Nov. 12, 1968 R. W. HYDE 3,410,487

FAUCET

Filed Aug. 29, 1966 5 Sheets-Sheet 1

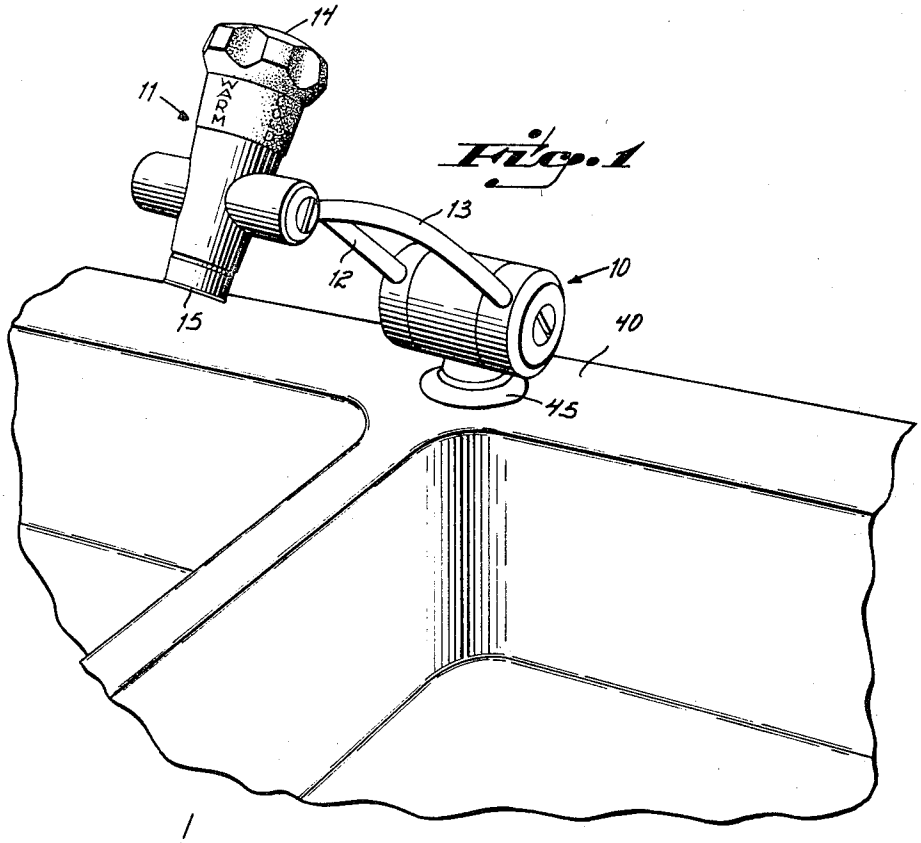

Fig. 1

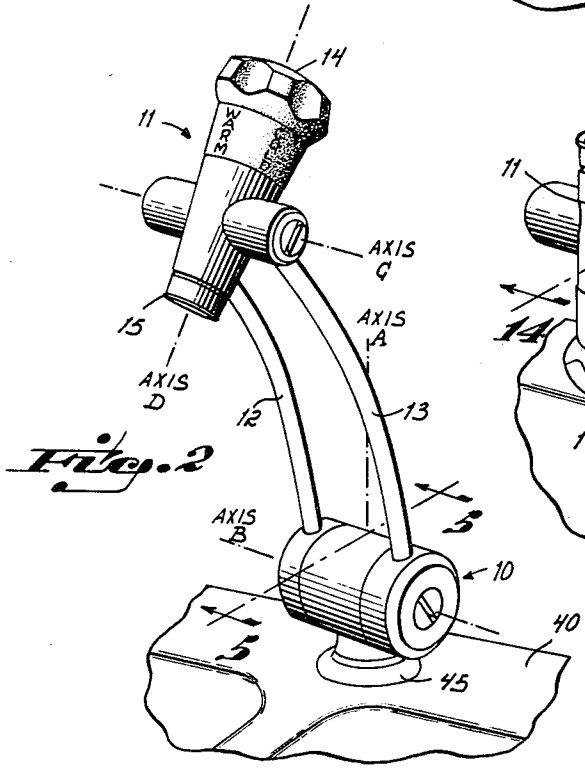

Fig. 2

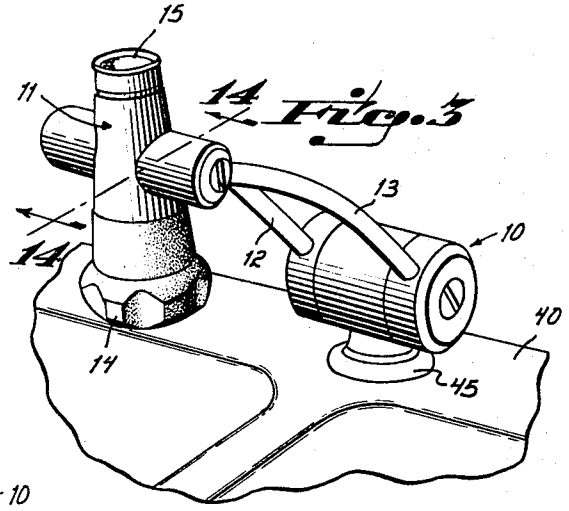

Fig. 3

INVENTOR.
Robert W. Hyde
BY
Wood, Herron & Evans
ATTORNEYS

Nov. 12, 1968 R. W. HYDE 3,410,487

FAUCET

Filed Aug. 29, 1966 5 Sheets-Sheet 2

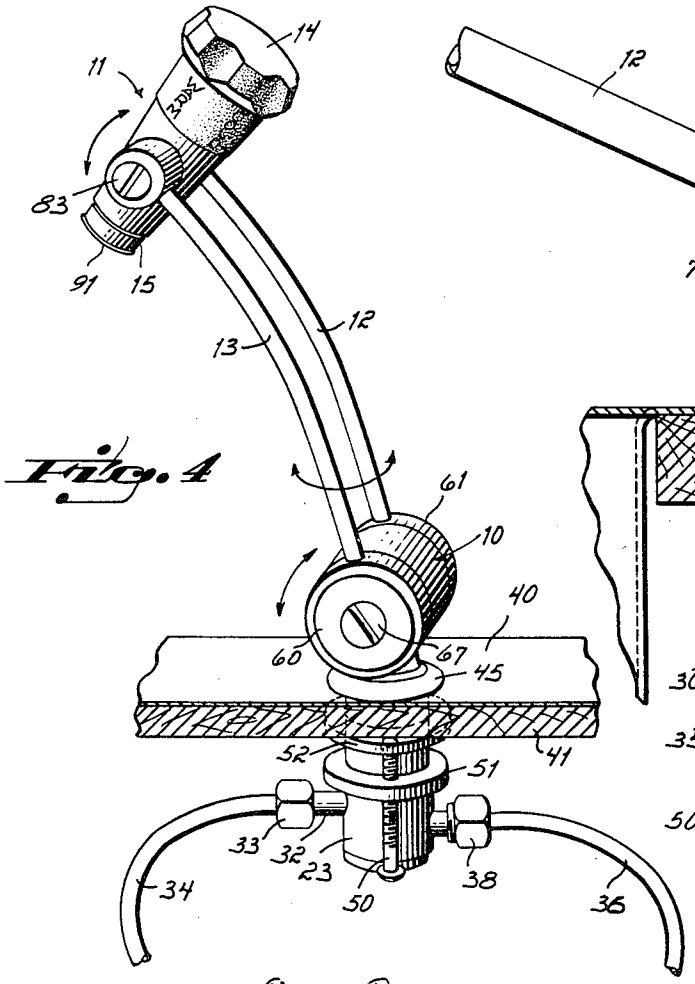

Fig. 4

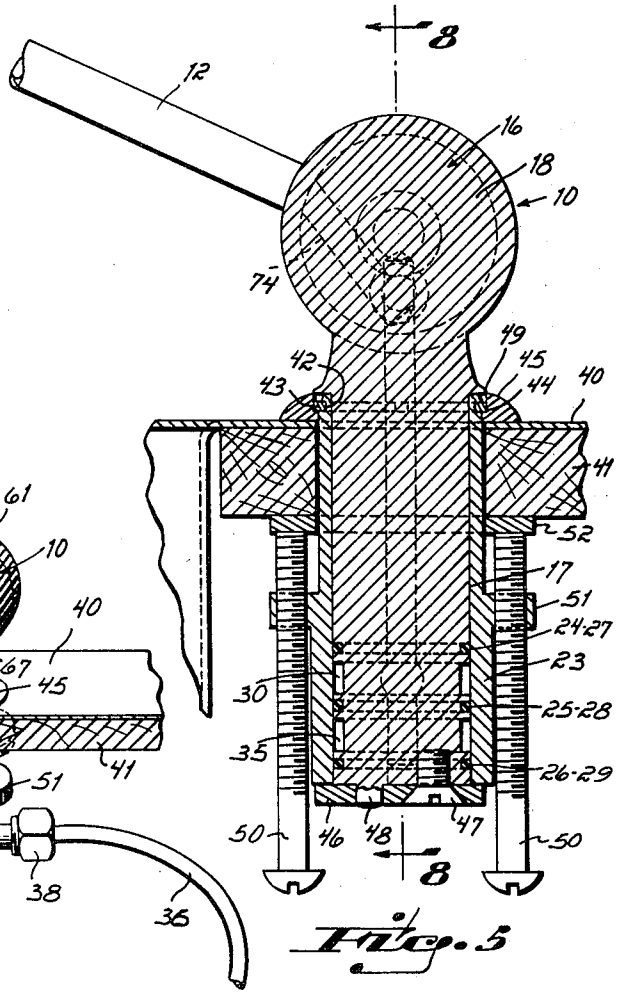

Fig. 5

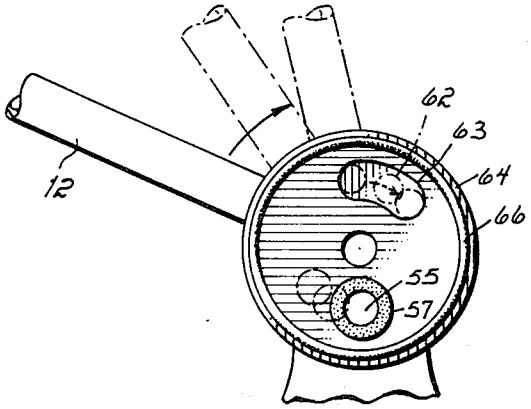

Fig. 6

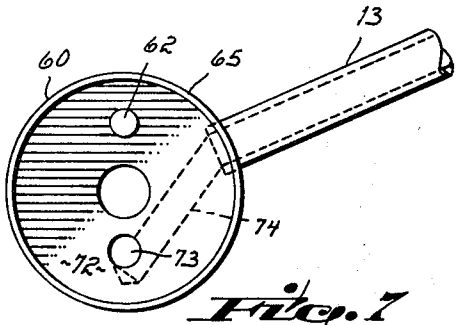

Fig. 7

INVENTOR.
Robert W. Hyde
BY
Wood, Herron & Evans
ATTORNEYS

Nov. 12, 1968 R. W. HYDE 3,410,487

FAUCET

Filed Aug. 29, 1966 5 Sheets-Sheet 3

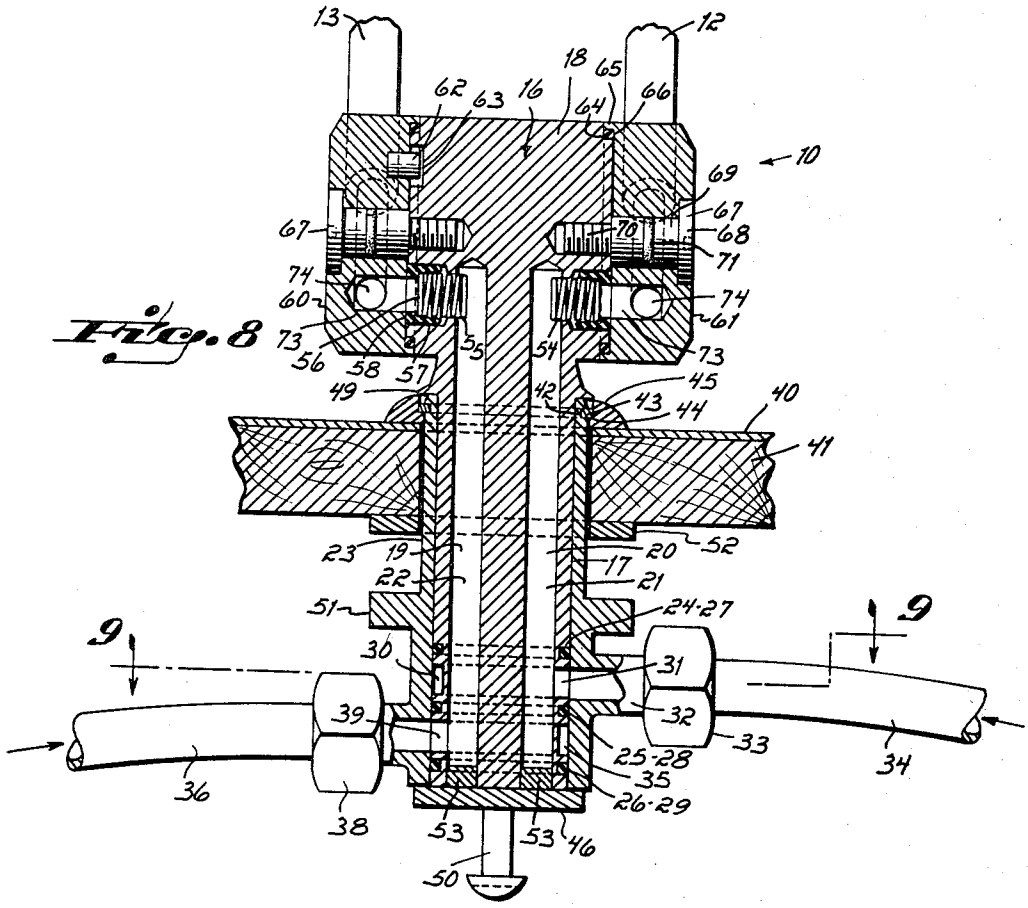

Fig. 8

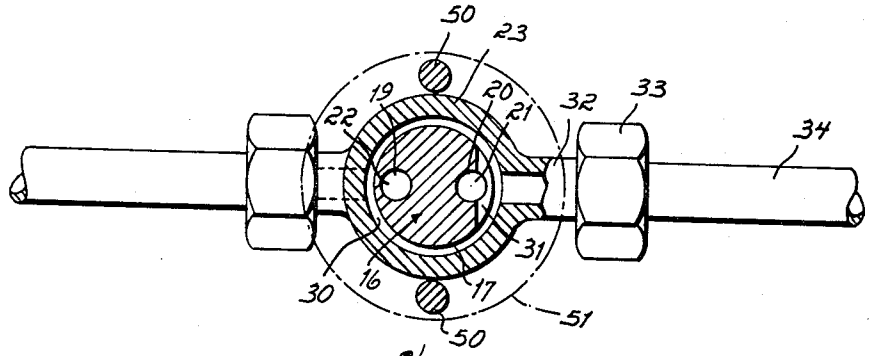

