Sept. 12, 1939. J. S. JUDELL 2,173,064

PLUMBING FIXTURE

Filed Sept. 28, 1937 2 Sheets-Sheet 1

Fig. 1.

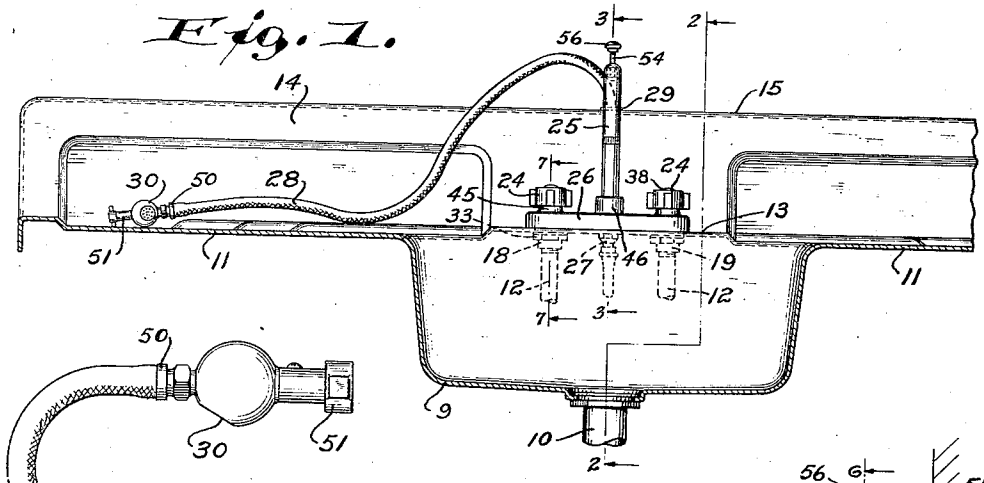


Fig. 2.

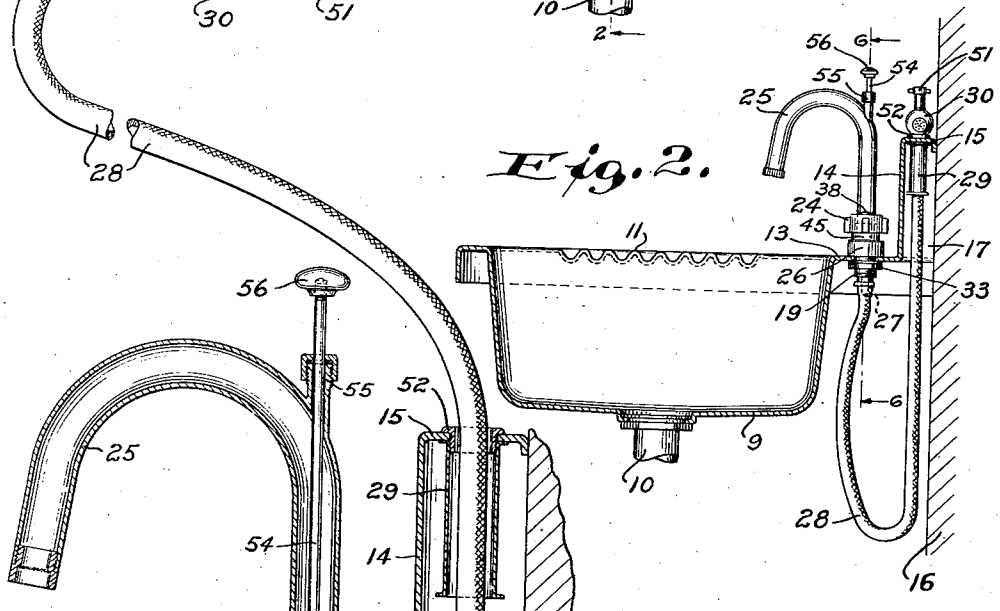
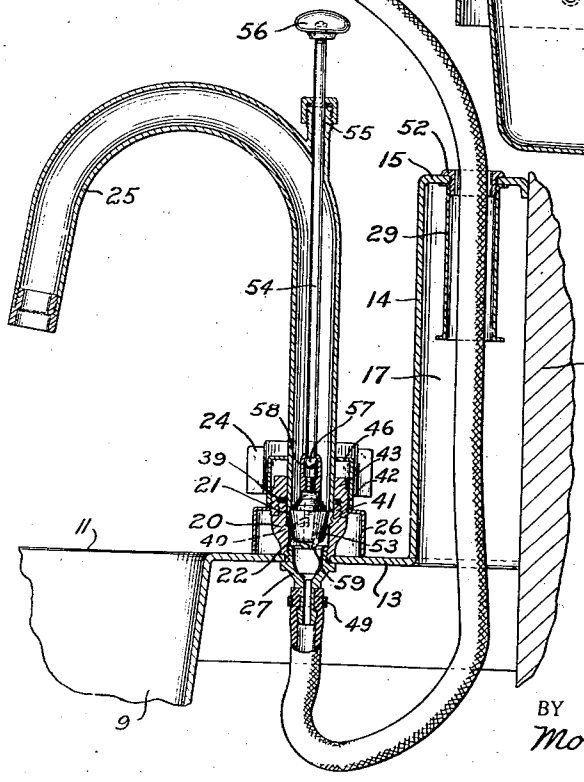


