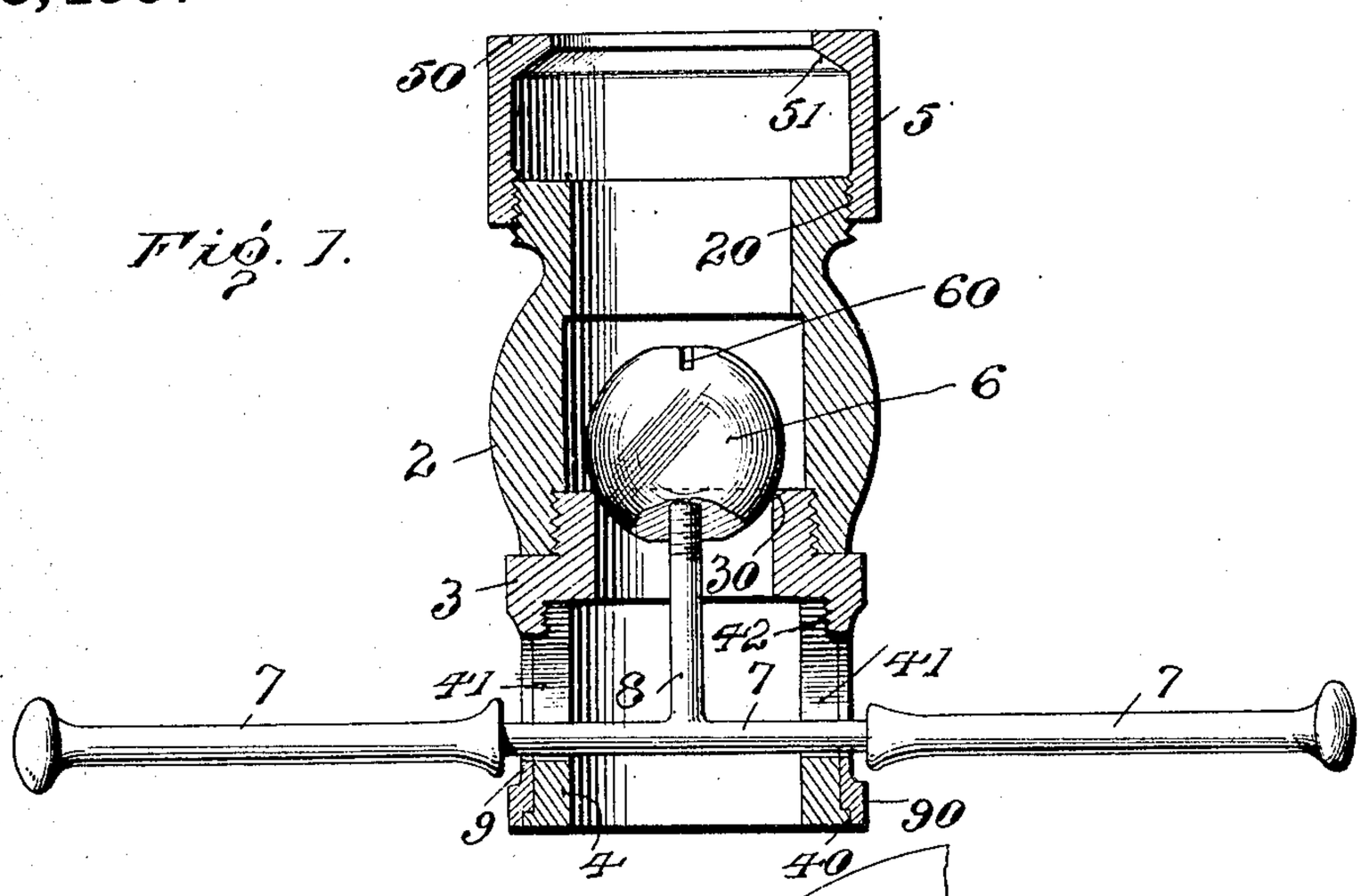
A. P. TALLMADGE.

AUTOMATIC FAUCET.

APPLICATION FILED AUG. 19, 1907.

916,499. Patented Mar. 30, 1909.

Fig. 1.



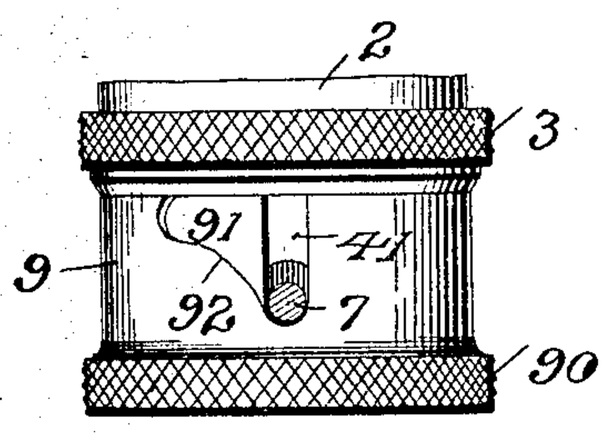


Fig. 3.

