

April 18, 1967

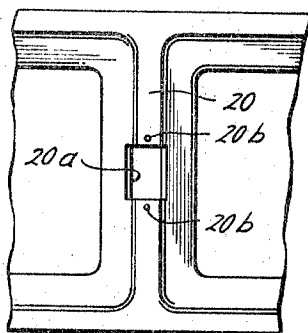
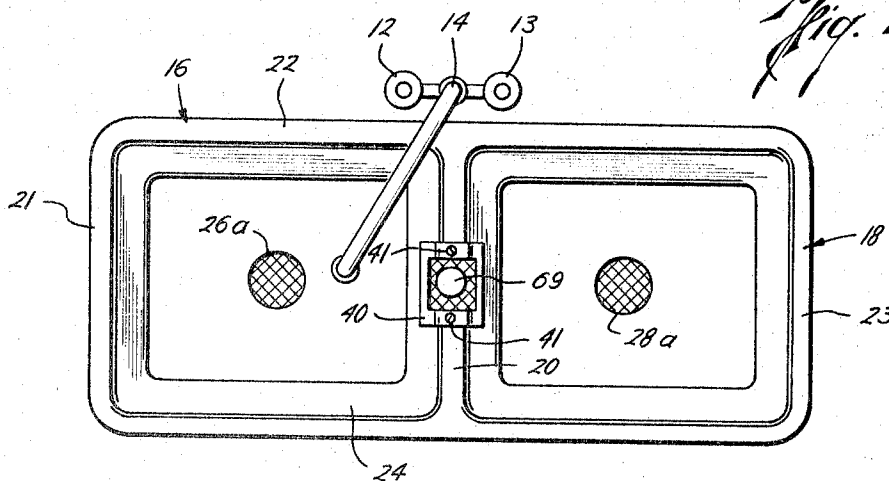
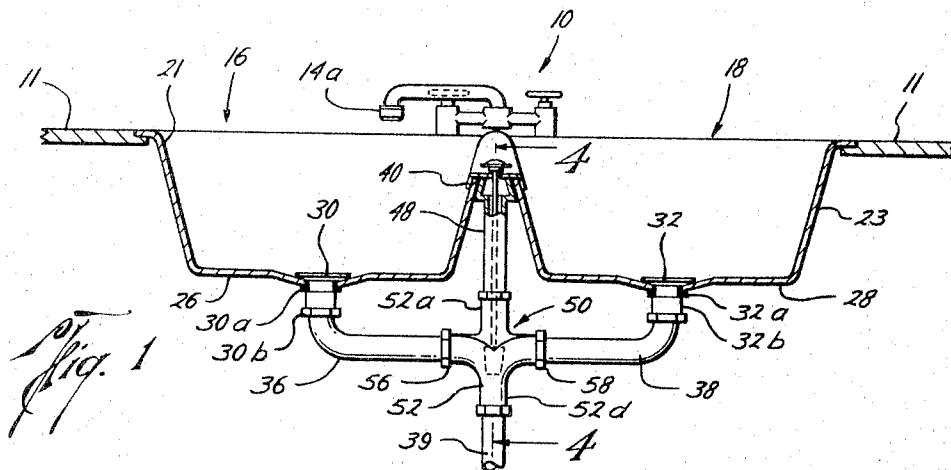
A. MINELLA