Fig. 3.



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Fig. 4.

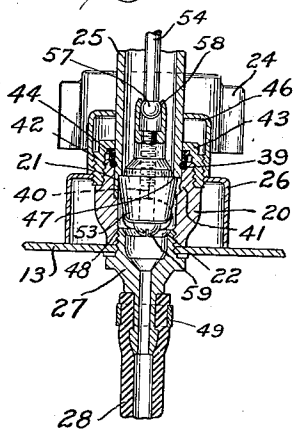


Fig. 5.

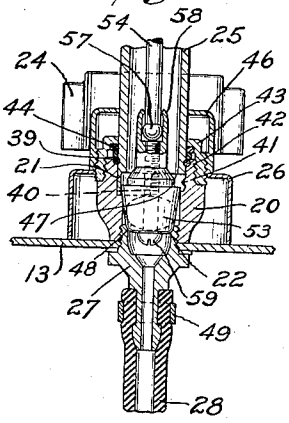
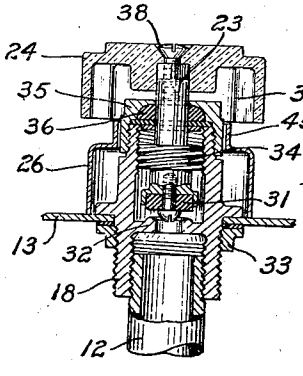


Fig. 6.

Fig. 7.



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PLUMBING FIXTURE

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Application September 28, 1937, Serial No. 166,138

3 Claims. (Cl. 4—187)

The present invention relates generally to improvements in the art of dispensing liquids, and relates more particularly to various improvements in the construction and operation of plumbing fixtures especially applicable to kitchen sinks or the like, for the purpose of controlling diversified dispensation of water from one or more supply lines to various portions of the sink structure.

Generally defined, an object of my present invention is the provision of an improved plumbing fixture assemblage which is simple and compact in construction, neat and attractive in appearance, and highly efficient and flexible in use.

It has long been customary to utilize so-called combination fixtures for the purpose of dispensing hot or cold water, through a common swing spout disposed between the valves which control the delivery of the water from the supply lines in regulated quantities. Most of these prior fixtures are formed of irregular brass castings, and in order to present a neat and finished appearance, the rough castings must be dressed and plated at all exposed surfaces, and the packing glands coacting with the valve actuating stems must be likewise finished. This mode of finishing these plumbing fixtures is both tedious and costly, thereby necessarily making the final product rather expensive, and also making the fixtures most difficult to clean because of the irregular nature of the exposed highly polished surfaces thereof.