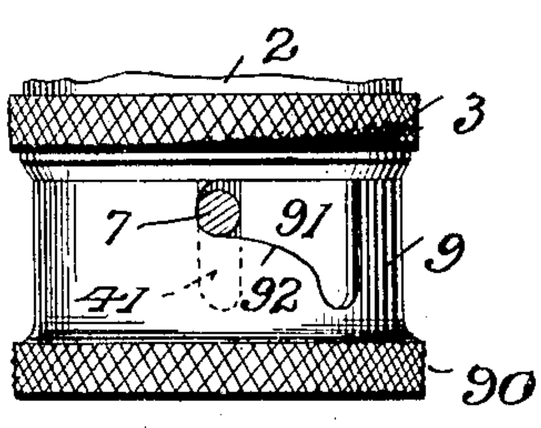


Fig. 4.

Fig. 2.

Witnesses

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AUTOMATIC FAUCET.

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To all whom it may concern:

Be it known that I, ANDREW P. TALLMADGE, a citizen of the United States, residing at Washington city, District of Columbia, have invented certain new and useful Improvements in Automatic Faucets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in faucets; and the objects and nature of my invention will be readily understood by those skilled in the art in the light of the following explanation of the structure shown in the accompanying drawings as my preferred embodiment from among other constructions within the spirit and scope of my invention.

An object of the invention is to provide certain improvements in arrangements and constructions of parts whereby an improved and highly efficient automatic faucet will be produced embodying a vertically movable valve provided with a laterally extending or horizontal lift rod adapted to be engaged and lifted by the edge of the glass, cup, or the like, which is to receive liquid discharged through the faucet.

The invention consists in certain novel features of construction and in combinations or arrangements of parts as more fully and particularly set forth and specified herein after.

Referring to the accompanying drawings:—Figure 1, is a longitudinal sectional view, the ball valve being partially broken away, the compressible gasket or packing ring not being shown. Fig. 2, is a longitudinal section through the automatic faucet, showing the same coupled to a faucet nozzle, a tumbler being shown holding the valve open, dotted lines showing the valve and connected parts in normal positions. Fig. 3, is a detail elevation of the discharge or nipple end of the automatic faucet, the lifting bar being shown in section and in its normal position with the valve in closing position, the cam valve-lifting sleeve being shown in its normal inoperative position. Fig. 4, is a view similar to Fig. 3, but showing the lifting bar locked in elevated position by the cam-valve-lifting sleeve.

In restaurants, and the like, ice water, milk, coffee, tea and other liquids are usually drawn through cocks, faucets or bibbs embodying turn plug valves controlled by laterally extending exterior handles. In drawing liquid from such cocks, it is necessary for the waiter or other attendant to utilize one hand in holding the glass or cup beneath the cock while the other hand is employed in manipulating the valve operating handle thereof. Much time is thus consumed, as the hands must be free of dishes or other articles to enable the attendant to draw the liquid, and again there is considerable waste in the form of drip from such cocks by reason of the comparatively long distance between the plug valve of the cock and the end discharge opening or nozzle thereof.

The device of my invention is adapted to be coupled to the lower or discharge end of such cocks and forms a short downward continuation thereof and contains a vertically moving automatically closing check valve provided with a horizontally disposed lifting bar adapted to be engaged and lifted by the glass or cup.

In the drawings, 1, is the discharge end or nozzle of any cock or liquid discharge pipe, usually formed with the down turned or vertical extremity. These cocks such as commonly employed on water coolers, coffee urns, etc., have exteriorly smooth down-turned discharge ends or nozzles.

The automatic faucet of my invention is at its upper end adapted to be coupled to and form a vertical downward continuation of the discharge end of the cock 1. The hollow or tube like casing of my faucet is formed in sections. For instance, I show the same composed of the main body or section 2, the valve seat section 3, and the discharge end or nipple section 4.