3,314,082

COMPARTMENTED SINK AND ASSOCIATED LIQUID FLOW MEANS

Filed Oct. 28, 1964

3 Sheets-Sheet 1



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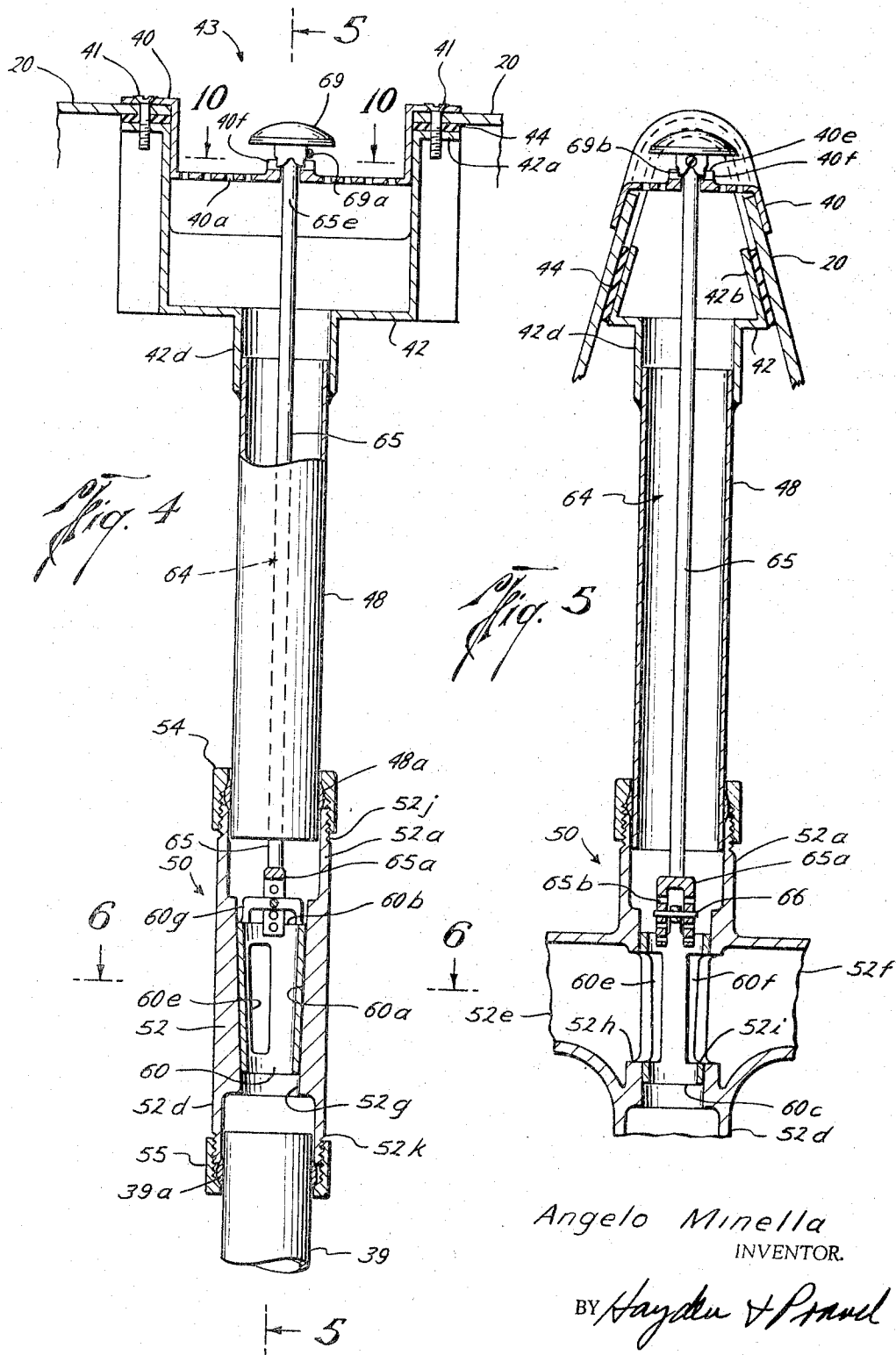
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COMPARTMENTED SINK AND ASSOCIATED LIQUID FLOW MEANS

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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

