P. J. MADDEN.

DRINKING FOUNTAIN.

APPLICATION FILED JAN. 5, 1912.

1,101,749.

Patented June 30, 1914.

3 SHEETS—SHEET 1.

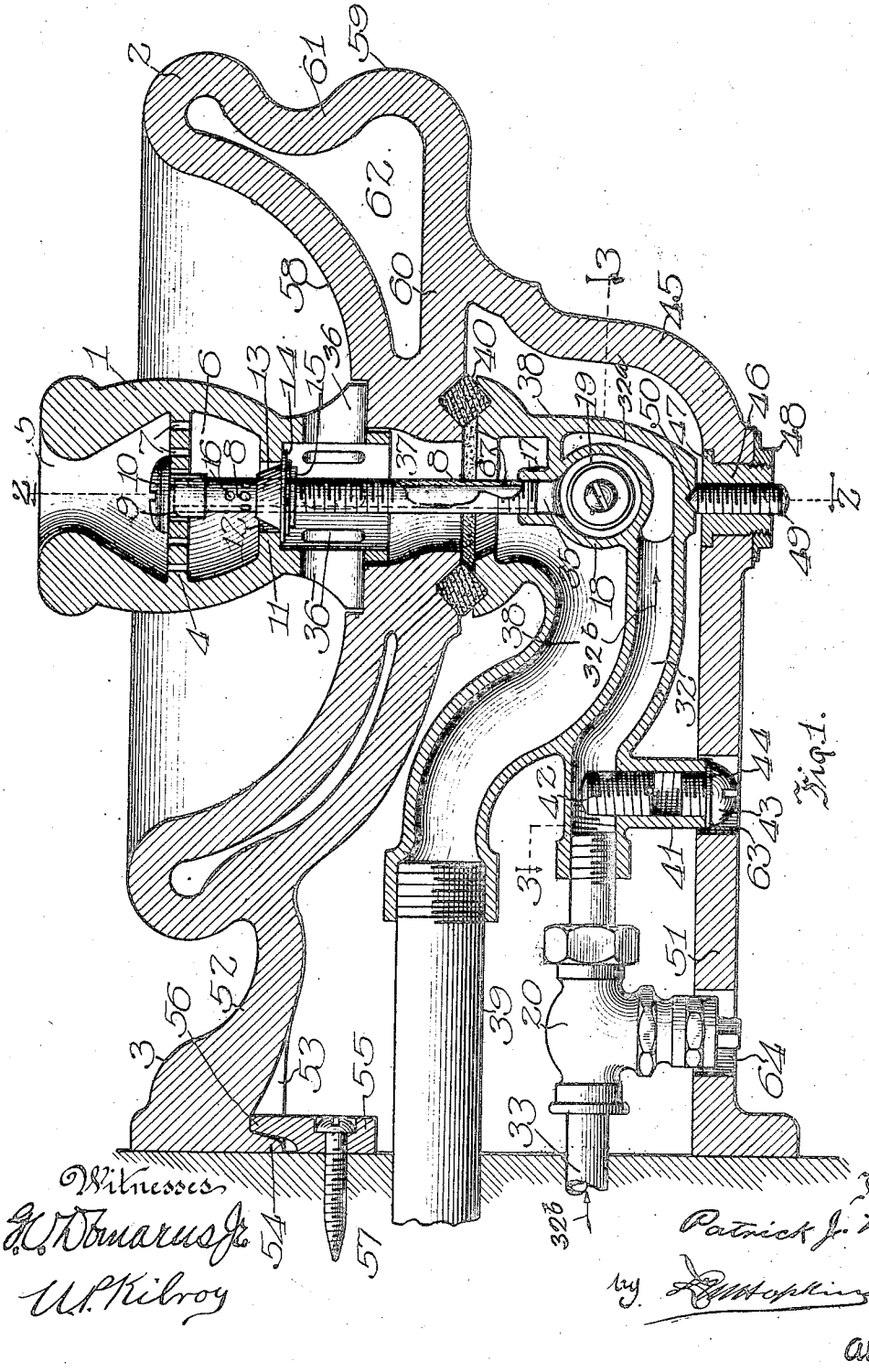


Fig. 1.