At its upper end the faucet casing is formed with an exterior screw thread 20, meshing with the internal threads in the lower end of a coupling union or compressing sleeve 5, receiving and longitudinally adjustable on the upper end of the casing and adapted to receive the discharge end of the cock 1. At its upper end, the union 5, is formed with an internal annular flange 50, at its under side formed with a bevel 51 forming the union with an internal shoulder beveled inwardly and upwardly. A cylindrical gasket or ring 52, of suitable elastic or compressible material such as rubber com-

position is fitted within the union. To secure the faucet on the cock end, the union is forced longitudinally onto the exterior of the cock end with said gasket surrounding the cock end. The union is then screwed down on the faucet casing to compress the gasket tightly between the upper edge of casing 2, and the beveled shoulder 51, and thereby tightly compress said gasket around and against the cock end 1, with sufficient force to form a tight joint between the faucet and cock and to support the faucet, see Fig. 2. The bevel tends to force the gasket inwardly against and completely around the cock end, and a coupling is thereby formed permitting ready application or disconnection of the faucet.

In the specific example illustrated, the lower end of casing body 2, is internally threaded, and the valve seat section 3, is formed with an exteriorly threaded reduced end which removably screws into the lower end of the casing body. The bore of section 3, is of a smaller diameter than casing body 2, and the upper end edge of the section 3, forms valve seat 30.

The lower end of valve seat section 3, is usually enlarged in diameter and internally threaded to longitudinally and detachably receive the thread 42 of the usually reduced upper end of the discharge nipple 4, which at its lower end can be formed with an exterior annular flange or shoulder 40. The nipple 4, is formed with two longitudinal diametrically opposite slots 41, closed at their lower ends and opening at their upper ends through the top edge of the nipple. The slots start a distance above the lower end of the nipple and extend upwardly through the upper end of the nipple, so that the upper ends of the slots, when the nipple is in operative position, are closed by the lower end of the valve seat section 3.

In the specific example illustrated, I show a metal ball valve 6, movable vertically in casing 2, and adapted to rest on valve seat 30, and tightly close the casing against passage of liquid through section 3. This valve is provided with and adapted to be lifted from its seat by a lifting rod 7, passing diametrically through the nipple 4, with both ends projecting radially and in opposite directions at the exterior of the nipple and passing loosely through the slots 41. At the center of its length said lifting bar is rigid with a vertical valve stem 8, to the upper end of which the valve is secured. I usually cast or otherwise form the lifting bar and valve stem in one piece of suitable metal, and suitably secure the upper end of the valve stem in the lower portion of the valve in any desirable manner, for instance, by threading the upper end of the stem and screwing the same into a threaded socket tapped radially into the valve as shown in Fig. 1, so that the valve, stem and bar will be rigid with each other with the weight of the bar and stem always on the valve. If so desired the upper end of the valve can be formed with a screw driver receiving groove or socket 60, to permit rotation of the valve to unscrew the same from the stem 8, to permit removal of the valve and its lifting bar from the casing, when the nipple 4, has been unscrewed from the casing section 3, so that the lifting bar can be slipped from the nipple through the open ends of the slots 41.

The valve is normally held to its seat by gravity, see Fig. 1, and the slots 41 are of such length as to permit sufficient vertical movement of the lifting bar 7, to raise the valve and permit flow of liquid through the casing and nipple. The lifting bar can be raised as shown in Fig. 2, by engagement with the upper edge of the cup, glass or the like, and the arrangement is such that the valve can be lifted from its seat if either end of the lifting bar is elevated, by reason of the rigid formation of the valve, stem and bar. When the valve is lifted by raising one end only of the bar, the opposite portion of the bar engages the closed lower end of the opposite slot 41 which forms the fulcrum on which the bar rocks. The length of the bar is greater than the diameter of the open end of the cups, glasses or other receptacle by which the bar is adapted to be lifted. When the faucet has been applied to the cock, the cock valve is allowed to remain open, but can be closed when it is necessary to repair or clean the faucet or for other reasons.

The waiters can quickly fill a glass or cup by utilizing only one hand in raising the cup to lift the bar and valve, and when the desired amount of liquid is drawn, the valve will instantly close on removal of the glass. Furthermore, waste by drip will be reduced to the minimum by reason of the quick return movement of the check valve caused by the weight thereon and form thereof, and the comparatively short distance from the check valve to the end discharge opening of the casing, and the absence of obstructions therein, whereby the casing below the valve will ordinarily completely drain before the cup passes from below the same.

It is sometimes desirable to lock or hold the valve in elevated or open position for certain purposes. In the specific example illustrated, I illustrate a cam sleeve 9, arranged loosely on the exterior of the nipple 4, supported and resting on the shoulder 40, thereof and confined between said shoulder 40, and the lower edge of the valve seat section 3. At its lower end this sleeve 9 is formed with an annular raised exterior roughened or milled surface 90 by which the sleeve can be turned or oscillated on the nipple.