Fig. 6

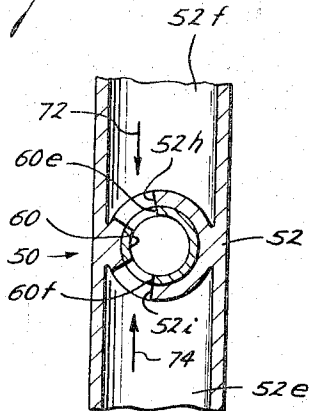


Fig. 7

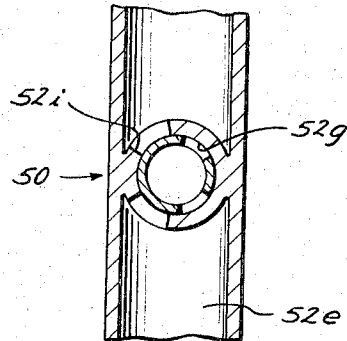


Fig. 8

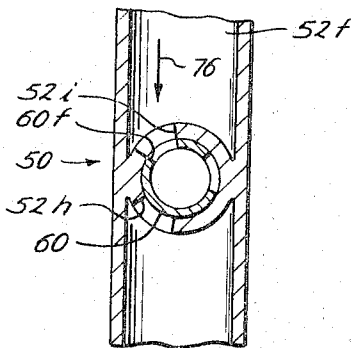


Fig. 9

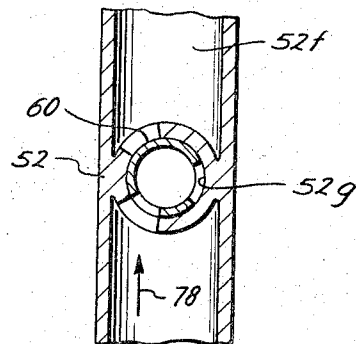
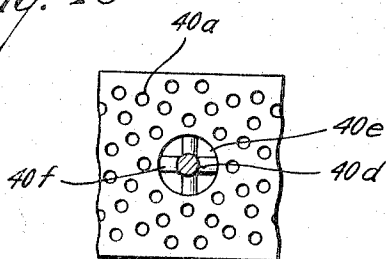


Fig. 10



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2

3,314,082

COMPARTMENTED SINK AND ASSOCIATED LIQUID FLOW MEANS

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1 Claim. (Cl. 4—194)

This invention relates to a compartmented sink and associated liquid flow means, and more particularly, to a multiple sink having means therewith defining the upper liquid level in and preventing overflow of each of a pair of adjacent compartments of the sink. The invention drains overflow liquid to a sewerage system and also regulates the drainage of liquids from each of the sinks independently of each other.

Multiple sinks are commonly found in homes and also in commercial kitchens, washaterias, and other places. Such sinks are considered popular because of the advantage of having separate containers adjacent one another. This advantage accrues to the benefit of the housewife who may wash dishes in one of a pair of double sinks and conveniently rinse the same dishes in the adjacent sink in clear water. Also, it is possible to hand wash articles of clothing in one of two sinks and to rinse the soapy residue from the clothing in the adjacent sink which is filled with clean water.

This invention provides means defining the upper liquid level in a pair of adjacent sinks and also prevents overflow of each of the sinks when the liquid level exceeds the level defined by the means of this invention. The device of this invention drains overflow liquid and also drains waste liquid from each of the sinks with drainage of either sink being independent of drainage of the other sink.

An object of this invention is to provide a new and improved double sink having overflow means therewith.

Another object of this invention is to provide a new and improved multiple sink having means therewith controlling drainage from various compartments of the sink.

A further object of this invention is to provide a new and improved multiple sink having a plurality of waste drainage openings and overflow drains with all drains connected to one sewerage pipe.

An additional object of this invention is to provide a new and improved plumbing fixture for use with a double sink which is adjustable to close or open the drain opening of either of the sinks and which also conducts overflow liquid to a sewerage system.

One object of this invention is to provide a new and improved double sink drain control mechanism mounted in close proximity to hot and cold water faucets and the water tap.

One object of the present invention is to provide new and improved means for preventing comingling of liquids in adjacent compartments of a multiple sink.

A further object of this invention is to provide a new and improved means for preventing overflow of liquid from one compartment of a multiple sink to an adjacent compartment or onto a surrounding drainboard.