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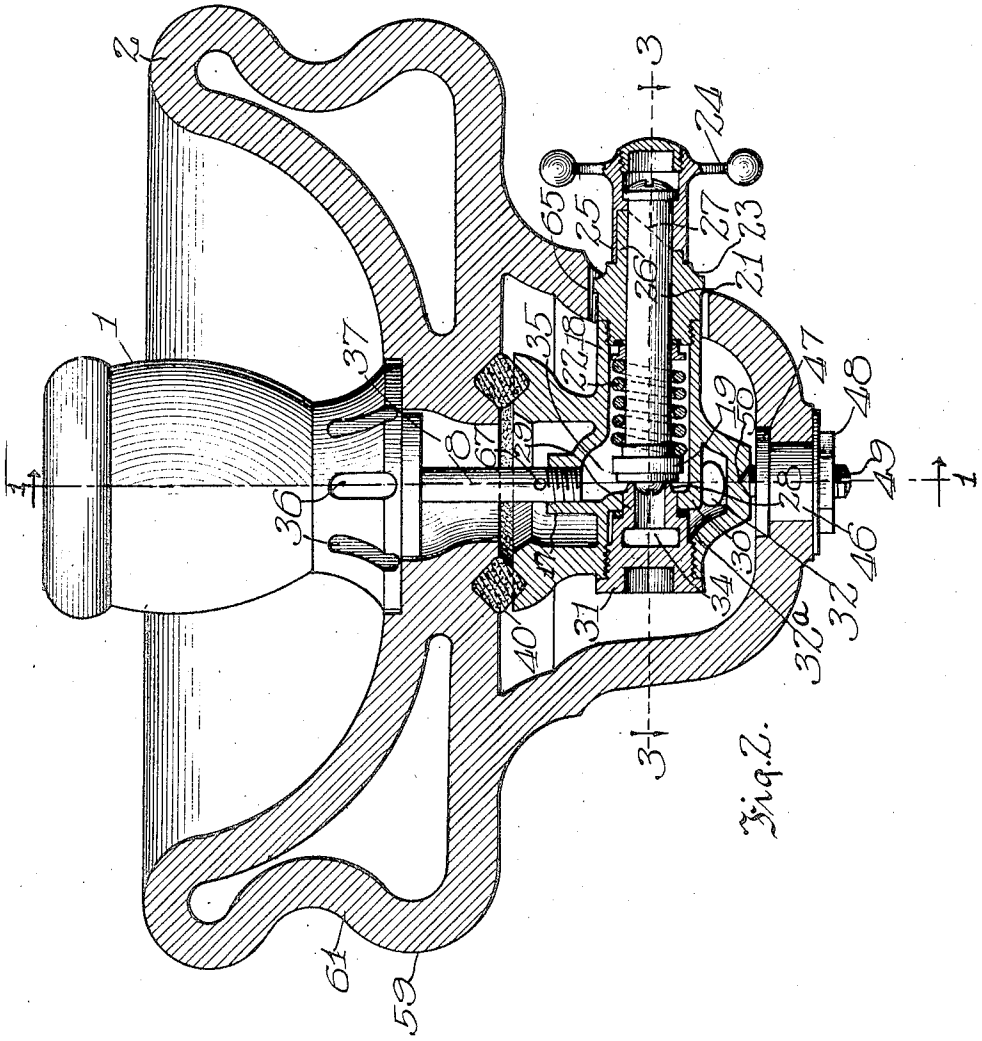


Fig. 2.

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3 SHEETS—SHEET 3.