It is also desirable, when utilizing such combination plumbing fixtures in connection with kitchen sinks or the like wherein dish washing is a frequent occurrence, to have some means for effecting rinsing of the dishes or other objects disposed upon the drain boards of the sink. This has been done by attaching one end of a rubber hose directly to the outlet end of the faucet spout, and by providing the opposite end of the hose with a spray head which can be moved freely to any portion of the sink structure to rinse the dishes and other objects resting thereon. The attachment of such a rinsing or spraying hose is rather difficult and inconvenient, and the hose which is obviously quite unsightly, must be disconnected whenever it is desired to spout water directly from the faucet. This prior expedient for spraying or rinsing is therefore relatively objectionable both because of its difficulties in use and its undesirably unpleasant appearance.

The present invention therefore contemplates provision of an improved faucet assemblage, especially of the combination type, wherein the rough and irregular surfaces of the valves and other portions of the fixture are thoroughly concealed by a neat but durable and relatively inexpensive shield or covering, which may be conveniently applied or removed for cleaning and inspection of the concealed parts.

The present invention also contemplates the provision of a simple, compact, neat and most efficient rinsing attachment for faucets or the like, which while being associated directly with the faucet, will permit unobstructed and unimpaired normal use thereof.

Some of the more specific objects and advantages of my present improvement are as follows:

To provide an attractive combination faucet and spray fixture which can be manufactured at moderate cost, and which can be conveniently installed, inspected and operated.

To provide an extremely simple but durable swing spout faucet assemblage having neat appearance and which is capable of being readily cleaned.

To provide an improved valve assembly for faucets or the like, which is normally well protected, but which is also conveniently accessible for adjustment or renewal of parts.

To provide an improved spray attachment for sink faucets or the like, which is normally concealed beneath the sink but is nevertheless conveniently accessible for use.

To provide a rinsing appliance which is highly flexible in use, and which in no manner interferes with the normal use of a sink with which the appliance is associated.

To provide an improved combination fixture embodying interchangeably usable or operable parts, such as a spout for normally discharging water in the form of a solid jet directly into the basin of a sink, and a shower head for delivering the water in the form of a spray toward any portion of the sink.

To provide an improved faucet structure wherein water from several sources may be mixed and thereafter quickly and conveniently diverted and dispensed through either of several outlets.

These and other specific objects will be apparent from the following detailed description.

A clear conception of embodiments of the several features constituting the present improvement, and of the mode of constructing and of using plumbing fixtures built in accordance with the invention, may be had by referring to the drawings accompanying and forming a part of this specification wherein like reference char-

acters designate the same or similar parts in the various views.

Fig. 1 is a longitudinal vertical section through a fragment of a relatively standard kitchen sink, showing a front view of one of the improved plumbing fixtures applied to the sink and having the rinsing spray nozzle and hose withdrawn from normal concealment;

Fig. 2 is a transverse vertical section through the sink taken along the line 2—2 of Fig. 1, and showing an end view of the improved fixture with the rinsing spray nozzle and hose positioned as when not in use;

Fig. 3 is an enlarged transverse vertical section through the center of the improved fixture, taken along the line 3—3 of Fig. 1, and showing the flow diverting valve in upper position so as to divert the flow through the rinsing hose;

Fig. 4 is a further enlarged central transverse vertical section through the diverting valve portion of the improved fixture, showing the valve in the same position as in Fig. 3;

Fig. 5 is a similar section through the diverting valve portion of the improved fixture, showing the valve in lower position so as to divert the flow through the swing spout;

Fig. 6 is an enlarged central longitudinal section through the improved fixture, the section being taken along the line 6—6 of Fig. 2; and

Fig. 7 is a similarly enlarged transverse central section through one of the water supply control valves, the section being taken along the line 7—7 of Fig. 1.

While the invention has been shown and described herein as being specifically embodied in a special type of faucet assemblage especially adapted for use in connection with a kitchen sink, it is not the intent to thereby unnecessarily restrict the scope, since some of the novel features are obviously more generally applicable to plumbing fixtures for other types of liquid dispensing and wash bowl assemblages.