Still another object of this invention is to provide a new and improved plumbing fixture controllably interconnecting a plurality of drain lines to one sewerage pipe.

An additional object of this invention is to provide a new and improved double sink drainage control device operable above the liquid level in a sink without wetting the operator's hands.

One object of this invention is to provide a new and improved multiple sink drainage device having an overflow opening connected to a sewerage pipe without crooks, bends, bows, or other obstructions to rapidly drain overflow liquids to a sewerage system.

Yet another object of this invention is to provide a new and improved multiple sink which is drained by one control.

An additional object of this invention is to provide a new and improved multiple sink having drain opening valve means which are tamper proof and which cannot be otherwise lost.

Other objects and advantages of the present invention will become more rapidly apparent from an examination of the following description and drawings wherein:

FIG. 1 is a front view of the present invention taken along a section line through the double sink and illustrating overflow means and drain opening means of the multiple sink of this invention;

FIG. 2 is a plan view of a multiple sink unit illustrating the relationship of the present invention to the hot and cold water faucet controls and the water tap;

FIG. 3 is a partial plan view of a multiple sink having an upright partition defining adjacent compartments which partition is cut out to receive overflow means therein;

FIG. 4 is a sectional view taken along the line 4—4 of FIG. 1 illustrating in detail overflow receiving means and valve means of the present invention;

FIG. 5 is a side view of the apparatus shown in FIG. 4 which illustrates further details of the overflow receiving means and valve means;

FIG. 6 is a sectional view taken along the line 6—6 of FIG. 4 illustrating one position of the valve means which drains liquids from the double sink arrangement;

FIGS. 7, 8, and 9 are sectional views similar to FIG. 6 showing operation of the valve means of this invention as liquid is drained from the double sink; and

FIG. 10 is a view of overflow receiving means and is taken along the line 10—10 of FIG. 4.

Attention is directed to FIGS. 1 and 2 where there is illustrated the double sink 10 of this invention which is customarily installed in a drainboard 11 and has a hot water faucet handle 12 and cold water handle 13 which operate conventional valve means for supplying water at the proper temperature to the outlet 14a of a water tap 14. The sink 10 of this invention includes a left-hand compartment or sink 16 and a right-hand compartment 18 which are defined by an upright partition 20 therebetween and relatively close to the water tap 14 to permit the end 14a of the tap to be moved over the partition 20 to deliver water into either of the sinks 16 or 18. The sink includes end walls 21 and 23 and a back member 22 which is opposite a front member 24.

Each of the sinks 16 and 18 has a bottom 26 and 28, respectively, and each bottom includes a centrally located waste opening 26a and 28a, respectively. Strainer means indicated at 30 and 32 are placed in each of the waste openings 26a and 28a, respectively, with the strainer means preferably including a perforated disc or the like which drains liquid therethrough while collecting solid matter in the liquid. The strainer means 30 and 32 each include a seal member 30a and 32a conforming with the openings in the bottom of the sinks to provide a leak-proof connection for associated pipe fittings 30b and 32b, respectively.

It should be observed in FIG. 1 that the openings in the bottom of each sink are somewhat depressed so that the strainer means placed therein and extending thereabove do not extend above the plane of the bottom and trap waste liquid in the sinks.

Drain means indicated at 36 and 38 are communicated with the strainer means 30 and 31, respectively, with the drain means extending toward one another for communication with a waste trap and attached sewerage pipe 39 by way of a valve which will be explained.

Attention is directed to FIG. 3 which shows the upright partition 20 as having a centrally located cutout portion

3

20a and a pair of bolt holes 20b which are located on the partition adjacent the cutout opening for mounting overflow receiving means 43 of this invention. The overflow means 43 is illustrated in plan view in FIG. 2 as including a contoured mounting plate 40 which is attached to the sink 10 by a pair of bolts 41 extending through the bolt holes 20b for positioning the mounting plate 40 in the cutout 20a.