Fig. 9

INVENTOR.
Robert W. Hyde
BY
Wood, Herron & Evans
ATTORNEYS

Nov. 12, 1968 R. W. HYDE 3,410,487

FAUCET

Filed Aug. 29, 1966 5 Sheets-Sheet 4

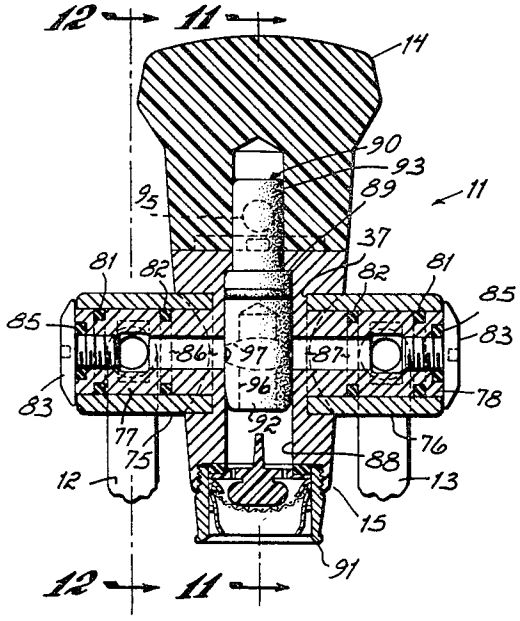

Fig. 10

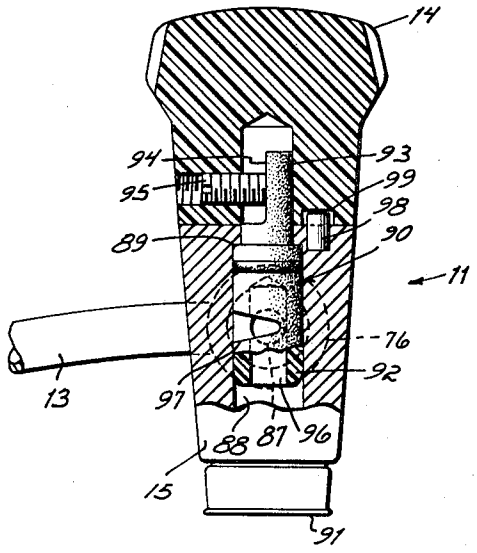

Fig. 11

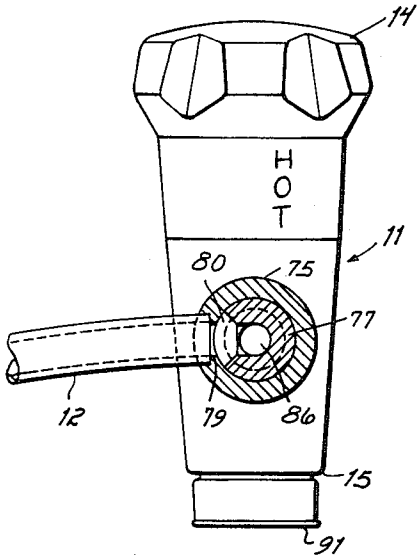

Fig. 12

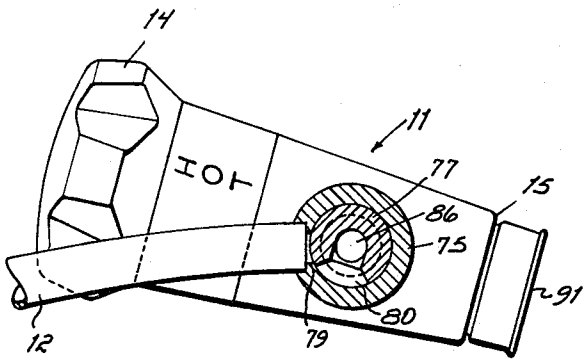

Fig. 13

INVENTOR.
Robert W. Hyde
BY
Wood, Herron & Evans
ATTORNEYS

Nov. 12, 1968 R. W. HYDE 3,410,487

FAUCET

Filed Aug. 29, 1966 5 Sheets-Sheet 5

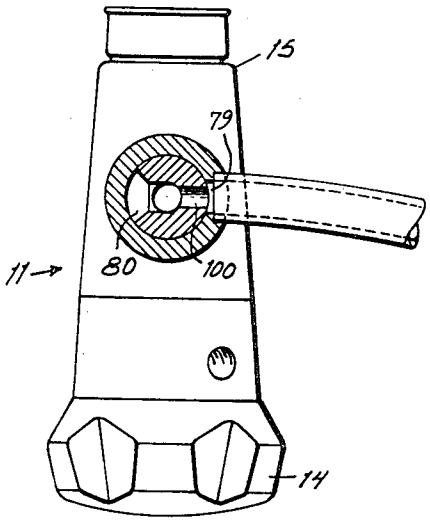

Fig. 14

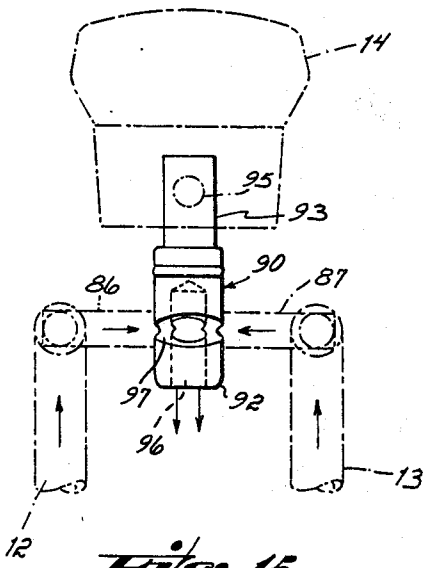

Fig. 15

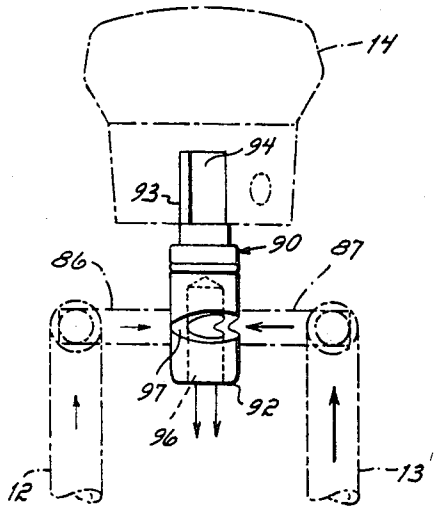

Fig. 16

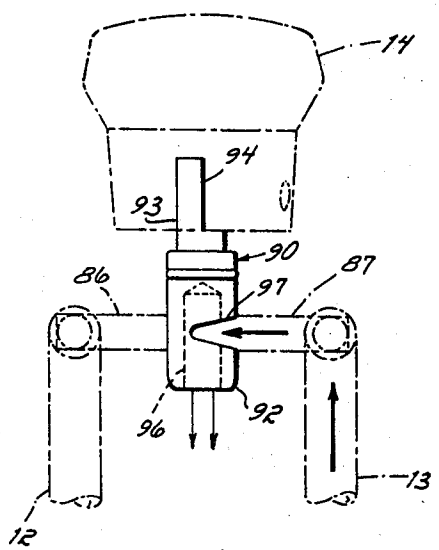

Fig. 17

INVENTOR.
Robert W. Hyde
BY
Wood, Herron & Evans
ATTORNEYS

