

Oct. 29, 1963

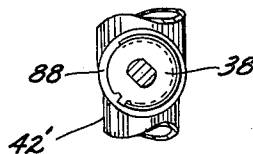
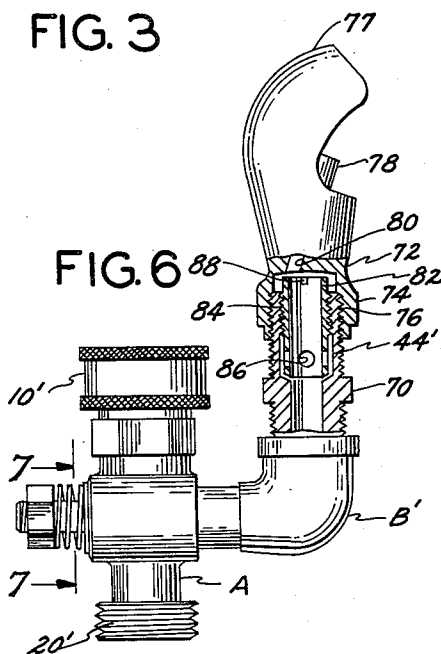
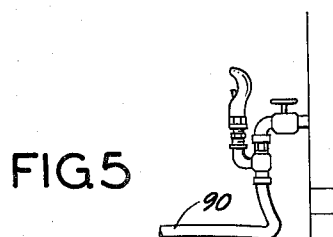
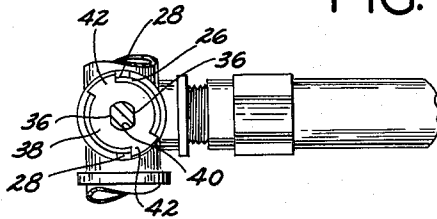
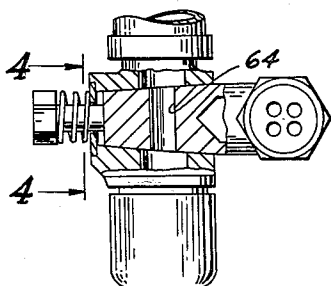
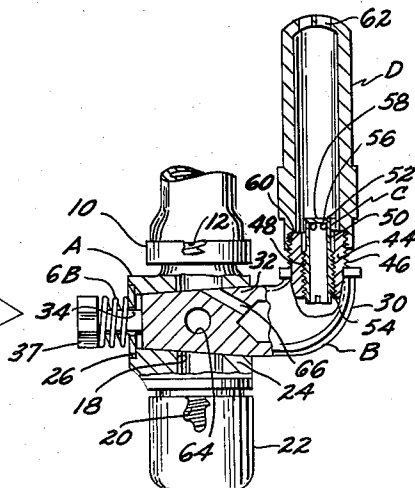
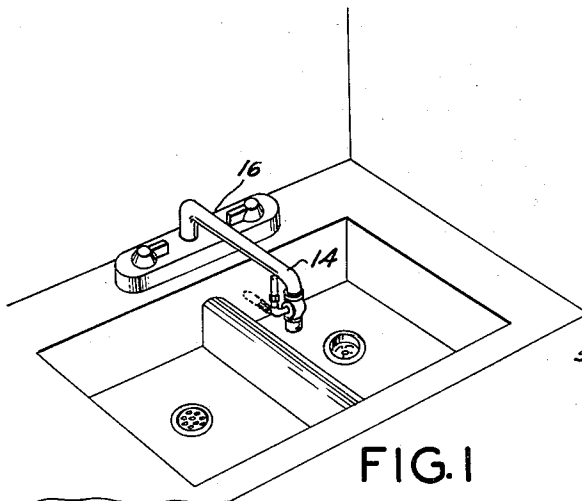
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3,108,748

