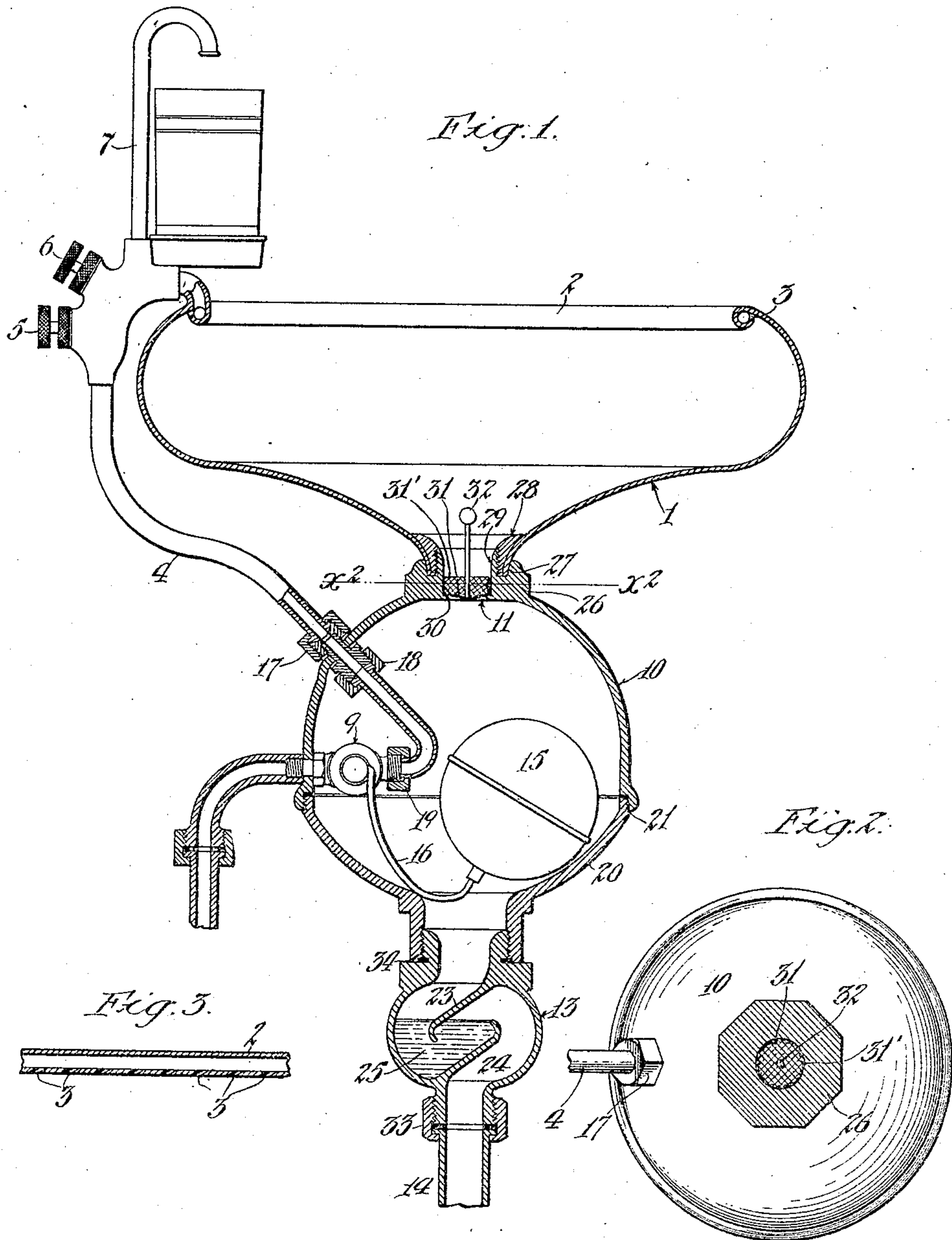


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 AUTOMATIC CUT-OFF FOR CUSPIDORS AND OTHER HYDRAULIC DEVICES.
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UNITED STATES PATENT OFFICE.