The overflow means 43 is shown in FIG. 4 as including the mounting plate 40 which positions a group of perforations or openings 40a in the contoured mounting plate 40 in communication with the chamber of the adapter 42 and unrestricted conduit means 48 which communicate overflow liquid to the valve and sewerage system.

The adapter 42 is connected to the upright partition 20 by means of flange 42a having tapped openings which is preferably held in place by the bolts 41 which engage the openings and pull the flange 42 snugly against the upright partition 20 with a seal member 44 placed therebetween. The seal member 44 preferably abuts the adapter 42 along the flange 42a as shown in FIG. 4 and also contacts the sloping side walls 42b shown in FIG. 5.

The overflow receiving means 43 receives overflow liquid through the openings 40a in the mounting plate 40 fitted within the notched cutout 20a in the partition 20 and the overflow is drained downwardly into the adapter 42. The overflow liquid is directed by the adapter to a drain connection 42d which opens downwardly and is connected to an overflow conduit 48. The overflow conduit 48 extends downwardly and is engaged by a valve indicated generally at 50 which valve also includes port means permitting connection to the drain means 36 and 38 as shown in FIG. 1.

The valve means 50 includes a valve body 52 which has an upwardly opening connective fitting or port 52a and a downwardly opening, axially aligned connective fitting 52d with alignment of the two parts being more clearly shown in FIG. 4. Additionally, port means are indicated in FIG. 5 at 52e and 52f which are adapted to be connected to the drain means 38 and 36, respectively. The valve housing 52 also has a slightly tapered passage 52g which communicates the overflow inlet 52a with the sewerage drain 52d and the wall defining the tapered passage has a pair of ports 52h and 52i in it which open toward the drain inlet means 52e and 52f, respectively.

The valve body 52 is connected to the overflow conduit 48 by means of a lock nut 54 which bears against an annular bead 48a formed on the exterior of the overflow pipe 48 with the bead being clamped against the annular end face of the fitting 52a. The locking member 54 is screwed down tightly against the bead 48a and forms a leak-proof seal with the connective member 52a upon engaging a set of threads 52j formed about the connective fitting 52a. In like manner, the waste trap and sewerage pipe connection 39 also includes an annular bulge or bead 39a which is clamped by a threaded lock member 55 engaged with a set of threads 52k about the cylindrical fitting means 52d. The drain means 36 and 38 are likewise connected to the valve indicated generally at 52 by threaded lock members 56 and 58, respectively, shown in FIG. 1 to further achieve leak-proof connection with the valve means 50.

Overflow liquid is drained into the overflow pipe 40a, port 52a, the tapered passage 52g and through the sewerage connection 52d. Waste liquid may be drained from either compartment 16 or 18 of the sink through the strainers 30 or 32, respectively, drain means 36 or 38, respectively, and into the ports 52f and 52e, respectively, and into the ports 52i or 52h of the valve body and out the drain outlet 52d. However, it would be recognized that it is desirable to control drainage from the sink compartments 16 and 18, and to this end, there is included a valve sleeve 60 which fits into the tapered passage 52g as shown in FIGS. 4 and 5.

4

The valve sleeve 60 has an outer surface 60a which fits snugly against the tapered passage 52g, and it is open at the top and bottom 60b and 60c, respectively. Further, the tapered sleeve 60 includes a pair of ports or openings 60e and 60f whose location and description will be explained in greater detail hereinafter. A yoke 60g is extended across the upper opening 60b of the valve sleeve, and the yoke 60g includes an opening adapted to receive a pin connected to the valve control means for moving or rotating the tapered valve sleeve 60 in the valve body 52.