COMBINATION FAUCET AND DRINKING FOUNTAIN

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2 Sheets-Sheet 1



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2 Sheets-Sheet 2

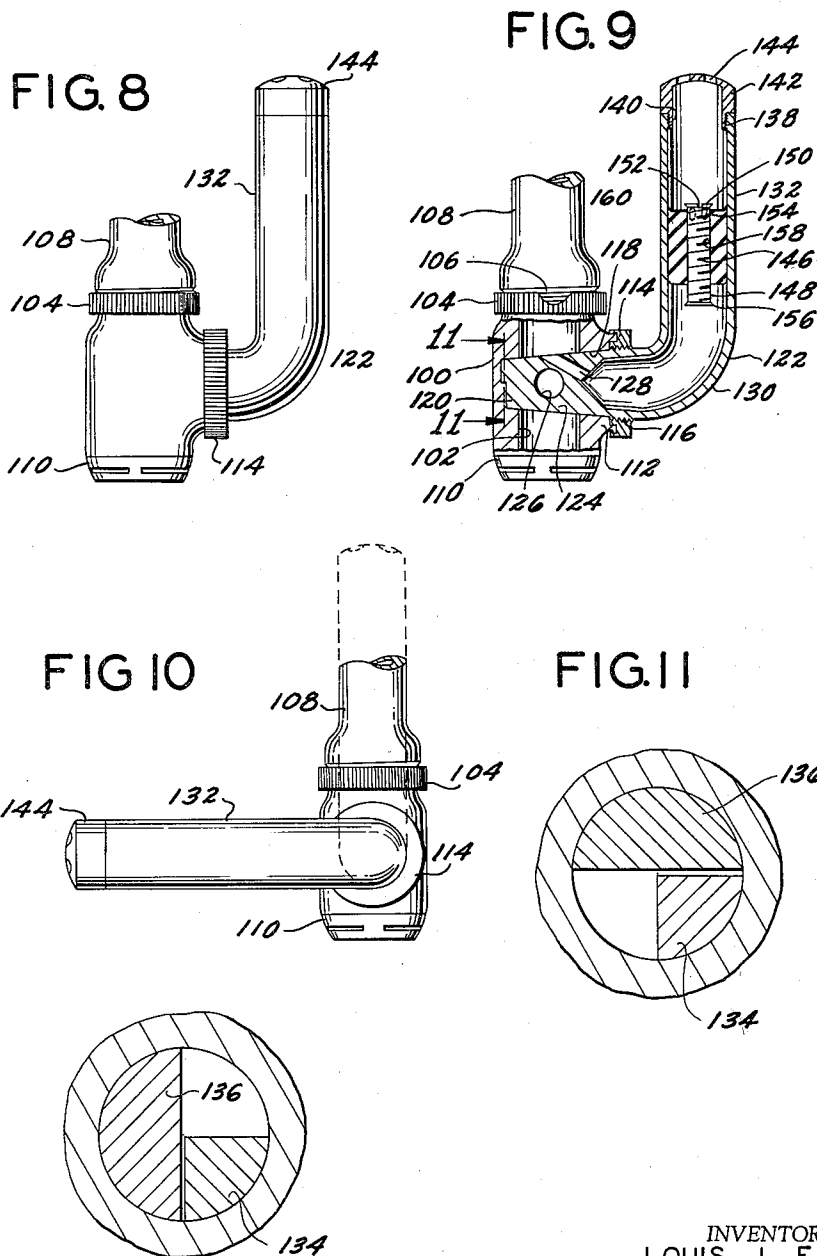


FIG. 10

FIG. 11

FIG. 12

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COMBINATION FAUCET AND DRINKING FOUNTAIN

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The present invention relates generally to the field of plumbing, and more particularly to a combination faucet and drinking fountain.

The major object of the present invention is to provide a combination faucet and drinking fountain that can be installed as a permanent part of the plumbing, with the handle portion thereof serving not only as a means to control the rate of water flow through the invention, but when the handle is disposed in an upwardly extending position water will bubble out of the upper portion thereof in the manner of a conventional fountain, and when the handle is disposed in a second position it obstructs the flow of water therethrough to permit the water to discharge through the faucet in a conventional manner.