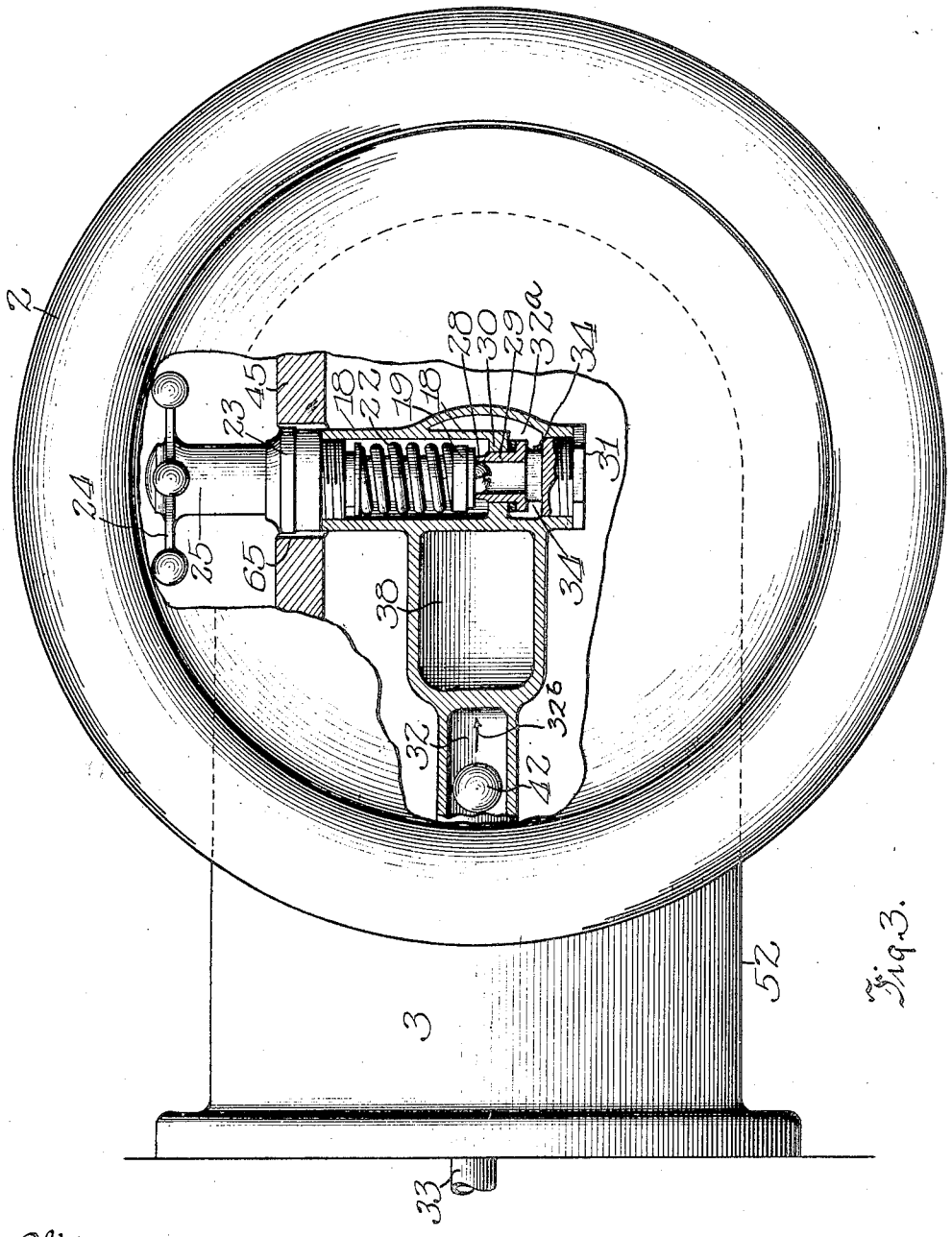


Fig. 3.

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UNITED STATES PATENT OFFICE.

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DRINKING-FOUNTAIN.

1,101,749. Specification of Letters Patent. Patented June 30, 1914.

Application filed January 5, 1912. Serial No. 669,587.