Valve control means indicated generally at 64 include a control rod 65 placed within the overflow conduit 48 which carries a small U-shaped bracket 65a at its lower end with the bracket 65a positioned about the yoke 60g of the valve and a pin 66 is fixedly placed in pairs of aligned openings 65b formed in the bracket 65a. The bracket 65a carried by the control rod 65 may be adjusted upwardly or downwardly relative to the valve 60 by positioning the pin 66 in selected openings 65b in the bracket so that proper longitudinal placement of the control rod relative to the valve is achieved whereby the valve 60 is properly seated within the tapered passage 52g without lifting the valve from the passage to prevent leakage past the valve sleeve 60.

The control means indicated generally at 64 also includes a control knob 69 positioned above the overflow receiving means 43 with the control knob 69 including a collar and set screw arrangement 69a which clamps and holds the upper end 65e of the control rod 65. The control rod extends through an opening 40d in the contoured member 40 which is more clearly illustrated in FIG. 10. The opening 40d is surrounded by a raised surface 40e which is notched or relieved by four perpendicular grooves 40f which extend outwardly from the opening 40d. Such grooves are shown in section in FIGS. 4 and 5 as they serve as means for receiving a pair of downwardly extending ears 69b carried by the collar 69a of the control knob 69. The ears 69b provide a cam action with the raised surface 40e which slightly lifts the control knob 69 when the cam 69b engages the raised surface 40e and moves to one of the notches 40f. Through the cam action, the control knob 69 may be locked in any one of four positions which operates the control means 64 and the valve means 50 to control flow through the fixture of this invention.

Attention is directed to FIGS. 6 through 9 which illustrate in sectional view the valve means 50 of this invention and which convey further understanding of operation of the valve means 50. In FIG. 6, which is a view taken along the line 6—6 of FIG. 4, the ports 60e and 60f of the sleeve valve 60 are aligned to permit drainage from the sink compartments 16 and 18. More particularly, liquid flows from the sink compartments 16 and 18 through the drain means 36 and 38 and into the ports 52f and 52e of the valve body 52. The tapered passage 52g which encircles the valve 60 is interrupted by the vertically extending port means 52h and 52i which are shown in FIG. 6 as extending arcuately about the valve 60 with each of the ports being located symmetrically relative to the center line of the valve body and registering with the openings 60e and 60f in the valve 60. This permits drainage of liquid through the ports 52e and 52f as shown in FIG. 6 by the arrows 72 and 74 which represent the liquid drainage. The liquid is drained into the valve 60 which is open at the bottom and drains the waste liquid through the valve 50 of this invention.

FIG. 7 may be contrasted with FIG. 6 as illustrating the valve 60 rotated one-half revolution to position the ports 60e and 60f against the bore of the tapered passage 52g. Conversely, the tapered sleeve 60 blocks the inlet ports 52h and 52i in the valve body so that no liquid flows through the valve means 50.

Attention is directed to FIG. 8 in which the valve 60 has been rotated about one-quarter revolution to the right or clockwise as viewed in the drawings from the FIG. 6

5

position to position the valve opening 60f immediately adjacent the port 52i in the valve body 52 and to also position the wall portion of the sleeve 60 adjacent the opening 52h to close the opening. The arrow 76 indicates the flow of liquid from the port 52f so that liquid drainage is accomplished from only one of the sink compartments of the invention 10. By way of contrast, FIG. 9 illustrates the tapered valve 60 rotated about one-quarter revolution counterclockwise from the position illustrated in FIG. 6 which achieves liquid drainage indicated by the arrow 78 through the opposite side of the valve 50 as compared with the flow shown in FIG. 8.