A further object of the invention is to supply a combination faucet and drinking fountain that is compact, structurally simple, attractive in appearance, and in which adjustable means are provided to regulate the flow of water through the handle portion thereof to a desired height, irrespective of the pressure at which water is furnished to the invention.

Another object of the invention is to provide a combination faucet and drinking fountain that may be permanently attached in a stationary position on the exterior of a residence to provide a fountain, yet in a manner to permit a hose to be attached to the downwardly extending portion of the device without disconnecting the fountain portion as has been necessary with fountain attachments available heretofore.

Another object of the invention is to provide an attachment for use in the kitchen as well as bathroom, to reduce the excessive number of drinking glasses that are used during the day and minimize the possibility of germs, various bacteria, or other infectious media being transferred from one person to another due to the use of glasses which may not have been thoroughly cleansed and sterilized.

A still further object of the invention is to provide a device that may be utilized to provide a drinking fountain without a costly revision of existing plumbing in a home, and which may be installed with a minimum of expense.

A further object of the invention is to provide a device that is extremely simple to install and can be installed in the average home in such convenient locations as the yard as well as in the kitchen and bathroom by those having a minimum of mechanical ability whereby the device has a considerable appeal as a "do-it-yourself" item of sale.

Yet another object of the invention is to supply a device in which the rate of flow of water through the drinking fountain portion thereof is easily and simply controlled by means of a device of a novel structure which literally cannot be stopped up or clogged by foreign material such as silt, particles of sand and the like that may be carried with the water discharging therefrom.

A further object of the invention is to supply means for converting a plug type faucet to a combination faucet and drinking fountain, with this transformation being susceptible of accomplishment without removing the faucet from the line to which it is connected.

These and other objects and advantages of the invention will become apparent from the following descrip-

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tion of a number of forms thereof, and from the accompanying drawing illustrating those forms, in which:

FIGURE 1 is a perspective view of the first form of the invention installed on a conventional water spout in a kitchen;

FIGURE 2 is a combined vertical cross-sectional and side elevational view of the first form of the device shown in FIGURE 1;

FIGURE 3 is the same view shown in FIGURE 2, but illustrating the handle portion of the device being rotated 90° to a horizontal position;

FIGURE 4 is a side elevational view of the first form of the invention shown in FIGURE 3 taken on line 4—4 thereof;

FIGURE 5 is a side elevational view of a second form of the combination faucet and drinking fountain;

FIGURE 6 is a combined side elevational and vertical cross-sectional view of the second form of the invention;

FIGURE 7 is a side elevational view of the combination faucet and drinking faucet taken on line 7—7 thereof;

FIGURE 8 is a side elevational view of a third form of the invention;

FIGURE 9 is a combined side elevational and vertical cross-sectional view of the third form of the device shown in FIGURE 8, with the combination device in a position where water discharges through the handle portion thereof;

FIGURE 10 is a side elevational view of the third form of the invention shown in FIGURE 8 but with the handle being rotated 90° to cause water to discharge through the invention;

FIGURE 11 is a fragmentary vertical cross-sectional view of the second form of the combination device taken on line 11—11 of FIGURE 9; and

FIGURE 12 is a fragmentary vertical cross-sectional view of the invention shown in FIGURE 9 illustrating the position of the valve member when the handle has been rotated from the upright position to the horizontal position shown in FIGURE 10.

With continuing reference to the drawings, particularly to FIGURES 1 to 4 inclusive thereof, for the general arrangement of the first form of the invention, it will be seen to include a valve body A having an attaching ring 10 rotatably supported on the upper end thereof, which ring is internally threaded and capable of engaging threads 12 formed on the outer extremity of a swing spout 14, as seen in FIGURE 1. The flow of water through the swing spout 14 is controlled by a conventional valve structure 16 which forms no part of the present invention. A bore 18 extends longitudinally through body A. The lower end of the valve body A has threads 20 formed thereon which serve as a mounting for a conventional commercially available aerator 22 (FIGURE 2) which also forms no part of the present invention.