DON JUAN MERRICK AND CHARLES J. FUNK, OF REDONDO BEACH, CALIFORNIA.

AUTOMATIC CUT-OFF FOR CUSPIDORS AND OTHER HYDRAULIC DEVICES.

944,741.

Specification of Letters Patent.

Patented Dec. 28, 1909.

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To all whom it may concern:

Be it known that we, DON JUAN MERRICK and CHARLES J. FUNK, citizens of the United States, residing at Redondo Beach, in the county of Los Angeles and State of California, have invented a new and useful Automatic Cut-Off for Cuspidors and other Hydraulic Devices, of which the following is a specification.

This invention is intended for use in connection with dental cuspidors, although some features of the invention are applicable in connection with any hydraulic device which is liable to accidental overflow by clogging of the waste pipe thereof.

The main object of the present invention is to provide for cutting off the supply of water to the cuspidor or the device when the waste thereof becomes clogged.

Another object of the invention, in connection with dental fountain cuspidors, is to provide improved means for catching the waste gold, etc.

Another object of the invention is to provide improved means for distributing the flow of water on the inside of the cuspidor bowl.

Other objects of the invention will appear hereinafter.

The accompanying drawings illustrate the invention: Figure 1 is a vertical section of the cuspidor with its supply controlling devices and waste connections. Fig. 2 is a section on the line x^2-x^2 in Fig. 1. Fig. 3 is a sectional development of the bowl rim showing the means of water distribution.

1 designates the cuspidor bowl which may be of the usual rounded funnel shape having a roll rim 2 at its upper edge, said rim being formed as a pipe or tube extending around the circumference of the bowl and provided with a circular series of perforations 3 close to the inside of the wall of the bowl, said perforations all extending obliquely in the same direction as indicated in Fig. 3, so as to cause the water delivered therefrom to pass spirally along the inside of the bowl wall to effectually wash the interior of the bowl. The supply pipe 4 for the bowl communicates into the tubular rim member 2 aforesaid and is provided with a manually operated valve 5 for controlling the supply. Another manually operated valve 6 may also be provided for controlling supply to the usual faucet 7. An automatic valve 9 is further provided in this supply pipe above

mentioned for cutting off the supply of water when the waste becomes stopped up.

The waste connections for the bowl comprise a float chamber 10 directly beneath the bowl and connected thereto, said chamber communicating at its upper end with the outlet 11 of the bowl and communicating at its lower end with a trap member 13 from the bottom of which the waste connection 14 leads to the usual waste pipe. A float member 15 is pivotally mounted by an arm 16 so as to be vertically movable in the float chamber 10 and said arm is connected to operate the automatic valve 9 for the water supply pipe 4. For this purpose said arm 16 may be directly connected to the plug of valve 9, and in order to avoid the extension of a moving part through the wall of the float chamber, said valve is preferably located inside the chamber, the supply pipe 4 being extended through the wall of the chamber. Unions 17, 18 and 19 are provided for facilitating connection of this pipe within the float chamber, the lower portion of said chamber being formed as a separate member 20 screwed at 21 into the upper portion thereof so as to permit of insertion and connection of the aforesaid parts within the float chamber.

The trap member 13 consists of a chamber having a wall 23 extending obliquely downward at one side of its inlet and a wall 24 extending obliquely upward from the opposite wall of its outlet, these walls overlapping one another so that the upwardly extending wall 24 extends above the bottom of the downwardly extending wall 23, the wall 24 and the adjacent wall of the chamber 13 forming a pocket 25 for retaining waste water and the wall 23 extending down into the waste water so retained to form a trap, preventing flow of sewer gas from the waste pipe 14 into the float chamber 10.