To all whom it may concern:

Be it known that I, PATRICK J. MADDEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Drinking-Fountains, of which the following is a specification.

For the purposes of this application the invention is illustrated as embodied in a drinking fountain of the "wall hung" type for the reason that my original aim and object was to provide an improved drinking fountain of this type, but several of the novel features of the invention are applicable to drinking fountains of other types, and I therefore desire to have it understood that I reserve to myself the exclusive right to use each of said several novel features for any purpose and in a device of any name or character whatsoever in which it may be found to be useful.

While the general object of the invention is to provide an improved drinking fountain, its specific objects are to improve certain features in the respects that will fully appear from the following description.

The invention consists in the features of novelty that are hereinafter described with reference to the accompanying drawings, which are made a part of this specification and in which—

Figures 1 and 2 are vertical sections of a drinking fountain embodying the invention, said sections being taken in planes that are perpendicular to each other and indicated by the lines 1—1 Fig. 2, and 2—2 Fig. 1, respectively. Fig. 3 is a view partly in plan and partly in horizontal section on the line 3—3, Figs. 1 and 2, of a drinking fountain embodying the invention, some of the parts above the plane of the line of section being broken away.

The invention relates more particularly to that class of drinking fountains in which there is a drinking cup, means for admitting water to the cup below its upper edge or rim and causing it to "bubble" up, so to speak, a basin for catching the waste water which over-flows the drinking cup and means for conducting said waste water to a waste pipe, through which it is ultimately discharged, means being also provided for supporting the basin.

The invention relates more particularly to that class of drinking fountains that have a basin and means for attaching it to and supporting it directly by the wall, as distinguished from supporting it either in whole or in part by a vertical pedestal or legs resting upon and rising from the floor.

The modern tendency, in response to the all-but imperative demand for sanitary conditions that are as near perfect as the practical application of the art affords, makes it necessary to avoid cracks and crevices as much as possible, especially wherever they would afford places for the lodgment of impure matter.

To this end the present invention contemplates the entire dispensing with legs or other support resting upon the floor, as impure matters are bound to accumulate between and around their feet, and as a substitute therefor, according to the present invention, the basin or receptacle is provided with a hollow bracket arm, one end of which joins the back of the waste-water basin, whence it extends rearward to a wall or other ultimate support to which it is directly secured through the medium of concealed supporting means. This hollow bracket arm is open at its rear end for the insertion and removal of the waste-water trap and the adjacent portion of the waste-water pipe, which trap and pipe are contained within and concealed by the bracket arm, which also contains and conceals the water supply pipe, the valve mechanism and parts accessory thereto. Another advantage of this rearwardly extending supporting bracket arm is that it positions the basin and drinking cup a considerable distance from the wall, and affords at least a chance for the feminine wearers of some hats in vogue at the present time to drink without disturbing them.

I am aware that a patent has heretofore been granted which shows the waste-water basin of a drinking fountain as being supported by a hollow horizontally arranged pipe, having within it a longitudinal web, or partition, which divides its interior into two horizontal passages, one of which serves to conduct the supply water to a vertically arranged discharge nozzle, while the other serves to carry off the waste water. But the mechanism shown by the particular patent here referred to is inapplicable and wholly impracticable for use in the heavy-looking massive forms which are characteristic of up-to-date plumbing fixtures. Furthermore, this divided pipe forms at one

and the same time the support and the water passages and is in no sense a housing for containing and concealing separate water passages which are made of ordinary pipe.