Referring to the drawings, the relatively standard sink assembly shown in Figs. 1 and 2, comprises in general a sink having a basin 9 provided with a lower drain 10 and also having drain boards 11 for dishes or other objects formed integral with the opposite ends thereof, and hot and cold water supply pipes 12 extending beneath an integral portion 13 of the sink directly in back of the basin 9. The extreme rear portion or back wall 14 of the sink is also formed integral with the drain boards 11 and with the portion 13, and the upper part of the sink wall 14 has a flat horizontal deck 15 adapted to coact with a partition or building wall 16 and providing a vertically elongated concealed unobstructed space 17 in back of the supply pipes 12, 12.

The present improved plumbing fixture which is shown generally in Figs. 1 and 2, and more in detail in Figs. 3 to 7 inclusive, comprises in general laterally spaced hot and cold water supply control valves 18, 19 associated with the pipes 12 and formed integral with a common discharge conduit 20 having upper and lower outlet openings 21, 22 respectively disposed centrally thereof; an upwardly extending stem 23 and a handle 24 secured to each stem 23 for opening and closing the corresponding valve 18, 19; a swing spout 25 extending upwardly from and swingably attached to the conduit 20, and communicating with the upper outlet opening 21; a removable sheet metal concealing cover 26 for the valves 18, 19 and for the conduit 20 resting upon the sink portion 13, and normally held in position by the handles 24 and spout 25; an outlet fitting 27 coacting with the lower surface of the sink portion 13 and with the central portion of the conduit 20 and communicating with the lower outlet opening 22; a flexible hose 28 having one end secured to the clamping fitting 27 and extending through a guiding sleeve 29 attached to the upper sink deck 15; a spray nozzle or head 30 carried by the opposite end of the hose 28; and means for interchangeably connecting the outlet openings 21, 22 with the interior of the conduit 20 so as to effect delivery of water either from the spout 25 or from the spray head 30.

The interiors of the main hot and cold water supply valves 18, 19, are of relatively standard construction, and each of these valves has a vertically movable valve disk 31 confined within a socket in the lower end of its stem 23 and cooperable with a fixed seat 32 formed integral with the corresponding valve casing, to control the delivery of water from the adjacent supply pipe 12 into the common conduit 20. The valve casings which are cast integral with the opposite ends of the conduit 20, are adapted to be fastened to the sink portion 13 by means of clamping nuts 33, and the stems 23 are provided with enlarged threaded medial portions 34 having screw thread coaction with internal threads formed integral with the valve casings. Each main valve casing is also provided with a threaded removable upper closure cap 35 which is pierced by the adjacent stem 23, and which carries and encloses a packing 36 adapted to coact with the enlarged portion of the stem 23 when the valve is open so as to prevent leakage. The valve casings and conduit 20, and the packing retaining caps 35 are formed of cast metal, preferably brass, and the exteriors of these parts need not be machined or otherwise dressed or finished.

The valve actuating handles 24 may be formed of moulded hard material such as "Bakelite," and are provided with internal annular recesses 37, being detachably secured to the square upper ends of their respective valve stems 23 by means of screws 38. The swing spout 25 which extends upwardly from the medial portion of the discharge conduit 20, is preferably plated or otherwise externally finished, and has a reverse bend at the upper portion thereof in order to direct the jet delivered therefrom, into the sink basin 9. The lowermost portion of the spout 25 is snugly fitted for limited turning within the outlet opening 21, being provided with a snap ring 39 for holding the spout in place, and the rear part of the supporting end of the spout 25 is cut away to provide spaced abutments 40 which are cooperable with a central stop projection 41 formed integral with the conduit 20 to limit the turning movement of the spout about its vertical axis. The medial upper portion of the conduit 20 is provided with an integral externally threaded eleeve 42 within which the supporting end of the spout 25 is rotatably adjustable, and an internally and externally threaded spout retaining nut 43 coacts with this sleeve 42 and confines a packing ring 44 thereagainst so as to prevent leakage.

