washbowl full of warm water and place an end of connection (27) in the water, work said pump (14) as indicated above, by moving said pivoting pedal (29), which will force the water to flow from the washbowl into said open container (12) and the flow of water may be controlled in either of two ways, depending on whether we wish to use the invention as a bidet or as a bath for a limited portion of the body: by means of said valve (28) or said sliding lever (24).

As shown above, the portable bidet (11), which is the subject of this invention, does have the many outstanding advantages pointed out before and also offers several alternative uses: The simple open container (12) can be used by closing the opening in the bottom wall (17) with a plug and supplying water from any convenient source, such as a pail of warm water.

Or the open container (12), together with the pump (14) can be used, covering the opening in the bottom wall (17) with the plate (20).

Lastly, the most complete alternative is to use the portable bidet (11) as has been outlined in the above text, i.e., by using the valve (13) and the pump (14) coupled to the open container (12).

The embodiment previously described which includes pump (14) to deliver water to the bidet, by means of pedal (29), has certain drawbacks, among which is the fact that when hose (27) is connected directly to the faucet which supplies water to the bidet, with the faucet open and at the same time valve (28) closed, the water pressure builds up and tends to blow hose (27) loose from the faucet to which it is connected and thus cause spattering and undesirable waste of water.

On the other hand it is desirable for the water which is to be used in the bidet to have well-regulated temperature which should be done before connecting the hose, and hence making the hose connection while the water is running, which obviously leads to undesirable splattering of the person who connects the hose.

To avoid these drawbacks, as well as to eliminate the rather bulky pump (14), there is included as an important characteristic of this invention, illustrated in FIGS. 7 to 11, the provision of valve (51) for the automatic supply of water to the bidet, directly connectable to the faucet (52), which supplies water, by means of the elastic fitting (53) which is held with clamp (54) to tube (56) which is the valve intake.

The advantage of valve (51) is that, when small valve (28) is in its closed position, pressure does not build up in hose (55), since the water supplied to valve (51) from faucet (52) escapes through the outlet orifice (57) directly to the washbowl or other receptacle. The outflow of water from orifice (57) to the washbowl of faucet (52) permits the user to regulate the temperature of the water before transmitting it for use in the bidet.

If faucet (52) is open and if valve (28) is opened also, circulation of water toward the bidet automatically operates valve (51), closing the discharge outlet (57) and giving access to the water along outlet tube (58).

Outlet tube (58) of valve (51) is attached by clamp (59) to hose (55), the other end of which is also attached by clamp (60) to valve (28). Thus operation of valve (28) in effect operates automatic valve (51), which can be considered a valve with a single inlet (56) and two outlets (57) and (58); when valve (28) is closed the water from faucet (52) escapes through outlet (57), and when valve (28) is open, water from faucet (52) passes through outlet (58) and through valve (28) directly to the bidet.

Valve (51), as can be noted in FIG. 9, is composed of the essentially cylindrical body (61), which is hollow, and inside of which is a sliding double piston, consisting of larger diameter piston (62) and smaller diameter piston (63), which are joined by shaft or rod (64). Both pistons (62) and (63) move in their respective cylindrical chambers (65) and (66), the diameters of which are substantially the same or very slightly larger than the outside diameters of pistons (62) and (63).

When valve (28), which in this embodiment is located at the end of hose (55), mounted on the underside of the bidet, is in the open position, the flow of water from the faucet passes through inlet (56) and through inlet passage (67) into the valve as far as the cylindrical chamber (65), pushing against piston (62) and passing through small orifices (68) located in one peripheral shoulder (69) and passing through other orifice (70) which traverse the second peripheral shoulder or ring (71) of piston (62), then passing through the space between piston 62 and outlet (58). When piston (62) is carried forward by the action of the water passing through the valve, the second and smaller diameter piston (63), one end of which is a truncated cone (72), seating against a matching conical seat (73), sealing the water pass from outlet (57) which discharges into the washbowl of faucet (52).

When bidet valve (28) is closed the water from faucet (52) moves piston (63) until it can escape through outlet (57), which position is indicated with dotted lines in FIG. 9. Piston (62) does not reach the end of its chamber (65) because it is prevented by stop pins (76).

Shaft (64) which joins pistons (62) and (63) is of one piece with piston (63) and includes threaded end (74) which passes through a central hole in piston (62) and is secured thereto by nut 75.

When the water is escaping through outlet (57) directly into the washbowl, the user can regulate the water temperature with no risk that excessive pressure will tend to blow connection (53) off faucet (52). Once the water has the desired temperature, it is sufficient to open valve (28) in order to produce immediate movement of pistons (62) and (63). Piston (63) then blocks off the outlet (57) while piston (62) allows the water to

pass through outlet (58) directly to the bidet for function as above described.

Eventhough the above description has been directed to a specific embodiment of this invention, it is to be understood by all skilled in the art, that any change in the form and detail shall be included within the field and scope of the same.

I claim:

1. Portable bidet adaptable to toilet bowls comprising an open container constituted by side and bottom walls, one of said side walls being slightly tapered and having a rounded top edge and said bottom wall including an orifice for providing and draining water into and from said open container; a plate comprising a section with a multiplicity of small openings and a drainage slot, which plate covers said orifice of said bottom wall; a valve coupled to said open container fixed to said bottom wall registering with said plate comprising a perforated section and a drainage slot; a sliding lever coupled to one of said side walls of said open container, which sliding lever is also coupled to said valve; a pump attached to said open container for establishing a flow of water from a water tap into said open container; and flexible connections for coupling said pump to said open container and said pump to said water tap.