In the drawings the drinking cup is shown at 1, the basin at 2, and the means for supporting the basin at 3. Within the drinking cup, and extending completely across it, from side to side, is a diaphragm, 4, which divides the interior of the cup into two compartments or chambers 5 and 6, which are located the one above the other and are hereinafter called the bubbling chamber and the inlet chamber, respectively. As shown, the inner surfaces of the walls of the bubbling chamber converge upward and the diaphragm is provided with a number of upwardly presented perforations, 7, so located and arranged that streams of water issuing from them will impinge against the converging inner surfaces of the walls of the bubbling chamber, thereby causing the water to seek the center of the opening at the top of the bubbling cup and well up mound-like at this point. It is the intention that the pressure of the water be so regulated that a geyser-like jet will not rise above the top of the cup far enough to be broken up as it falls back into the cup, carrying with it more or less air and thereby produce a splash, but only sufficiently high to form a sort of a mound from which to drink. The perforated diaphragm amounts to nothing more nor less than a rose and it should be noted that none of the perforations of the rose is so located that a stream of water issuing from it will pass directly upward to the opening at the top of the cup but that, on the contrary, all of said perforations are so located that the streams issuing from them will impinge against the converging inner surface of the walls of the bubbling chamber and hence, even with a comparatively high pressure, the above described mound is produced and the forming of a jet rising an objectionable distance above the surface of the water in the cup is prevented.

The inlet chamber is supplied with water through a pipe, 8, which carries at its upper end a downwardly presented shoulder which rests upon an upwardly presented shoulder resulting from a central opening, 9, formed through the diaphragm (4) for the passage of the pipe 8. As shown in the drawings, this downwardly presented shoulder is provided by a cap, 10, which has threaded engagement with the pipe, 8, and has a notch or other feature for receiving a tool or wrench by which the cap may be screwed onto the pipe a greater or less distance and thereby move the pipe longitudinally relatively to the cap. Assuming that the pipe, 8, is held against end-wise movement, the turning of the cap onto it will produce a downward pressure upon the drinking cup, the bottom of which rests upon and is supported by the basin, and the upward strain thus exerted upon the pipe is transmitted through parts hereinafter described to the bottom of the basin. It therefore follows that the turning of the cap, 10, produces an endwise strain upon the pipe, 8, which acts downwardly upon the cup and upward against the basin whereby the cup and basin are firmly held together. In order that the pipe, 8, may reach and pass through the diaphragm, 4, the bottom, 11, of the inlet chamber, 6, is provided with an opening, 12, and a water-tight joint is formed between the cup and pipe, where the latter passes through the opening 12, by an elastic packing, 13, having a flange, 14, which bears against the under surface of the bottom of the inlet chamber and is forced upward by a clamping nut, 15, having threaded engagement with the pipe, 8. Within the inlet chamber the pipe, 8, is provided with a number of lateral openings or perforations, 16, through which water is discharged into the inlet chamber, and the lower end of the pipe has threaded engagement with an internally screw-threaded, annular flange, 17, projecting from the top side of the casing, 18, of a valve, 19, that controls the water supply. If desired, this valve may be omitted altogether, and in this event the supply of water to the drinking cup will be continuous so long as the supply cock, 20, is left open, but in order to economize in the use of water, where this is a desideratum, the valve, 19, is preferably of the self-closing type. To this end its stem, 21, is surrounded by a coil spring, 22, which exerts its pressure in one direction against the valve with a tendency to hold it closed upon its seat, and in the other direction against a ring, 23, which has threaded engagement with the valve casing, 18, whereby the ring is firmly held in place. The stem, 21, passes through the ring and is provided with a handle, 24, for turning it and this handle is provided with a sleeve, 25, which surrounds a cylindrical projection, 26, carried by the ring, 23, said sleeve and projection being provided with engaging, inclined cam-surfaces, whereby when the handle, 24, is turned in one direction, the stem, 21, will be drawn outward in opposition to the expansive force of the spring, 22, and unseat the valve, the valve being again seated by the expansion of the spring, 22, when the handle, 24, is relieved of pressure. The seat, 28, for the valve, 19, is formed on a hollow tube-like portion, 29, of a part or plug, 31, which extends through and closes an opening formed through the end, 30, of the valve casing, 18, and this plug also closes an opening in one wall of the water supply passage, 32^a, to which latter water is supplied from the main water sup-

ply pipe, 33, through a passage, 32. The hollow tube-like portion, 29, of the plug is of two diameters externally and the portion of larger diameter has ports, 34, communicating with the passage, 32^a, which ports together with the cavity of the plug constitute a water passage for conducting water from the passage, 32^a, to the interior of the valve casing, 18, so that water admitted from the pipe, 33, and flowing in the direction of the arrow, 32^b, reaches the lower end of the pipe, 8, through which it passes upward and escapes through the openings, 16, into the inlet chamber, 6.