The removable sheet metal concealing cover 26 for the valves 18, 19 and for the conduit 20, is externally finished as by plating and polishing, and has integral annular upwardly extending flanges 45 which are normally disposed within

the annular recesses 37 of the handles 24, to thereby totally enclose the packing caps 35 as well as the main valves and the conduit 20. These flanges 45 are preferably of relatively large external diameter in order to enhance the stable and massive external appearance of the valve assemblages, and the medial upper portion of the cover is provided with a circular opening of sufficient size to permit the cover 26 to be placed downwardly over the spout retaining nut 43 and to be brought into snug engagement with the sink portion 13. The cover 26 is normally clamped in this position by means of an externally plated and polished retaining cap 46 having screw thread coaction with the exterior of the nut 43. Although the escutcheon cover 26 is thus normally firmly clamped in position, it may be readily removed to permit access to the main valves and to all other parts of the faucet assemblage, by merely removing the handles 24 and the cap 46 which normally hold the cover in place.

The lower interior of the supporting end of the swing spout 25 is provided with an annular diverter valve seat 47 at the upper outlet opening 21, and the fitting 27 which is disposed coaxial with the faucet 25 is provided with another diverting valve seat 48 at the lower outlet opening 22. The spray dispensing hose 28 is attached to the fitting 27 beneath the sink portion 13 and may be retained thus attached by means of a lock ring 49, and the spray head 30 may be similarly attached to the opposite movable end of the hose 28 by a retainer ring 50. The spray head 30 may be of any desired type, and is preferably provided with a handle 51 for effecting convenient manipulation of the spray nozzle, and when the head 30 is not in use, the hose 28 will be concealed within the free space 17 in back of the sink. The vertical hose guiding sleeve 29 is attached to the upper deck 15 of the sink within the space 17 by means of an attaching and clamping ring nut 52, and the hose 28 will slide freely through this sleeve 29.

The water from within the conduit 20 may be interchangeably diverted either through the outlet opening 21 to the spout 25, or through the outlet opening 22 to the spray head 30, by means of a single diverter valve 53 which may be of the ordinary ball type. The valve 53 is movably supported by means of a vertical rod 54 passing centrally through the rear branch of the spout 25 and having frictional engagement with a gland 55 carried by the medial portion of the swing spout. The upper end of the rod 54 is provided with an actuating grip handle 56, and the lower extremity thereof has a spherical head 57 which is engaged by the inwardly turned upper end of a sleeve 58 to the lower end of which the valve 53 is removably attached, by means of a screw 59. The upper portion of the diverter valve 53 is adapted to coact with the upper seat 47 on the spout 25 to control the flow from the conduit 20 through the outlet opening 21 as shown in Fig. 5, and the lower portion of the same valve 53 is adapted to interchangeably coact with the lower seat 48 on the fitting 27 to control the flow from the conduit 20 through the other outlet opening 22 as shown in Fig. 4. This interchangeable operation may obviously be effected by merely sliding the rod 54 vertically with the aid of the handle 56.

The manner of attaching the improved plumbing fixture to a sink such as shown in Figs. 1, 2 and 3 should be clearly apparent from the foregoing description of the details of construction of the assemblage, and when the fixture has been properly applied to a sink, either, or both of the main valves 18, 19 may be opened to admit water to the common conduct 20. The hot and cold water will mix within the conduit 20 and will be delivered through either of the outlets 21, 22, depending upon the position of adjustment of the diverter valve 53. If the actuating rod 54 is raised to position the valve 53 against the upper seat 47 as shown in Fig. 4, the mixture of hot and cold water, or either, will flow through the outlet opening 22 into the hose 28 and from thence through the spray head 30. The spray head 30 may be readily moved to any portion of the sink structure and the spray may be delivered in any desired direction with the aid of the handle 51. If the diverter valve 53 is moved downwardly into engagement with the lower seat 48, as shown in Fig. 5, then the flow of water will be through the upper outlet opening 21 and through the swing spout 25, the water being delivered downwardly in the form of a jet into the basin 9 of the sink. The swing spout 25 may be conveniently adjusted within the limits fixed by the abutments 40, to deliver the jet of water into various portions of the basin 9, in the same manner as is possible with the ordinary swing spout faucet.

If it becomes desirable to replace the valves 31 or the valve 53, the closure cover 26 may be conveniently removed by merely releasing the retaining cap 46 and by removing the handles 24. The nuts 35, 43 will then be conveniently accessible, and upon removal of the former, the valves 31 may be readily removed, whereas removal of the latter will permit convenient removal of the spout 25 and of the diverter valve 53.