A transverse bore 24 of frusto-conical cross section is formed in body A, and as shown in FIGURE 2, is in communication with bore 18. As illustrated in FIGURE 2, bore 24 terminates on the left-hand side of the invention in a circular recess 26. Two lugs 28 are formed as a part of bore A and project outwardly into recess 26 (FIGURE 4), for reasons which will be explained hereinafter.

A valve member B is provided, which as shown in FIGURE 2 includes a tubular L-shaped portion 30 and a straight tapered portion 32 that is rotatably and sealingly mounted in bore 24. The valve portion 32 has a small stud bolt 34 projecting from the left-hand end thereof, which bolt is engaged by a nut 37. Bolt 34 is flattened on opposite sides thereof to provide two longi-

tudinally extending surfaces 36, as best seen in FIGURE 4.

A washer 38 is mounted on the stud bolt 34, and this washer has a centrally disposed bore 40 formed therein that is of the same cross section as the transverse cross section of stud bolt 34 whereby the washer is held on the bolt but is not rotatable relative thereto. The washer 38 has two diametrically extending segments 42 that project outwardly therefrom which limit the movement of valve member B to slightly more than 90°, due to contacting the stops 28, as best shown in FIGURE 4.

The upper outer end of valve portion 30 (FIGURE 2) is internally threaded. A nipple 44 having external threads 46 and internal threads 48 formed thereon is supported by the valve portion 30 and projects outwardly therefrom. A flow regulator C that includes a tubular member 50 having a closed upper end 52 is provided, with the regulator member 50 having threads 54 formed on the exterior surface thereof that engage threads 48 in nipple 44. The regulator C also has a number of circumferentially spaced transversely positioned ports 56 formed therein, located directly below the closed upper end 52. The end 52 preferably has a transverse slot 58 formed therein to permit engagement thereof by a screwdriver or like instrument (not shown) and the regulator rotated relative to the nipple 44 to control the rate at which water flows upwardly through the ports 56.

A tubular handle D is provided as shown in FIGURE 2, on the lower interior end portion of which threads 60 are formed that engage the threads 46 of the nipple 44. At least one port 62 is provided on the upper end of handle D through which water can be discharged upwardly as a fountain for drinking purposes when the handle and valve member B are rotated to the position shown in FIGURES 1 and 2.

The valve portion 32 has a first transversely positioned passage 64 extending therethrough, which when the valve member B is in the first position shown in FIGURE 3, effects communication which permits water to flow from the spout 14 through the valve member to discharge through the aerator 22. A second angularly disposed passage 66 is formed in the valve member portion 32 which effects communication between the upper part of bore 18 and the interior of tubular valve portion 30 when valve member B is in the upright position shown in FIGURES 1 and 2.

When valve member B is disposed in the second position, water flows through the second passage 66, valve portion 30, regulator C and handle D to bubble upwardly as a column through the ports 62 to permit the drinking thereof. A compressed helical spring 68 encircles the bolt 34 and abuts against the exterior surface of the washer 38 and interior surface of the nut 37. Spring 68 at all times tends to urge the valve portion 32 into pressure fluid-sealing contact with the interior surface of bore 24.

Operation of the first form of the invention is extremely simple. The pressure at which domestic water is supplied at the outlet in different communities varies widely. After the combination faucet and drinking fountain has been mounted on a swing spout 14 or other outlet such as in the bathroom, yard or patio, the flow of water through the swing spout is controlled by the valve structure 16. When it is desired to use the combination device for drinking purposes the handle D is disposed in the upwardly extending position shown in FIGURE 1.