United States Patent Office 3,410,487
Patented Nov. 12, 1968

3,410,487

FAUCET

Robert W. Hyde, Crystal River, Fla., assignor to Pryde, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed Aug. 29, 1966, Ser. No. 575,865
10 Claims. (Cl. 239—26)

ABSTRACT OF THE DISCLOSURE

A hot-cold water faucet in which the temperature of the water, the volume of the water, and the direction of the flow of water issuing from the spout may be controlled by grasping and manipulating a single knob that is on the spout. The faucet includes a base that is adapted to be mounted on the rear deck of a sink. Two lines, which may be made in one integral piece, one for hot water and one for cold water, extend from the base to the spout. Provision is made for raising and lowering the spout relative to the base which controls the volume of water issuing from the spout. Turning the knob on the spout controls the temperature of the water issuing from the spout. Provision is also made for swinging the spout from side to side about a vertical axis through the base. Additionally, provision is made for rotating the spout about a horizontal axis extending through it. Thus, by rotating the spout around its horizontal axis, by raising and lowering the spout, and by swinging the spout from side to side the stream of water issuing from the spout may be directed into any part of the sink. Additionally, the spout is arranged such that as it is rotated about its own horizontal axis to direct a stream of water such that it might otherwise escape the bowl, the stream is shut off so that no water can escape the bowl.