Operation of the invention 10 may be explained by considering FIGS. 1 and 2 which illustrate the relationship of means for supplying hot and cold water, and the compartmented sink 10 of this invention which has means therewith for disposing of overflow liquid and also means for independently regulating drainage from each of the compartments 16 and 18 of the double sink. In its customary usage, the compartmented sink 10 of this invention may be used for any number of purposes, and one such purpose may be to wash dishes or other objects in one of the compartments and rinse the residual soap and suds from the washed objects in the remaining sink compartment. This is achieved by filling each of the compartments 16 and 18 to the desired level with water of the appropriate temperature after adjusting the control knob 69 to position the sleeve valve 60 in the position illustrated in FIG. 7. The ports or openings in the tapered sleeve 60 are closed off by the tapered passage 52g so that no liquid is drained through the drain means 36 and 38, and the sinks 16 and 18 thereabove will retain liquid as desired. The water tap 14 is moved to appropriate position above each of the sinks and the hot and cold water faucets 12 and 13, respectively, are operated to fill the sink beneath the outlet 14a to the desired level with water of the desired temperature. It will be assumed that the left-hand sink or compartment 16 is filled with clear rinse water, and the right-hand sink or compartment 18 is filled with hot water having soap added thereto for washing dishes, garments, or other objects.

The sinks 16 and 18 are used in the customary manner and retain the liquid placed in each of the separate compartments during such usage as long as the liquid level in each of the compartments does not overflow and rise above the overflow receiving means 43. On the conclusion of such normal operation, the liquid from either or both compartments 16 and 18 may be drained by operation of the control 69, and it should be noted that this is accomplished without reaching into the water and groping for plugs, rubber stoppers, or other drain opening plugs, or the like. If it is desired to drain both compartments 16 and 18 simultaneously, the control 69 is rotated about one-half revolution to rotate the sleeve valve 60 from the position illustrated in FIG. 7 to the position of FIG. 6. The position of FIG. 6 aligns the openings in the sleeve 60 with the ports in the valve body 52 and liquid is drained from each of the sinks 16 and 18 through the valve 52 and into the drain pipe 39.

Drainage of only sink 16 is accomplished by operating the control 69 to position the sleeve 60 in the valve body 52 with one of the openings of the sleeve 60 aligning with the opening 52i as shown in FIG. 8. Liquid is drained from the compartment 16 as shown in FIG. 1 through the drain opening fitting 32b, the drain means 36 and into the valve means 50. Returning again to FIG. 8, the liquid drainage flows in the direction of the arrow 76 into the sleeve 60 and flows outwardly through the open bottom 60c shown in FIGS. 4 and 5 and into the sewerage pipe 39.

Drainage of the sink compartment 18 only is accomplished in the same manner by adjusting the control knob 69 to position the rotatable sleeve 60 as shown in FIG. 9 so that liquid flow in the direction of the arrow 78 enters the sleeve 60 after passing through the strainer means 32, the drain fitting 32b, the drain means 38, and into the

6

valve body 52. The liquid drains through the open bottom 60c of the sleeve 60 and into the waste trap connected to the sewerage pipe 39.

On occasion, either of the sinks 16 or 18 may be overflowed for any of a number of various reasons, but the means of this invention disposes of overflow liquid without comingling the liquids separated in the two compartments 16 and 18 and without overflowing onto the drainboard 11. Overflow liquid from either compartment 16 or 18 is received by the overflow receiving means 43 when the liquid level advances sufficiently on either side of the upright partition 20 between the two compartments and reaches the openings 40a in the contoured mounting plate 40 so that the liquid tends to flow across the plate 40. The openings 40a in the plate 40 drain the overflow liquid into the adapter 42 received in the cutout 20a of the upright partition which is drained through the downwardly opening outlet 42d of the adapter into the conduit means 48. As more clearly shown in FIGS. 4 and 5, conduit means 48 connects to the valve means indicated generally at 40 with the overflow liquid being received by the valve 50 through the connective fitting 52a. The tapered, downwardly extending passage 52g communicates the connective fitting 52a to the fitting 52d so that the overflow liquid is funneled into the passage 52g and through the outlet connective fitting 52d. The valve 60 positioned in the valve means 50 has the open upper end 60b and open lower end 60c to communicate the waste liquid received from the overflow conduit 48 to the waste trap connection pipe 39 without regard to the position of the valve member 60. Thus, overflow of either or both of the sink compartments 16 and 18 is accommodated by the overflow receiving means 43 of this invention regardless of the setting of the control knob 69 and the consequent position of the valve 60 within the valve means 50.

