No. 871,312

PATENTED NOV. 19, 1907.

W. J. WILLIAMS.

COFFEE URN.

APPLICATION FILED FEB. 9, 1907.

FIG. 1.

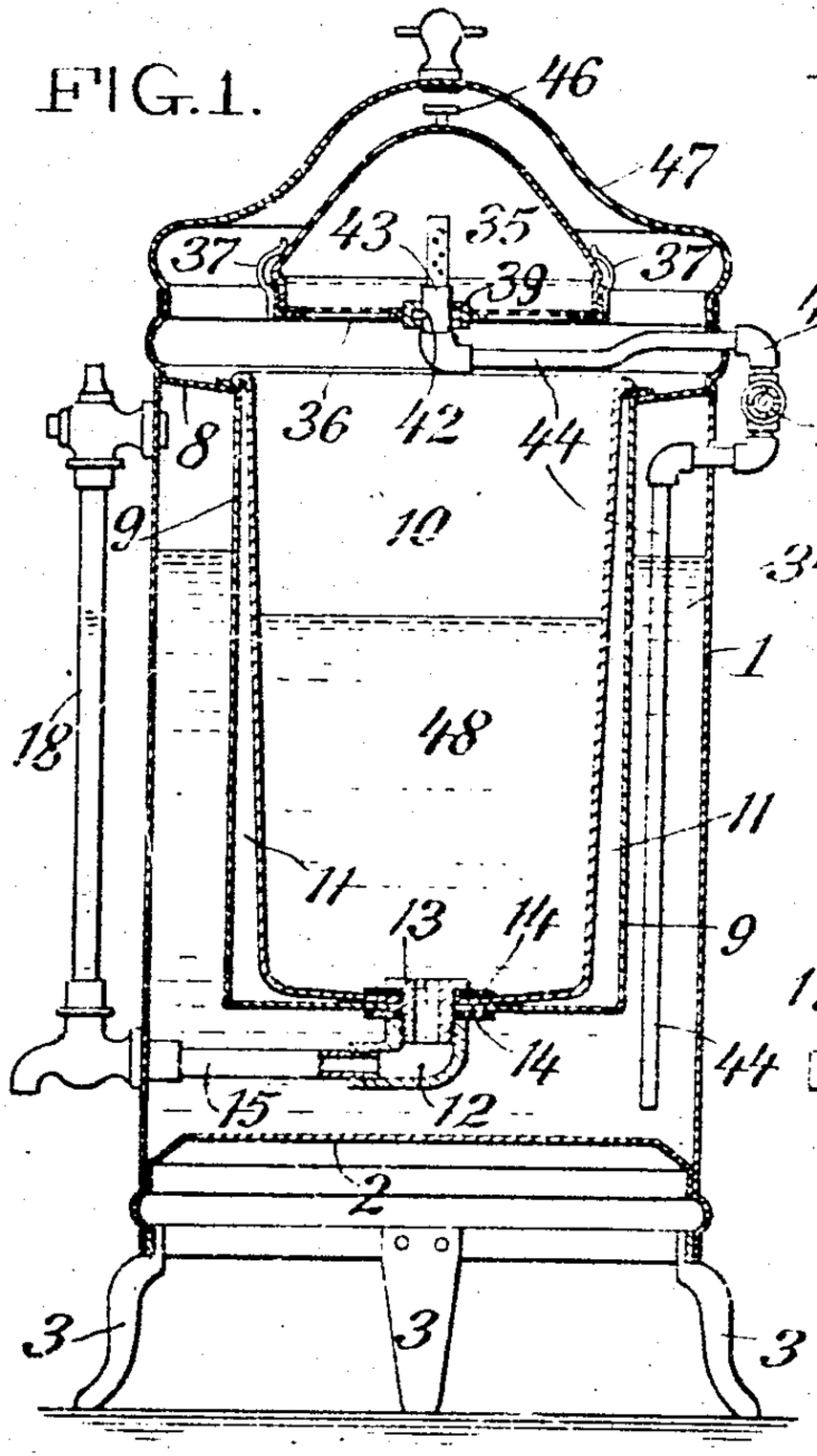


FIG. 2.