This invention relates to faucets and it is directed in particular to a faucet in which the temperature of the water, the volume of the water, and the direction of the flow of the water issuing from the spout are controlled by grasping and manipulating a single knob or handle.

For the purposes of this disclosure, reference is made to a faucet designed primarily for use at a kitchen sink. It will be obvious, however, that the faucet is not limited to use in this environment and that it is equally well-suited for use in other types of installations; for example, at a bathroom lavatory bowl.

The broad concept of having a single handle adapted to control more than one function of a faucet is not new, and there are a number of so-called "single lever" faucets on the market and there are a number of patents disclosing such faucets. However, in these single lever faucets the control has been limited to the varying of temperature and volume. Swing spouts have been employed for single lever faucets such that the direction of the flow of water issuing from a faucet could be changed by moving the spout from side to side in a fixed arc, but this movement was not under the control of the lever and it was limited to the fixed arc. That is, the flow of water issuing from a swing spout could not be directed into all areas of the sink bowl. Thus, in the faucet of this invention a third control is provided such that the manipulation of a single knob or handle does three things. It varies the temperature of water issuing from the faucet in a range covering the limits of the temperature of the water in the hot and cold water supply lines. It varies the volume of the water issuing from the faucet from "off" to full "on." In addition, it makes it possible to direct a stream of water into any area of the sink bowl, whether the bowl be a single one or a double one.

The faucet of this invention is adapted to be mounted upon the deck at the rear of a sink bowl, as is the common practice. The base of the faucet is adapted to be rotated about a vertical axis. In the preferred embodiment of the invention, two individual tubes, one carrying cold water, the other carrying hot, connect the base to a head. The head may be raised and lowered in an arc, the center of which is on an axis extending horizontally through the base and intersecting the vertical axis about which the base is adapted to turn. Further, in the preferred embodiment of the invention, the head carries a control knob that is adapted to be grasped and rotated about an axis that is in a plane common to the vertical axis about which the base rotates. In addition to this, the control knob is adapted to be swiveled about a horizontal axis that parallels the horizontal axis that is in the base and that is at the center of the arc through which the head is adapted to swing. Thus, there are four axes about which the parts of the faucet are adapted to rotate or swivel.

Turning the head about its own horizontal axis causes the spout part, from which water issues, to turn and, for reasons to be explained, this turning movement preferably is through more than 180° so that it is possible to turn the spout into a position in which it directs water upwardly. In this position, the faucet serves as a drinking fountain.

It will be seen, also, that the head of the faucet can be swung up and down, sideways, and that the spout can be pointed such that water issuing therefrom may be directed into any area of the sink bowl, and that the spout could be aimed in a direction which, but for an expediency to be explained, might otherwise direct the stream of water into areas outside of the sink bowl. Provision is made, however, to diminish the flow of water from the spout as the spout is directed toward the rim of the sink bowl and to completely shut it off as the stream approaches the rim of the bowl, such that no flow of water can be directed to areas outside of the sink bowl. Thus, it is possible to wash down all areas of the bowl without water escaping the bowl.

The volume of water issuing from the spout is controlled by raising and lowering the head with "off" being at the uppermost position of the head wherein the faucet is in a near-vertical position. The water is turned on increasingly as the head is swung down toward the sink bowl. The temperature of the water is controlled by rotating the knob on the head of the faucet. The direction that the flow of water takes is dependent upon the position of the head. All three controls can be accomplished with one hand, simply by manipulating the knob to either move the head or to rotate the knob on the head as desired.

Other features and advantages of the invention will be readily apparent to those skilled in the art from the following detailed description of the drawings in which:

FIGURE 1 is a perspective view showing a preferred embodiment of the invention installed on a sink. In this figure the faucet is shown in the partly "on" position.

FIGURE 2 is a view similar to FIGURE 1 showing the faucet in its raised, "off" position.

FIGURE 3 illustrates the faucet with the head thereof positioned to provide a drinking fountain.

FIGURE 4 is a perspective view shown partly in section to illustrate the connections of hot and cold water supply lines to the faucet. The arrows in this view illustrate the directions in which the faucet is adapted to be moved.

FIGURE 5 is an enlarged cross-sectional view taken on the line 5—5 of FIGURE 2.

FIGURE 6 is a fragmentary elevational view of the base portion of the faucet with an end cap removed.

FIGURE 7 is a fragmentary elevational view of an end cap. In assembly, the end cap shown in this figure is turned 180° to the left, as shown, and seated upon that part of the faucet shown in FIGURE 6.

FIGURE 8 is an enlarged fragmentary cross-sectional view taken on line 8—8 of FIGURE 5.

FIGURE 9 is an enlarged cross-sectional view taken on line 9—9 of FIGURE 8.

FIGURE 10 is an enlarged fragmentary cross-sectional view through the head portion of the faucet.

FIGURE 11 is a fragmentary cross-sectional view taken on line 11—11 of FIGURE 10.

FIGURE 12 is a fragmentary cross-sectional view taken on line 12—12 of FIGURE 10.

FIGURE 13 is a view similar to FIGURE 12 in which the head of the faucet is directed outwardly toward the rim of the sink illustrating the manner in which the water is shut off as the spout direction approaches the rim of a sink bowl.

FIGURE 14 is a view similar to FIGURE 13 in which the head of the faucet is in a vertical position for use as a drinking fountain.

FIGURE 15 is a diagrammatic view illustrating the head of the faucet arranged such that equal amounts of hot and cold water issue from the spout.

FIGURE 16 is a view similar to FIGURE 15 in which approximately one part of hot water, for example, issues from the spout for approximately two parts of cold water.

FIGURE 17 is a view similar to FIGURE 15 in which the faucet parts are arranged such that all cold water flows from the spout.