A determination is then made as to whether the water that bubbles upwardly through the handle is suitably high to permit drinking therefrom. If the water bubbling upwardly as a small column or fountain is either too high or too low, a screwdriver (not shown) is inserted downwardly through port 62 and the regulator C rotated to place the ports 56 therein either closer to the nipple 44 or further away therefrom. Varying the position of the

ports 56 relative to nipple 44 can either increase or decrease the resistance to the flow of water therethrough, and the pressure of the water as it discharges as a column or fountain. The pressure at which the water so discharges controls the height of the fountain or column. Flow of water through ports 56 is obviously restricted, for these ports are moved downwardly further within the confines of the nipple 44.

It will be particularly noted in FIGURE 2 that the second passage 66 and the interior of the L-shaped tubular portion 30 of valve member B are of relatively large cross section, so that any sand or particles of foreign material borne by the water through spout 14 or other outlet will not at any time clog the combination device or restrict the flow of water therethrough. Adjustment of the regulator C by means of a screwdriver or other elongate instrument having a tapered lower edge is easily accomplished by extending it downwardly through the interior of handle D, but the regulator is so disposed that positioning thereof cannot be changed without the use of such an implement. Positioning of the regulator in this manner discourages changing the adjustment thereof by children or others inclined to tamper with the device after its installation, particularly if located in a back yard or patio where a number of people have access thereto.

A second form of the invention is shown in FIGURES 5-7 inclusive, which as may be seen therein, includes a valve body A' and valve member B' that are similar in structure to the valve body A and valve member B previously described. The component parts of the second form of the invention which are substantially the same structure as the first form will not again be described in detail, but will be simply identified in the drawings by the same numerals as used in connection with these elements in the first form, but to which a prime has been added to distinguish them therefrom. The nipple 44' is of the same structure as the nipple 44, other than that an intermediately disposed portion thereof is formed to define a hexagonal nut portion 70 to facilitate removal of nipple 44' from valve member B'. A conventional water fountain head 72 is provided which has a lower tubular portion 74 that is formed with internal threads 76. Threads 76 engage the exterior threaded upper end portion of nipple 44'.

The lower tubular portion 74 develops into an upwardly extending shell 77 that extends partially over and partially around a tubular water discharge member 78. A passage 80 extends upwardly through the fountain head 72 and is in communication with the interior of the tubular member 78. A regulator 82 controls the rate of water flow through nipple 44' to passage 80, and the top of this regulator is open with the bottom thereof being closed. Threads 84 are formed on the exterior surface of regulator 82 that engage threads formed on the interior of nipple 44'.

One or more ports 86 are formed in the lower portion of regulator 82, as can be seen in FIGURE 6. Two diametrically opposed slots 88 are preferably formed in regulator 82 that extend downwardly therein from the upper edge portion thereof. The flow of water to passage 80 is controlled by removing the fountain head 72 and then by use of a screwdriver or other sharp-edge instrument adapted to engage slots 88, the regulator is rotated to advance or lower the port 86 relative to the interior threaded portion of nipple 44', depending upon whether it is desired to increase or decrease the flow of water through passage 80.

If it is desired to decrease the flow of water through passage 80, the regulator 82 is rotated in a direction to place it in a position where port 86 is partially obstructed by the interior threaded portion of nipple 44'. It will be obvious that when it is desired to increase the flow of water, the regulator 82 is rotated in an opposite direction to move port 86 away from the interior threaded

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portion of nipple 44'. The lesser the cross section of port 86 through which water can flow, the greater will be the resistance offered water flowing therethrough. This increase or decrease in resistance increases or decreases the pressure at which water is discharged from the handle D', and the height of the fluid column or fountain formed thereby. Regulation of the pressure of the discharging water in this manner is a feature common to the first, second and third forms of the present invention.