The water over-flowing the drinking cup will fall into the basin, 2, pass through lateral openings, 36, in the hollow base or foot of the drinking cup, reach and pass through the outlet opening, 37, of the basin into the upwardly presented open end of a P-trap, 38, through said trap into the waste pipe, 39, and thence off to the final discharge. The valve casing, 18, and the trap, 38, are cast integrally and a rubber packing ring, 40, is interposed between the bottom of the basin and the upwardly presented end of the trap, said parts being grooved to receive the packing ring, so that when a screw, 49, is turned up, the basin and trap are drawn together so as to compress the packing ring and form a water-tight joint.

It is well known that the water pressure varies, to a considerable extent, in different locations and it is of course necessary that the pressure of the water supply to the drinking cup shall be adequate, but not excessive, otherwise the pressure would cause the water to rise too far above the drinking cup. These variations are due to various causes, but, regardless of the cause, according to the present invention the pressure of the water supply to each drinking cup is regulated by a simple device shown in Fig. 1. This device, or regulator, consists of a tubular projection, 41, the interior of which is screw-threaded and adapted to be engaged by a correspondingly threaded plug, 42, one end of which projects a greater or less distance into the passage, 32, and the other end of which is provided with a notch or other feature for receiving a screw-driver or other tool for turning and thereby adjusting it. It is manifest that to the extent that this plug projects into the passage 32, the latter is choked so that its capacity may be increased or decreased by properly adjusting the plug. For the purpose of preventing surreptitious adjustment of the plug and also preventing leakage past it, the outer end of the tubular projection, 41, is closed by a screw-cap or plug, 43, an elastic packing, 44, being interposed to form a tight joint.

The trap and waste pipe, the water supply connections, and the valve mechanism, excepting only the handle for manipulating the valve when a self-closing valve is used, are all concealed within a housing, 45, arranged beneath the basin. Immediately below the outlet opening, 37, the housing has an opening in which fits a sleeve, 46, having a flange, 47, which rests upon the upper surface of the bottom of the housing, the lower end of the sleeve being threaded and a clamping nut, 48, being turned onto its projecting threaded end so as to engage the lower surface of the bottom of the housing and thus hold the sleeve, 46, in place. The interior of the sleeve is screw-threaded and receives a screw, 49, the upper end of which occupies a socket, 50, in the bottom of the casting which forms the trap, so that by turning this screw in the proper direction, the trap and basin are forced in opposite directions, toward each other, with the result that the packing ring, 40, is compressed, thereby forming a water-tight joint between the trap and basin.

The means, 3, for supporting the basin is, in fact, a hollow bracket arm. This bracket arm is formed in part by a rearward continuation, 51, of the housing, 45, and an upward extension, 52, of this rearward continuation, the rearward continuation and upward extension being united to each other and the forward end of the upward extension being also united to the rear side of the basin. The hollow arm thus formed not only conceals the parts and gives the fixture a neat and finished appearance, but it serves, in whole or in part, to support the basin and its accessories. To this end the upward extension is provided in the under surface of its top portion with a recess, 53, resulting in a depending lug or rib, 54, within the bracket arm, and a bracket, 55, having an upwardly extending lip, 56, is secured to the wall, 57, so as to engage the lug and be within and concealed by the bracket arm. The rear end of the hollow bracket arm is completely open so that in order to secure the fixture in place, it is simply necessary to bring the rear end of the bracket arm in contact with the wall and then lower it until the rib or lug, 54, engages behind the lip, 56, of the bracket 55. This will amply support the basin and its accessories, and in order to prevent its accidental or mischievous disengagement from the bracket, means are provided for preventing the upward movement of the basin. For this purpose the water supply pipe, 33, or the waste pipe 39, may pass into or through openings in the wall with a snug fit so that they cannot move laterally in any direction. This, acting through the trap, 38, the screw, 49, and the housing, 45, will effectively prevent any upward movement of the basin.