From the foregoing description it will be apparent that the present invention provides a simple faucet and spray assemblage, which is neat in appearance, durable in construction, and highly flexible in use. Either the spout 25 or the spray head 30 may be used interchangeably without disturbing the position of the other of these elements, and interchangeable use of the spout 25 and of the spray head 30 in no manner affects the normal operation of the main valves. The escutcheon cover 26 produces an extremely neat appearance and also provides an assemblage which can be kept thoroughly cleaned at all times. This closure cover does not however prevent convenient access to all elements of the assemblage, and the cylindrical flanges 45 add greatly to the general appearance of the faucet. The diverter valve 53 may obviously be conveniently manipulated with the aid of the handle 56, and the major portion of the rod 54 is concealed within the spout 25 but does not interfere with normal delivery of water therethrough. The closure cover 26 moreover thoroughly conceals the rough castings which are disposed therebeneath, and protects the faucet against possible injury. Since this cover is preferably formed of sheet metal, it may be readily replaced when damaged, thereby restoring the normal appearance to the assemblage. While the spray head 30 is at all times conveniently accessible for use, the hose 28 is normally concealed beneath the sink, and this hose may be readily replaced when it becomes no longer fit for use. The improved faucet has proven highly successful in actual

commercial use, and can be conveniently manufactured for sale at moderate cost.

It should be understood that it is not desired to limit the invention to the exact details of construction and to the precise mode of operation herein shown and described, for various modifications within the scope of the claims may occur to persons skilled in the art.

I claim:

1. A plumbing fixture comprising, a pair of laterally separated valve casings rigidly connected by an integral transverse conduit, each of said casings having outer and inner alined openings and the mid-portion of said conduit also having outer and inner alined openings, a liquid supply pipe attached to each of said casings and communicating with the inner opening thereof, a valve in each of said casings operable by a handle and a stem passing through the outer opening thereof, a spray connection attached to said conduit and communicating with said inner conduit opening, a spout attached to and communicating with said outer conduit opening, a valve in said conduit and being adjustable to interchangeably divert the flow through either of said conduit openings, a rod for actuating said diverter valve extending axially through said spout, a common removable cover for said valve casings and said conduit, said cover having end openings pierced by said valve stems and normally concealed by the actuating handles thereon and also having a central opening pierced by said spout, and means associated with said conduit and said cover adjacent said spout and remote from said valves for clamping said cover in position.

2. A plumbing fixture comprising, a pair of laterally separated valve casings integrally united by a transverse conduit, each of said casings having inner and outer alined threaded openings and the center of said conduit midway between said casings also having inner and outer alined threaded openings, a liquid supply pipe secured to and communicating with the inner opening of each of said casings, a valve in each of said casings operable by a handle and a stem passing through the outer opening thereof, a spray connection secured to and communicating with the inner central conduit opening, an outwardly directed spout having an elongated straight portion attached to and communicating with said outer central conduit opening, a ball diverter valve in said conduit between said central openings and being movable to interchangeably divert the flow through either of said central openings, a thin and flexible common removable cover for said valve casings and said conduit, said cover having end openings pierced by said valve stems and normally concealed by the actuating handles thereon and also having a central opening pierced by said spout, and means adjustably attached to said conduit and coacting with said cover near said spout and remote from said valves for clamping said cover in position.

3. A sink fixture comprising, a pair of laterally separated valve casings rigidly connected by a transverse conduit, each of said casings having outer and inner alined openings and the mid-portion of said conduit also having outer and inner alined openings, a concealed liquid supply pipe communicating with each of said inner casing openings, a valve in each of said casings operable by a stem passing through the outer opening thereof, a flexible spray connection having concealed attachment to the inner conduit opening and being longitudinally movable for concealment through an opening in the sink remote from said casings and conduit, a spout attached to and communicating with said outer conduit opening, a diverter valve in said conduit between the openings therein, an actuator for said diverter valve extending axially through said spout, a common cover for said valve casings having sleeve portions pierced by said valve stems, and clamping means for said casing coacting therewith only adjacent said spout and remote from said casings.

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