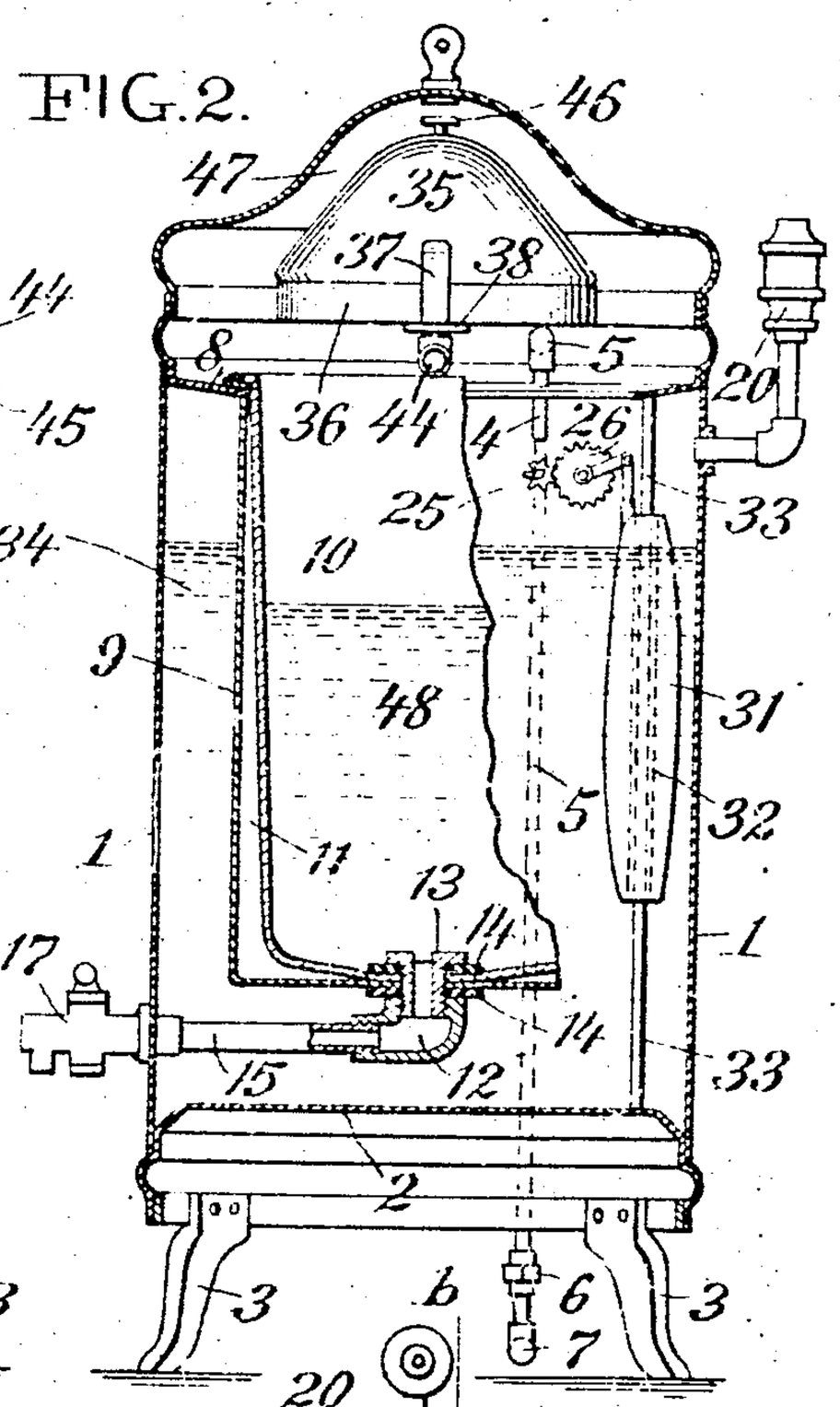


FIG. 5.

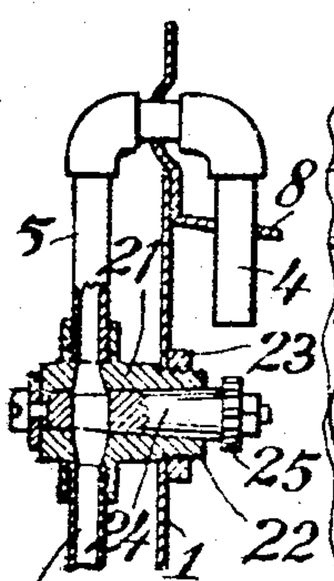


FIG. 4.