The faucet of this invention comprises three major components, a base **10**, a head **11** and two water supply tubes, numeral **12** for the cold water and numeral **13** for the hot water, that connect base **10** to head **11**. The head **11** includes a control knob portion **14** and a spout portion **15**.

Now going to the base portion of the faucet, the major part of the base is a core piece that is generally designated **16** in the drawings. As is best shown in FIGURES 5 and 8, the core portion of the base comprises a vertically disposed, generally cylindrical portion **17** and a horizontally disposed, generally cylindrical portion **18** that is atop of and an integral part of the vertical cylindrical portion **17**. Core piece **16** may be cast as an integral part from a material such as brass or molded from one of the plastics that are compatible with water. The vertical cylindrical portion **17** of core **16** has two bores **19** and **20** extending vertically therethrough with their axes diametrically opposed with respect to the vertical central axis of the vertical cylindrical portion **17** to provide two passageways, one for cold water and the other for hot water, the hot water passageway being designated **21** and the cold water passageway being designated **22**. Since this view is from the rear of the faucet, the usual left-right, hot-cold relationship is reversed. The vertical cylindrical portion **17** of core **16** is surrounded by a base sleeve **23**. These two parts are dimensioned such that there is a slip fit between them. Adjacent the bottom of core piece **16** there are three annular grooves **24**, **25** and **26** that receive O-rings **27**, **28** and **29**. These rings seal off two annular chambers, one above the other. The first, designated by the numeral **30**, is a hot water chamber and it is connected through a port **31** to a connector piece **32** that has the conventional water pipe coupling **33** attached to it. Coupling **33** is connected to a conventional hot water line **34**. Below the annular hot water chamber **30** there is provided a cold water annular chamber **35**. This annular chamber **35** is connected to a cold water supply line **36** by means of a conventional coupling shown at **38**. The water passes from the cold water supply line **36** into the cold water annular chamber **35** through a port **39**.

Thus, the cold water supply is sealed by O-rings **28** and **29** and the hot water supply is sealed by O-rings **27** and **28**, such that there can be no mixture of the two, hot and cold waters, flowing into the core piece **16**.

The base **10** is adapted to be locked to the rear deck **40** of a sink bowl that is supported by means such as a panel of plywood **41** by means of the following parts. The base sleeve **23** has a groove **42** therein that is above the rear deck **40** of the sink. This groove **42** receives a snap ring **43**. The snap ring also seats within an annular groove **44** of an escutcheon ring **45**. The core piece **16** is locked into position by a circular base plate **46**. Base plate **46** is held against the bottom rim of base sleeve **23** by means of a metal screw **47** that passes through an appropriately tapered bore in the base plate **46** and threads into the bottom of the core piece **16**. For convenience, a locater pin **48** is provided extending from the lower end of the core piece **16** through an appropriate bore in base plate **46**. The force of tightening screw **47** is transmitted to the upper end of the base sleeve **23** by means of a lip **49**. Thus, the core piece **16** is locked in place relative to the sleeve, except that the core piece is free to rotate about its own vertical axis. The sleeve itself is secured to the deck of the sink by means of two elongated bolts **50—50** that pass through threaded bores in a ring **51** that is an integral part of the base sleeve **23** and press against a bearing ring **52** that is underneath the plywood **41**.

It should be noted at this point that the core piece and those parts that are attached to it can be removed from a sink installation simply by removing screw **47** and the plate **46**. When this is done, the entire core piece can be withdrawn upwardly and it is not necessary to remove the hot and cold water supply lines from the faucet, as is required for conventional faucets.

Referring now to FIGURE 8, the two hot and cold water passageways **21–22** that extend up through core piece **16** are sealed at the lower ends by means of plugs **53—53**. The upper ends of these two water passageways terminate short of the horizontal central axis of the horizontal cylindrical portion **18** of the core piece and adjacent their upper ends the passageways have ports **54–55** opening in diametrically opposed directions therefrom. **54** indicates the hot water port opening from vertical bore **20**, whereas port **55** opens from the vertical bore designated **19**, and is for cold water. The two ports **54** and **55** are formed by drilling in from opposite sides of the ends of the horizontal cylindrical portion **18** of core piece **16**. In each instance, the inner end of the port, either **54** or **55**, is smaller than the outer portion thereof. In each case, the inner portion seats a spring **56**, whereas the outer portion seats a cylindrical valve member **57**. The part of each valve member **57** that effects a seal is the outer rim **58** thereof.

Two end caps are affixed to base **10**. The one that is shown at the left in FIGURE 8 is designated **60** and it is for the cold water side, whereas the one designated **61** in this figure is at the hot water side. These end caps are substantially identical with the exception that the end cap **60** at the cold water side carries a limit pin **62**. As will be explained, this limit pin cooperates with a short arcuate groove **63** to limit the swinging movement of the faucet about the central horizontal axis B of the base **10**. Both end faces of the horizontal cylindrical portion of the base are planar, and in each instance, there is provided an annular groove **64** at the periphery of end face. This annular groove **64** receives an annular rim **65** that is formed on an end cap and in between the rim and the inside of the annular groove **64** an O-ring **66** is seated.

The two end caps **60–61** are held in place on the horizontal cylindrical portion **18** of base **10** by means of bolts **67—67**. In each instance, a bolt **67** has an enlarged, flat head **68** that is preferably recessed in the outer end of the end cap, a smooth cylindrical shank portion **69** that forms a pivot for the end cap, and a threaded portion **70** by which the bolt is fastened to the horizontal cylindrical portion of base **10**. It is preferred that an O-ring such as the one shown at **71** be seated within an appropriate groove in the cylindrical shank portion **69** of each bolt to provide a seal. As shown in FIGURE 8, the two bolts are on the same, horizontal axis in alignment with one another. The inner face **72**

of each of the two end caps is planar and as best may be seen in FIGURE 7, there is a port **73** in each end cap that cooperates with the two ports **54** and **55** to permit water to pass through the end cap from port **73** into a straight passageway **74** that intercepts the port as shown in FIGURE 8.