2. The portable bidet of claim 1, further including an overflow registering with said tapered side wall to said open container.

3. The portable bidet of claim 2, further including a connecting cable fixed by one of its ends to said sliding lever and by the other of its ends to said valve.

4. The portable bidet of claim 3, wherein said valve comprises a valve body divided into two side-line cylindrical and square angular in shape chambers including open upper and lower ends, said open upper ends registering respectively with said section with a multiplicity of small openings and said drainage slot, and said open lower ends emptying one next to the other through conical perforations to a joint drainage opening; a movable throttle included in said valve body, said movable throttle having one end portion inside said cylindrical chamber and having other end portions opposite to said one end portion, registering with said joint drainage opening; a sliding elevating plate attached to said valve body and coupled by one of its ends to said connecting cable; a supporting ring fixed to said joint drainage opening, said ring supporting said sliding elevating plate; and a water inlet groove included in said cylindrical chamber for providing water into said valve body.

5. The portable bidet of claim 4, wherein said movable throttle has its said end portion opposite to said end portion of same included in said cylindrical chamber, as an irregularly shaped portion formed by two truncated cones joined by their largest diameter bases; and wherein said movable throttle interiorly includes a spring and a bolt, which bolt has a portion protruding from said movable throttle being slightly introduced in said supporting ring.

6. The portable bidet of claim 5, wherein said sliding elevating plate includes its portion nearer to the coupling with said connecting cable, as a beveled portion.

7. The portable bidet of claim 3, further including a water inlet tube fixed to said open container and coupled by one end to one of said flexible connections and by the other end to said valve.

8. The portable bidet of claim 3, wherein said pump comprises a housing; a pivoting pedal supported by said housing; bellows coupled by one of their ends to the ends of said pivoting pedal; parallel tubes coupled to the ends of said bellows opposite to those ends coupled to said pivoting pedal, one of which parallel tubes is coupled to said flexible connection attached to said water tap and other of which parallel tubes is coupled to said flexible connection attached to said open container; and an air chamber fixed to said parallel tube coupled to said flexible connection attached to said water tap.

9. The portable bidet of claim 8, wherein said pump further includes an inlet water flow regulating valve fixed in the coupling of said parallel tube with said flexible connection attached to said water tap.

10. Portable bidet adaptable to toilet bowls comprising an open container constituted by side and bottom walls, one of said side walls being slightly tapered and having a rounded top edge and said bottom wall including an orifice for providing and draining water into and from said open container; an overflow registering with said tapered side wall; a plate comprising a section with a multiplicity of small openings and a drainage slot, which plate covers said orifice of said bottom wall; a pump attached to said open container for establishing a flow of water from a water tap into said open container, said pump comprising a housing; a pivoting pedal supported by said housing; bellows coupled by one of their ends to the ends of said pivoting pedal; parallel tubes coupled to the ends of said bellows opposite to those ends coupled to said pivoting pedal; an air chamber and an inlet water flow regulating valve fixed to one of said parallel tubes; flexible connections for coupling said parallel tube including the air chamber and the inlet flow regulating valve to said water tap and for coupling another of said parallel tubes to said open container; and a water inlet tube fixed to said open container coupled by one end to said one flexible connection coupling said open container to said parallel tube and by the other end to said plate with a section with a multiplicity of small openings and a drainage slot.

11. Portable bidet adaptable to toilet bowls comprising an open container constituted by side and bottom walls; one of said side walls being slightly tapered and having a rounded top edge and said side walls including an inner step forming a support portion to rest over the top edge of said toilet bowls and said bottom wall including an orifice for draining water from said open container; an overflow registering with said tapered side wall; and a removable plug located in said orifice of said bottom wall.

12. A portable bidet adaptable to toilet seats, as described in claim 1, wherein the water is supplied directly from the faucet of a washbowl through an automatic discharge valve having one inlet directly connected to said faucet and two outlets, one of said outlets discharged into the said washbowl when the faucet is open but the bidet water regulating valve is closed, and the second outlet which opens when the first said outlet closes, upon opening the bidet water regulating valve, thus permitting water to flow from the faucet to the bidet.

13. A portable bidet adaptable to toilet seats as according to claim 12, wherein the automatic discharge valve comprises a hollow tubular element in which a double piston travels, one piston being of larger diameter than the other, each working in a cylinder of its own diameter, the two said pistons being joined by a rod which reciprocates through a circular aperture which communicates the two chambers; the chamber which is

of smaller diameter ends in a conical section against into which said smaller piston seats in its closed position; the smaller diameter chamber contains an outlet passage in its lower sidewall so disposed that when the corresponding piston is in its full open position there is direct communication through the valve inlet, an inlet chamber which communicates with the larger diameter cylinder, and the smaller diameter cylinder, to the outlet; this condition occurs when the bidet water regulating valve is closed, when the said bidet water regulating valve is opened, the water flow from the faucet which is connected to the inlet of the automatic discharge valve will push said larger diameter piston of the said automatic discharge valve in its passage toward the bidet, and hence will draw the smaller diameter piston to its closed position.

14. A portable bidet adaptable to toilet seats, according to claim **1**, wherein said larger diameter piston comprises a pair of peripheral annular shoulders integral with said piston, and on the shoulder nearer to the smaller diameter piston has a plurality of holes parallel to the axis of the piston and distributed around same, as well as a pair of stop pins which prevent the piston from reaching the backwall of its chamber; the other ring likewise includes holes; and in its farthest forward position said piston does not reach the inner end of the valve body, which body or valve end wall is provided with an outlet orifice connected to the hose leading to said bidet through the aforementioned bidet water regulating valve.

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