The inlet opening 11 of the float chamber which also constitutes the outlet opening of the bowl is preferably formed in a head 26 at the top of the float chamber, said head having in its top an annular groove 27. The outer wall of said groove extends obliquely inward and downward to fit the correspondingly extending lower end of bowl 1 and a clamping ring 28 screwing on the screw threaded annular flange 29 on head 26 has its outer wall upwardly flared to fit the inside of the lower end of the bowl so as to compress the bowl against the outer wall 27

when such screw ring is screwed onto the flange 29 aforesaid, the screw ring 28 extending between the wall 27 and flange 29 and acting as a wedge to clamp the parts in position. The head 26 is further provided with an inwardly extending flange 30 on which rests a perforated disk or screen 31 having a handle 32 extending upwardly within the bowl 1, whereby the screen may be removed when necessary. Screen 31 has an upturned rim or flange 31'. Said screen is sufficiently fine to catch most of the gold particles, etc. that may find their way into the bowl and such particles as are too fine to be caught by the screen will collect in the waste pocket 25 and may be removed from time to time by uncoupling the union 33 and then unscrewing the trap at the screw joint 34.

The float valve chamber or casing 10 being detachably connected to the trap 13 and to the cuspidor 1 by screw connections as shown, the parts may be detached from one another for inspection and cleaning. By making the float chamber separate from the cuspidor the bottom of the cuspidor is kept free from obstruction and the device is thereby rendered more sanitary. The float chamber 10 being formed in two portions detachably connected at 21, the float and the valve operated thereby are readily accessible at any time and as the valve and connecting parts are carried and inclosed within the upper part of the float chamber, these parts may be removed bodily, together with the cuspidor, for inspection and repair, etc. The advantage of locating the valve 9 in the water supply connection within the float chamber is that such a construction enables the mechanical connection for operation of the valve to be made extremely simple and also prevents a neater appearance at the outside of the device.

The operation is as follows:—In normal operation the float 15 is depressed in the position shown in Fig. 1 and the water supply is controlled by the valve 5 according to requirements the water flowing from the distributing pipe or member 2 obliquely or spirally along the bowl wall and running through the outlet 11 into chamber 10, thence through trap 13 to the waste pipe 14. If for any reason the waste pipe clogs or becomes stopped up the water will back up in the float chamber and as the water accumulates therein the float 15 will be lifted and will eventually close the valve 9, cutting off the supply of water so that there is no liability

of overflow of the bowl during such clogging of the waste pipe.

The automatic cut-off means may be used in connection with any hydraulic device, such as a bowl, bath tub, etc., having a waste pipe.

What we claim is:

1. A dental cuspidor having an outlet in its bottom, a float chamber detachably connected at its top to the outlet portion of the cuspidor, a water supply connection for the cuspidor provided with a valve, and a float within the float chamber connected to said valve to close the valve on rise of water in the float chamber.
2. A dental cuspidor having an outlet in its bottom, a float chamber detachably connected at its top to the outlet portion of the cuspidor, a water supply connection for the cuspidor provided with a valve, a float within the float chamber connected to said valve to close the valve on rise of water in the float chamber, and a trap detachably connected to the lower end of the float chamber and provided with outlet means.
3. A dental cuspidor having an outlet in its bottom, a float chamber detachably connected at its top to the outlet portion of the cuspidor, a water supply connection for the cuspidor provided with a valve, and a float within the float chamber connected to said valve to close the valve on rise of water in the float chamber, said float chamber being formed in upper and lower portions detachably connected together.
4. A dental cuspidor having an outlet in its bottom, a float chamber detachably connected at its top to the outlet portion of the cuspidor, a water supply connection for the cuspidor provided with a valve, a float within the float chamber connected to said valve to close the valve on rise of water in the float chamber, said float chamber being formed in upper and lower portions detachably connected together, the water supply connection for the cuspidor having a portion extending within the upper portion of the float chamber, and the valve in said water supply connection being within and carried by this upper portion of the float chamber.

In testimony whereof, we have hereunto set our hands at Los Angeles, California, this 7th day of November, 1908.

DON JUAN MERRICK.

CHAS. J. FUNK.

In presence of—

ARTHUR P. KNIGHT,
FREDERICK S. LYON.