The sleeve 9, is recessed at its opposite portions, at 91, opposite the slots 41 in the nipple so that said recesses 91 will register with the slots. The recesses open through the top edge of the sleeve, and the lifting bar 7, projects through the recesses. Each recess 91, at one end is in height equal to or greater than the length of each slot 41 so that when the sleeve is at its limit of movement in one direction the lifting bar is free to move its free stroke and can drop to its limit of downward movement with the valve in seated closing position. The floor of each recess forms a cam edge 92 rising on curved lines from the deep end of the recess toward the opposite end thereof, and these cam edges are so formed that when the sleeve is turned in one direction, to the right, in Figs. 3 and 4, the lifting bar will be elevated by engagement with the cam edge and when the sleeve reaches its limit of movement in said direction the bar will be held in elevated position, see Fig. 4, holding the valve in open position. When the sleeve is turned to its normal position the lifting bar and valve will drop by gravity to their normal lowered position.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. An automatic faucet comprising a casing provided with an internal vertically movable check-valve, said casing having a depending portion forming opposite vertical slots closed at their lower ends to form fulcrums, and an elongated check-valve-lifting bar extending through and projecting beyond said portion and movable vertically in said slots, said bar adapted to be tilted vertically from either end to lift said valve and to fulcrum at its opposite portion at the lower closed end of one of said slots, all substantially as described.

2. An automatic faucet comprising a casing, an internal check valve provided with lifting means confined to reciprocate vertically and extending to the exterior of the casing, and a normally inoperative rotative cam valve lifting and locking sleeve separate from and adapted to lift said means and the valve and lock the same in elevated position, substantially as described.

3. An automatic faucet comprising a casing, a check valve therein, a vertically movable lifting bar for said valve extended to the exterior of the casing, and a separate movable sleeve having cam edges adapted to engage said bar and lift the same and the valve and hold the same in elevated position.

4. An automatic faucet comprising a casing, a vertical movable check valve therein, provided with a lifting bar, and normally inoperative means separate from said bar and operative from the exterior of the casing and provided with cam surfaces for lifting said bar and valve and holding the same in open position.

5. An automatic faucet comprising a casing having an internal valve seat, a vertically movable check valve normally resting on said seat, a removable nipple depending from said casing and having opposite longitudinal slots, each opening through the upper edge of the nipple and closed at the lower end, and a horizontally disposed lifting bar for said valve extending through said slots to the exterior of the nipple and adapted to fulcrum at the closed lower end of one slot when tilted to raise said valve.

6. A liquid discharge nozzle having a self closing gravity valve with a depending stem, a nipple removably secured to the discharge end of the nozzle and having opposite longitudinal slots open at their upper ends and closed at their lower ends, and a removable horizontal valve-lifting bar extending through and vertically movable in said slots and projecting at the exterior of the nozzle, and adapted to coöperate with said stem in raising the valve.

7. A liquid discharge nozzle comprising a casing having an internal valve-seat and a depending nipple, a removable gravity check-valve normally resting on said seat and having a depending stem, and a vertically movable valve-lifting bar extending through and projecting to the exterior of and removable from said nipple, said nipple being longitudinally slotted to receive said bar, said slots being closed at their lower ends to limit downward movement of the bar and to form fulcrums for said bar, substantially as described.

8. An automatic faucet comprising a casing having coupling means at its upper end and being internally threaded at its lower end, a valve section having an externally threaded upper end screwing into said lower end of said casing and at its upper edge forming a valve seat, a ball valve in said casing adapted to rest on said seat and close said section and at its lower portion having a threaded socket and at its upper portion formed to receive means whereby the valve can be rotated, an elongated vertically movable valve lifting bar having its ends projecting radially to be engaged and lifted by the upper edge of a glass, said bar arranged longitudinally below said section and formed integral with a valve stem projecting vertically through said section and at its upper end removably threaded into said valve socket, and means guiding said bar to reciprocate vertically.

9. An automatic faucet comprising a casing having an internal valve seat, and provided with a depending portion having opposite longitudinal slots therethrough closed at their lower ends to form fulcrums, a vertically movable gravity ball valve in said

casing adapted to rest on said seat and provided with a vertical depending stem secured thereto and having an elongated vertically movable valve-lifting bar extending radially through said slots and vertically movable therein, said bar adapted to be tilted vertically from either end to lift said valve and to fulcrum at its opposite portion at the lower closed end of one of said slots, all substantially as described.

10. An automatic faucet comprising a casing and a depending nipple having opposite longitudinal slots, a vertically movable check valve within the casing provided with a horizontally disposed lifting bar projecting radially through said slots and to the exterior of the nipple, and a movable normally inoperative sleeve arranged on the exterior of the nipple and having locking edges adapted when the sleeve is turned to traverse said slot and engage and lock the bar in elevated position.

In testimony whereof I affix my signature, in presence of two witnesses.

ANDREW P. TALLMADGE.

Witnesses:
JOHN L. FLETCHER,
ALVAH T. KASE.