The control means indicated generally at 64 may be slightly adjusted by moving the control rod 65 relative to the set screw and collar arrangement 69a carried on the knob and by adjusting the lower end of the control rod 65 and the valve yoke 60g carried on the upper end of the valve 60.

Certain alterations or modifications may be incorporated with the compartmented sink of this invention such as the inclusion of a well with the overflow receiving means 43 positioned in the partitioned cutout 20a between the two sinks. This might be achieved by simply placing a solid member extending above the level of the openings 40a in the overflow means 43 with the solid member positioned to define the wall of one or both of the sink compartments to any desired height. By this means, the overflow level of each sink compartment may be altered upwardly and the sink compartments 16 and 18 may be provided with independent or different overflow levels.

For ease of use of the overflow means of this invention, appropriate markings such as an arrow or the like may be placed on the control knob 69 and various symbols embossed or otherwise placed on the contoured mounting member 40 opposite the markings on the knob 69 to indicate operation of the valve means 50 so that rotation of the control knob 69 relative to the cam action means beneath the knob moves the markings or indicators to indicate the status of the valve 50.

The overflow receiving means 43 is preferably mounted in the upright partition between a pair of adjacent sink compartments and opens directly below into valve means 50 so that overflow liquid does not flow through plumbing restrictions which tend to back up liquid during overflow drainage and possibly cause comingling of the liquids in the two sinks or even overflowing to the drainboard 11. This, in part, relates to the rate at which liquids are added to the sinks tending to overflow the sinks and this, in turn, relates to the dimensions of the water tap 14 and the pressure within the water supply system. This may be considered in choosing an appropriate diameter for

7

the conduit means 48 and for the valve means 50 (particularly the tapered valve sleeve 60) which is conducted to receive overflow waste drainage.

It will be recognized that the compartmented sink and associated apparatus of this invention has been described with reference to a double sink which is most commonly available. However, an occasional need has arisen for sinks having three or more compartments and it will be recognized that this invention may be used with any adjacent pair of compartments in a large multiple sink. Considering a sink with three compartments, for example, a similar valve 50 connected to an overflow conduit 48 communicating with two overflow receiving means 43 located in two upright partitions defining three adjacent compartments, will serve to dispose of overflow liquid and also drain the various compartments.

Broadly, this invention relates to a compartmented sink having associated liquid overflow means therewith for defining an upper liquid level in the compartments and receiving overflow liquid exceeding the liquid level and also regulating the drainage of liquids from each of the sinks independently of each other.

What is claimed is:

A compartmented sink and associated liquid control means therefor comprising:

- (a) a sink having two compartments separated by an upright partition;
- (b) overflow means for communicating with each of said compartments arranged on the upright partition;
- (c) unrestricted conduit means connected with said overflow means and extending between said partition means for discharging overflow from either of said compartments;
- (d) each of said compartments having a waste opening therein;
- (e) conduit drain means connecting each of said waste openings with said unrestricted conduit means;
- (f) a sleeve valve positioned at the juncture of said un-

8

restricted conduit means and said conduit drain means;

- (g) said sleeve valve fitting snugly throughout its longitudinal extent within the juncture formed by said conduit drain means and unrestricted conduit means to form a seal at said juncture;
- (h) said conduit means forming a pair of ports at the juncture of said conduit drain means and said unrestricted conduit means;
- (i) said sleeve valve having a port therein;
- (j) a rod connected to the upper end of said sleeve valve and extending upwardly through said unrestricted conduit means and said overflow means whereby said sleeve valve may be moved;
- (k) means mounted on the upper end of said rod and resting on said overflow means;
- (l) said overflow means having groove means therein spaced circumferentially about said rod; and
- (m) said means mounted on the upper end of said rod having spaced ears thereon so that when said means is manually grasped and rotated said sleeve valve is lifted and rotated to align the port therein selectively as desired to open and close said conduit means of said compartments independently of each other.

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