Referring now to FIGURE 6, the outer rim **58** of each of the valve members **57—57** is held against the planar face **72** of each end cap by means of the springs **56—56** and as the end caps are rotated with respect to the ports **54–55** shift relative to the two ports **73—73** in the two end turned full On or completely Off or caused to issue from the ports in any volume from full On and full Off. The manner in which this relative rotation takes place and the reasons therefor will be explained later. In any event, the amount of such relative rotation is limited by means of pin **62** and the groove **63** that is in the end of the horizontal cylindrical portion of the base at the cold water side thereof. The limits are illustrated in FIGURE 6.

The lower ends of the two hot and cold water tubes **12** and **13** are affixed in appropriate seats within the two end caps such that they open into the two passageways **74—74**, see FGURE 7. At this time, it can be seen that as the head **11** is raised and lowered, the two ports **54–55** shift relative to the two ports **73—73** in the two end caps, **60** for the cold water and **61** for the hot water, so that a control for the volume of water supplied to the head is provided. In the preferred embodiment of the invention, the ports **54–55** are disposed relative to the two ports **73—73** in the respective end caps, such that there is complete alignment with the respective ports when the two hot and cold water tubes approach a near-horizontal position and that there is complete misalignment when the tubes approach a vertical position. One of the great advantages to this arrangement is that the whole faucet is up and out of the way when the water is Off and when the water is full On, the head from which the water issues is down close to the sink bowl. In intermediate positions, there can be a flow of water obtained from the head, and thus, it is possible to obtain water from the faucet even though the sink is full of dishes. For example, a coffee pot can be filled from the faucet even though the sink bowl is full of water. Further, the elevated position of the spout, with water running from it, makes the washing and peeling of vegetables much easier than at a conventional faucet.

Both tubes, **12** for the hot and **13** for the cold water, have sleeves affixed to their upper ends. The one at the upper end of the hot water tube **12** is designated **75** and the sleeve at the upper end of the cold water supply tube is designated **76**. In assembly, these two sleeves are on the same horizontal axis C, and they seat on two cylindrical projections that extend from diametrically opposite sides of the spout portion of the head, the projection at the left, as viewed in FIGURE 10, being designated **77** and the cylindrical projection at the right being designated **78**. In each instance, there is a deep groove **37** surrounding the cylindrical projection in which the inner end of the sleeve seats.

There is a port **79** in each sleeve that opens to the inside of each of the tubes **12** and **13**. With the head of the faucet in a relatively vertical position, the ports **79—79** are in alignment with flared ports **80—80** that are cut through the sidewalls of the two cylindrical projections **77–78**. These flared ports are toward the rear of the head of the faucet when it is in a relatively vertical position. The reason for this will be explained. The joint between a sleeve and a cylindrical projection, at each side of the head of the faucet, is sealed by two O-rings **81** and **82** that are in appropriate grooves in the outer periphery of the cylindrical projection. The sleeve at each side of the faucet body is held onto the body by means of a large headed bolt **83** that is threaded into an appropriately tapped bore and sealed by means of an O-ring **85**.

As shown in FIGURE 10, the projection at the left, which is on the hot water side, has a central passageway **86** therethrough and the cold water projection has a central passageway **87** therethrough, these two passageways opening into a central vertical bore **88** that extends through the body of the faucet spout portion **15** of the head **11**. This vertical bore is in two different diameters providing a shoulder **89** that is adjacent to the upper part of the spout portion of the head and this vertical bore provides a seat for a barrel valve **90**. The vertical bore through the center of the faucet portion of the head preferably has an aerator **91** at the exit thereof, this aerator threading into the lower end of the spout portion **15** of the head in a conventional manner. Barrel valve **90** has a lower portion **92** that is a slip fit relation with the vertical bore **88** through the spout portion **15** of the head, this lower portion being of a larger diameter than the upper portion that extends beyond the shoulder **89** and into the knob portion **14** of the head. The upper portion of the barrel valve comprises a stem **93** having a flat **94** thereon that receives a set screw **95** threaded through the knob portion of the head to lock the barrel valve in place. The lower portion **92** of the barrel valve has a vertical passageway therethrough identified by the numeral **96** and this passageway is open to a V-shaped slot **97** cut diametrically through the lower portion of the barrel valve. This V-shaped slot is in the rear portion only of the barrel valve. A stop pin **98** is provided that is seated within the spout portion of the faucet and extends into an arcuate groove **99** in the knob to limit the movement of the knob portion of the head with respect to the spout portion of the head. Groove **99** extends through approximately 180°, and therefore, limits the movement of the control knob portion of the head to a position in which it can be turned full left to full right.

Referring now to FIGURES 15 through 17, it may be seen that when the V-shaped slot **97** is arranged such that when its sides are open equally to the hot and cold water inlet lines **12** and **13** respectively, that equal mixtures of hot and cold will be discharged from the faucet spout, this arrangement of the various parts appears in FIGURE 15. As shown in FIGURE 16, when the faucet knob is rotated toward the cold water line **12**, more cold water than hot is permitted to flow into the cross slot **97** and out the faucet, and, as shown in FIGURE 17, when the knob is rotated to the right to the limit as determined by the stop pin **98**, the cross slot **97** is completely open to the cold water line **12** to the exclusion of any hot water. It can be seen therefore, that by rotating the control knob portion **14** of the head about an axis D which is in a plane common to the vertical axis A about which the base is adapted to rotate, that a temperature control is provided.

It may be seen, therefore, that three controls of the faucet can be accomplished by grasping the knob **14**. The first of these is the On-Off or volume control accomplished by raising and lowering the head which means pivoting the base about its horizontal axis B. The second is in moving the position of the head relative to the base by swinging the base about its vertical axis A, for example, in moving the faucet spout **15** from one part of a double bowl sink to the other, as shown in FIGURE 1. The third control described to this point is the control of the temperature of the water issuing from the spout, accomplished by rotating the knob portion **14** of the head about its vertical axis D. There is also another control that is unique with this faucet and that is best exemplified by a comparison of FIGURES 12 and 13 of the drawings. It should be noted that the flared port **80** extends through a limited number of degrees of the diameter of the cylindrical projection **77** for the hot side of the faucet and **78** for the cold side of the faucet, and that these flared ports are arranged relative to the respective ports **79—79**, such that the flow of water issuing from the faucet spout

diminishes and finally turns Off as the spout is directed toward the rim of the sink bowl.