Rotation of valve member B', nipple 44' and fountain head 72, which constitute handle D', is restricted by a projection 42' on a washer 38' in substantially the same manner as the stops and washer disclosed in conjunction with the first form of the invention. Projection 42' contacts the lower end portion of slot 88 when the handle D' is in the upwardly extending positions shown in FIGURES 5 and 6. Projection 42' also contacts the upper end of slot 88 when handle D' is rotated 90° to a substantially horizontal position. The second form of the invention operates in the same manner as the first form, and hence need not be repeated.

A third form of the invention is shown in FIGURES 8-12 inclusive, which can be used for the same purposes as the first and second forms thereof. The third form of combination faucet and drinking fountain includes a valve body 100 through which a first bore 102 extends longitudinally. An internally threaded ring 104 is mounted on the upper end of valve body 100, and this ring is adapted to be rotated to engage threads 106 formed on the exterior end surface of a tubular member 108 through which water is discharged. Member 108 can be a portion of a swing spout faucet, or other plumbing fixture through which water is discharged.

The lower end of valve body 100 is preferably threaded and has an aerator 110 attached thereto. Aerator 110 is of conventional design and forms no part of the present invention. A boss 112 projects outwardly from one side of body 100, and this boss rotatably supports a ring 114 which has threads 116 formed on the interior surface thereof. Boss 112 has a tapered second bore 118 extending therethrough. A tapered cavity 120 is formed on the interior surface of valve body 100 positioned opposite the second bore 118 and in coaxial alignment therewith.

A combination valve member and handle 122 is provided which has a straight tapered portion 124 that snugly and sealingly engages the second bore 118 and cavity 120. Portion 124 has a first passage 126 extending transversely therethrough, and a second passage 128 that is angularly disposed and extends longitudinally to the right as shown in FIGURE 9. The right-hand end of portion 124 develops into a straight tubular handle 132. Passages 126 and 128 are formed in the valve member 124 90° away from one another so that when member 124 is in the position shown in FIGURE 9, water can discharge from the upper portion of the bore 102 only through the passage 128 to the interior of the combination valve member and handle 122. When the combined valve member and handle 122 is rotated to the substantially horizontal position shown in FIGURE 10, communication between bore 102 and passage 128 is obstructed, but with communication between the upper and lower portions of bore 102 then being completed due to the fact that passage 126 is in longitudinal alignment therewith.

The cavity 120 has a quadrant-shaped portion 134 (FIGURES 11 and 12), formed therein which serves as a stop. A semi-circular projection 136 is formed on the extremity of member 124 that is disposed within the confines of the cavity, which projection is of the same thickness as that of stop 134. Projection 136 limits the rotation of member 124 to substantially 90°. When the combined valve member and handle 122 are disposed as shown in FIGURES 8 and 9 whereby the combined valve

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member and handle can be used for drinking purposes, the projection 136 occupies the position shown in FIGURE 11 and further rotation of the valve member in a clockwise direction cannot occur. Upon rotation of the combined valve member and handle 122 to the position shown in FIGURE 10, a part of the edge of projection 136 is brought into abutting contact with the stop 134 and further movement of the combined valve member and handle is prevented.

The upper interior portion of the combined valve member and handle 122 preferably has threads 138 formed thereon which are engaged by threads 140 formed on the lower portion of a cap 142. At least one water discharge opening 144 is formed in the upper portion of cap 142, as best seen in FIGURE 9.

A regulator 146 which controls the rate at which water can discharge through the opening 144, as well as the height at which the discharged water will bubble up above the combined valve member and handle 122 when it is disposed as shown in FIGURES 8 and 9, is situated within the confines of the valve member and handle. Regulator 146 includes a tube having threads 148 formed on the exterior surface thereof, and which is closed on the upper end by an end piece 150 in which a transverse slot 152 is formed. A number of circumferentially spaced water discharge ports 154 are formed in the regulator 146 directly below the end piece 150. The lower end of regulator 146 is provided with a flange 156 that projects outwardly therefrom.