The basin consists of a basin proper or receptacle, 58, and a jacket, 59, having a bottom portion, 60, which lies beneath the basin

proper, and a side portion, 61, extending upward from the portion, 60, and surrounding the sides of the basin proper, said basin proper and jacket being united around the outlet opening, 37, and also at the top or upper part of the basin, said basin proper and jacket being spaced apart so as to leave between them a space, 62. The portion, 60, of the jacket is also united to the top portion of the housing, 45. In fact, all portions going to make up the basin, the housing and the hollow supporting bracket are preferably integral and made of pottery or earthenware, so as to form a unitary structure.

It has been stated that the hollow bracket arm is laterally closed but this is not to be taken in a strict sense because the arm must be provided with suitable openings for giving access to any of the parts within it should this be desirable or necessary. For instance, it has an opening through which the sleeve, 46, passes, but this opening is closed by the sleeve itself. It has also an opening, 63, for giving access to the plug, 42, and cap, 43, but this opening is substantially closed by the cap and will not be present where the regulator, 41, is dispensed with. It also has an opening, 64, for giving access to the stop cock, 20, but this opening is substantially closed in a like manner. It also has an opening 65, for the passage of the casing and stem of the valve, 19, but this opening is closed in like manner and will not be present when the self-closing valve is dispensed with. For convenience in manipulating the valve, 19, the opening, 65, is preferably formed through the side of the housing while for obvious reasons the opening for containing the sleeve, 46, must be formed through the bottom of the housing. The openings, 63 and 64, also are preferably located at the bottom of the housing in order that they will not be visible to any appreciable extent when the fixture is in place. The term "laterally closed" must therefore be taken as meaning that the arm and housing are closed to the extent that they practically conceal all of the parts that are contained within the bracket arm.

The pipe, 8, is provided with a lateral perforation or minute leak hole, 67, which is located as near the interior of the valve casing, 18, as possible. The object of this leak hole is to drain the pipe, 8, and the chambers of the drinking cup.

By omitting the drinking cup and the accessories for supplying it with water and making the basin and remaining parts of appropriate size, a highly satisfactory basin for lavatories will result. It will require no actual floor space, will be perfectly efficient, and of comparative light weight, although of heavy massive appearance. But the modifications that are peculiar to this adaptation form the subject of a separate application which I am about to file as a division of this application.

Some features of the invention shown, described and claimed in the present application are divided out of my co-pending application which was filed June 15, 1909, under Serial No. 502,391, in which they are shown and described but not claimed, which has since eventuated in Patent No. 1,038,916, dated Sept. 17, 1912.

What I claim as new is:

1. A drinking fountain having a basin provided at the bottom with a vertical outlet opening, a hollow bracket arm which joins the rear side of the basin, its rear end being open for the insertion and removal of a waste trap and the adjoining portion of a waste pipe, said rear end being provided with means for engaging a suitable support, a drinking cup located within and supported by the basin, said cup having ports or passages through which waste water may flow from the basin to the outlet opening, a trap located within the hollow bracket arm and having an upwardly presented branch having an open end registering with the outlet opening of the basin, said trap having also a discharge branch, a waste water pipe communicating with said discharge branch, a valve device having a casing located within the trap, a water supply pipe communicating with said casing, a second pipe also communicating with said casing whence it extends upward through the outlet opening of the basin and communicates with the interior of the cup, said valve device having a valve for controlling the flow of water from the water supply pipe to the aforesaid second pipe.