It should be observed at this point that the faucet of this invention can be utilized to wash down any portion of a sink bowl. It should also be observed that this can be done by grasping the control knob **14** by one hand. It can also be seen that the volume of water is under the control of a person's hand by raising and lowering the control head, that the temperature of the water issuing from the water spout is under the control of the rotation of the control knob **14**, that the water cannot be directed over the rim of the bowl.

There is one other control that can be utilized with the faucet of this invention, as best exemplified by FIGURES 3 and 14. A comparatively small port **100** is provided in both of the cylindrical projections **77** and **78** at a point diametrically opposite the flared ports **80—80**, such that the spout **15** may be turned into a vertical position and have a small amount of water issued from the spout. This provides a drinking fountain.

In summary, attention is now directed to FIGURE 2 wherein four axes are identified. Axis A, as identified in this figure, is the vertical axis about which the whole faucet is adapted to be swung from side to side. Axis B is the horizontal axis about which the head of the faucet is adapted to be raised and lowered. Axis C is one about which the head of the faucet is adapted to be rotated for directing the flow of water from the faucet and also for diminishing the flow as it approaches the rim of the sink bowl. Rotation about axis C of the head into the position shown in FIGURE 3 creates a drinking fountain. Axis D is the axis about which the knob portion of the faucet is turned to control the temperature of the water issuing from the faucet.

An added advantage to the faucet of this invention is that it is not necessary to provide a spray of the type that is used in association with many of the kitchen sinks now on the market. In order to provide a sink spray, it is now necessary to have a diverter valve in the faucet, which diverter valve is exposed to the water that is flowing through the faucet at all times. There are many places where these diverter valves become ineffective within a matter of months because of the limiting conditions of the water. These sprays or sprayheads further have been connected to the water supply through a length of rubber hose; in many cases these rubber hoses have split or have become disconnected from their ends and have caused much damage through leakage. With the faucet of this invention, it is not necessary to provide such sprays, inasmuch as water flowing from the faucet of this invention can be directed into any section of a sink bowl.

Having described my invention, I claim:

1. A hot-cold water faucet comprising a base, means to mount said base on the rear deck of a sink bowl for rotative movement about a vertical axis, said base having at least a portion thereof adapted for rotative movement about a horizontal axis, a head, means forming a hot water passageway and a cold water passageway connecting said head and said portion of said base that is adapted to rotate about said horizontal axis, said head having a spout portion and a control knob portion, and means mounting said spout portion and said knob portion for simultaneous up and down rotative movement about a horizontal axis that parallels the horizontal axis about which said base portion is adapted to rotate.

2. A faucet as set forth in claim **1** in which two valves are provided to control the volume of water issuing from said spout portion operable upon up and down movement of said head.

3. A faucet as set forth in claim **1** in which a single valve is provided to control the temperature of water issuing from said spout upon rotative movement of said control knob about its own central axis.

4. A faucet as set forth in claim **1** in which the direction of the flow of water issuing from said faucet is variable upon rotative movement of the base, rotative movement of the head or up and down swinging movement of said means connecting the head and base.

5. A faucet as set forth in claim **1** in which valving is provided in the head that diminishes the amount of water issuing from said faucet as said head is rotated toward the rim of said sink bowl.

6. A faucet as set forth in claim **1** in which said base includes a vertically disposed cylindrical portion that projects down through said rear deck, a sleeve surrounding said cylindrical portion in slip fit relation, means securing said sleeve to said rear deck, means securing the lower end of said cylindrical portion to said sleeve in rotatable relation therewith, and said cylindrical portion adapted to be withdrawn upwardly from said sleeve upon the removal of said securing means.

7. A faucet as set forth in claim **1** in which said knob and spout are adapted to be rotated into a position in which said spout is directed upwardly to provide a drinking fountain.

8. A faucet as set forth in claim **1** in which valving is provided in said base to control volume of water flow, which valving is adapted to be operated by up and down swinging movement of said head, and in which valving is provided in the head to control the temperature of water issuing from said spout.

9. In a hot-cold water faucet having a base, means to mount said base on the rear deck of a sink bowl for rotative movement about a vertical axis, the improvement comprising said base having at least a portion thereof adapted for rotative movement about a horizontal axis, a head, means forming a hot water passageway and a cold water passageway connecting said head and said rotative portion of said base, said head having a spout portion and a control knob portion, and means mounting said knob portion for rotative movement about an axis that is in a plane common to the vertical axis about which said base portion is adapted to rotate.

10. A hot-cold water faucet comprising a base, means to mount said base on the rear deck of a sink bowl, said base having a first portion thereof adapted for rotative movement about a vertical axis and a second portion thereof adapted for rotative movement about a horizontal axis, first means providing hot and cold water passageways through said first and second portions of said base, a spout, second means providing hot and cold water passageways connecting said second portion of said base to said spout, a valve associated with each of the respective hot and cold water pasageways in said base, and means for simultaneously opening and closing said valves upon vertical swinging movement of said second means to cause rotative movement of said second portion of said base about said horizontal axis.

References Cited

UNITED STATES PATENTS

2,592,062	4/1952	Perry	137—625.41
2,707,486	5/1955	Johns	137—625.41
2,733,730	2/1956	Turak	137—625.19
2,790,632	4/1957	Mellette	239—26
2,845,949	8/1958	Parker	137—625.41
3,056,418	10/1962	Adams et al.	137—625.41
3,169,549	2/1965	Quick	137—625.41
3,322,152	5/1967	Aechter	137—625.41

WALTER SOBIN, *Primary Examiner.*