Regulator 146 is disposed in a longitudinally extending bore 158 formed in a plug 160 of resilient material, the dimensions of which are such that it can be squeezed into the confines of the combined valve member and handle 122 when the cap 142 is removed therefrom. When the plug 160 and regulator 148 are forced downwardly within the confines of the combined valve member and handle 122, the threads 148 and regulator 146 are forced into the plug 160 to engage the same, and by rotation of the regulator, the ports 154 can be raised upwardly and downwardly relative to the plug to control the rate at which water discharges through the ports in much the same manner as the regulator described in conjunction with the first form of the invention.

After the plug and regulator have been disposed within the combined valve member and handle 122, the cap 142 is threaded thereon as shown in FIGURES 8 and 9, and the combined valve member and handle then has the appearance of an ordinary handle on a faucet. The tapered portion 124 of the valve member 122 is held in fluid-sealing engagement with the surface defining the second bore 118 and cavity 120 by rotating the ring 114 relative to the valve body. This rotation causes the threads 116 to be moved to the left as shown in FIGURE 9 whereby the valve member 122 is forced into fluid-sealing engagement as previously described.

The operation of the third form of the invention is the same as that outlined in connection with the first form, and no further operational description is necessary.

Although the present invention is fully capable of achieving the objects and providing the advantages hereinbefore mentioned, it is to be understood that it is merely illustrative of the presently preferred embodiments thereof and I do not mean to be limited to the details of construction herein shown and described, other than as defined in the appended claims.

I claim:

1. A combination faucet and drinking fountain for use with a source of domestic water at any pressure at which it may be furnished, including: a faucet body having a first bore that extends therethrough and defines a water inlet and a water outlet, a second bore positioned normal to said first bore and situated between said inlet and outlet, which first and second bores are in communication; a valve member of circular transverse cross section rotatably and sealingly supported in said second

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bore and extending across said first bore, said member having a first water passage formed therein that communicates with said first bore when said valve member is in a first position to permit water entering said inlet to discharge from said outlet, with said valve member having a second passage formed therein which when said valve member is rotated to a second position is in communication with said first bore and permits discharge of water from said first bore towards a first end of said valve member, which first and second passages are so positioned in said valve member that they are not concurrently in communication with said first bore and with said first end having an L-shaped tubular portion that is internally threaded on the outer extremity thereof; a hollow handle that occupies a fixed position relative to said first end of said valve member and communicates with said second passage, said handle serving to permit said valve member to be disposed not only in said first or second position, but serving as a drinking fountain when said valve member is disposed in said second position and water discharges as a column from the free end of said handle; means on said body for connecting said inlet to said domestic source of water; manually adjustable regulator means in said handle which is adjustable from the exterior thereof for regulating the pressure at which water discharges from said handle when said handle is in said second position to control said column to a desired height irrespective of the pressure on said domestic water supply; and an internally and externally threaded nipple that threadedly engages said internally threaded portion and is supported thereon, with said regulator means having threads formed on the exterior thereof that engage said internal threads of said nipple for adjustably

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supporting said regulator means relative to said nipple, and said handle having internal threads formed on the end thereof opposite that from which said water discharges that engage said external threads of said nipple for supporting said handle therefrom.

2. A combination faucet and drinking fountain as defined in claim 1 wherein said regulator means is a tubular shell having threads formed on the exterior thereof that engage said internal threads of the nipple, with one of said ends of said shell being closed, which shell has a port formed therein adjacent said closed end and is provided with engageable means on the end thereof most adjacent the free end of said handle for permitting adjustable rotation of said shell from the exterior of said handle, with said shell when rotated in a direction to advance said port into said nipple increasing the resistance to the flow of water through said regulator to lower the pressure of water as it discharges from said handle to provide a column of water of a desired height, and when said shell is rotated in an opposite direction, increasing the cross-sectional area of said port through which said water can flow to decrease the resistance of water flow therethrough and increase the pressure at which said water discharges from said handle and the height of the column to be formed thereby.

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