2. A drinking fountain having a basin provided at the bottom with a vertical outlet opening, a hollow bracket arm which joints the rear side of the basin, its rear end being open for the insertion and removal of waste pipe connections, said rear end being provided with means for engaging suitable supporting means, a drinking cup located within and supported by the basin, said cup having ports or passages through which waste water in the basin may flow to the outlet opening, a fitting located within the hollow bracket arm and having an upwardly presented branch having an open end registering with the outlet opening of the basin, said fitting having also a discharge branch, a waste water pipe communicating with said discharge branch, a valve device having a casing located within the fitting, a water supply pipe communicating with said casing, a second pipe also communicating with said casing whence it extends upward through the outlet opening of the basin and communicates with the interior of the drinking cup, said valve device having a valve

for controlling the flow of water from the water supply pipe to the aforesaid second pipe.

3. A device of the class described, having in combination, a drinking cup having within it a rose crossing it from side to side and dividing it into a bubbling chamber and an inlet chamber, said cup having an opening formed through the bottom of the inlet chamber, a pipe passing through said opening and also through the rose, a downwardly presented shoulder on said pipe engaging the upper side of the rose, a rubber gasket surrounding the pipe and adapted to close the opening through the bottom of the inlet chamber, a jam nut turned on the said pipe and engaging the rubber gasket, and means for supplying the pipe with water.

4. A device of the class described, having in combination, a basin provided at its bottom with a water outlet, a drinking cup within the basin, said drinking cup having ports or passages through which water may flow from the basin to the outlet, a trap having an upwardly presented open end registering with the outlet opening and having also a discharge branch, a pipe communicating with the drinking cup and extending downward through the outlet opening and into the trap, a water supply pipe, hollow parts providing a passage or waterway through which water may flow from said water supply pipe to the pipe first aforesaid, and a valve for controlling the supply of water to the drinking cup.

5. A device of the class described, having in combination, a basin provided at its bottom with an outlet opening, a drinking cup seated within the basin and having ports or openings through which the water may flow from the basin to the outlet opening, a trap having an upwardly presented open end registering with the outlet of the basin and having also a discharge branch, a pipe communicating at its upper end with the drinking cup and extending downwardly through the outlet opening of the basin and into the trap, a valve casing within the trap with which the lower end of the pipe aforesaid communicates, a water supply pipe communicating with the interior of said valve casing, and a valve in said casing for controlling communication between said water supply pipe and the pipe first aforesaid.

6. A device of the class described having in combination a basin having at its bottom an outlet opening, a trap having an upwardly presented open end registering with said outlet opening and having also a discharge branch, a drinking cup in the basin, a pipe communicating with the drinking cup and extending thence downward through the outlet opening and into the trap, a valve device having a casing located within the trap, with which the pipe aforesaid communicates, a part occupying and closing an opening with which the valve casing is provided, a water supply pipe, a passage with which it communicates, the part, aforesaid, being provided with a water passage communicating with the passage first aforesaid and also with the interior of the valve casing and a valve for controlling the water passage through the part.

7. A device of the class described having in combination a basin having at its bottom an outlet opening, a trap having a branch communicating with said outlet opening and having also a discharge branch, a drinking cup in the basin, a pipe communicating with the drinking cup, whence it extends downward through the outlet opening and into the trap, a valve device having a casing located within the trap with the interior of which casing said pipe communicates, the trap and valve casing being permanently united with each other to form a unitary structure.

8. A device of the class described having, in combination, a basin having an outlet opening formed through its bottom, a P-trap having an upwardly presented opening communicating with said outlet opening, a drinking cup in said basin, a pipe, for supplying the cup with water, communicating with the cup whence it extends downward through said outlet opening and into the trap, a main water-supply pipe, a valve device having a casing located within the trap between the main water-supply pipe and the pipe for supplying water to the cup, and a valve in the valve casing for controlling the flow of water therethrough, the trap and valve casing being formed of an integral casting.

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