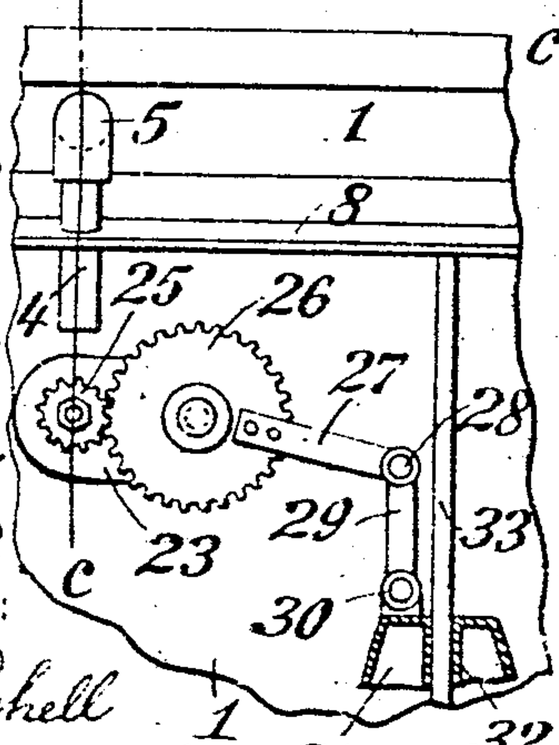
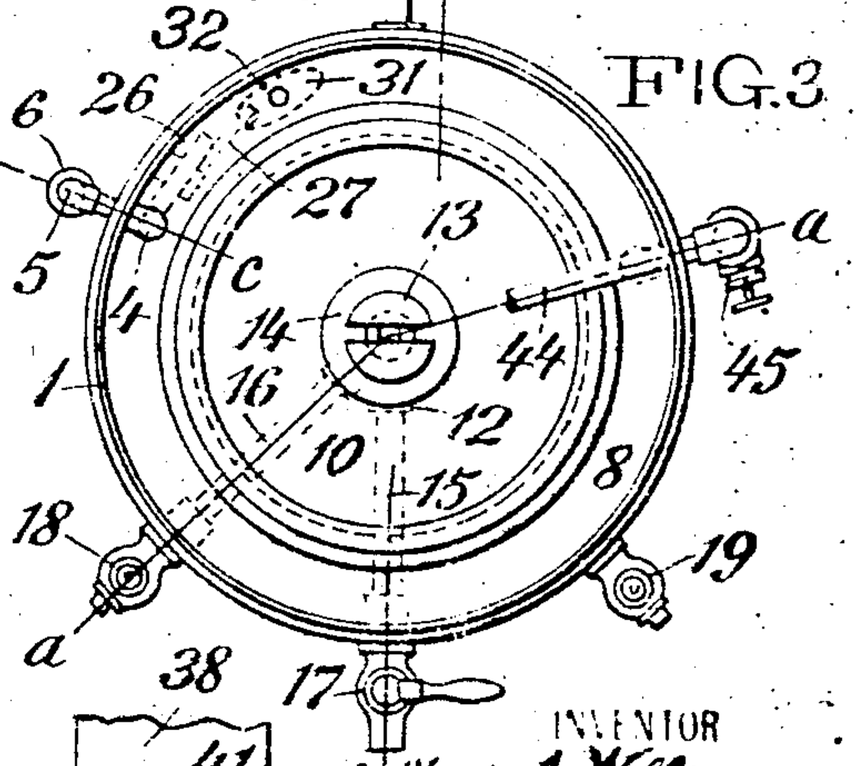


FIG. 3



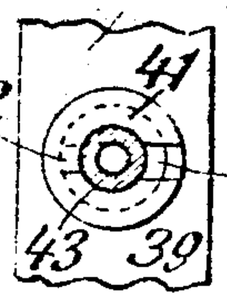


FIG. 6.

WITNESSES:

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COFFEE-URN.

No. 871,312. Specification of Letters Patent. Patented Nov. 19, 1907.

Application filed February 9, 1907. Serial No. 356,620.

To all whom it may concern:

Be it known that I, WALTER J. WILLIAMS, a citizen of the United States of America, residing at the borough of Brooklyn, city of New York, State of New York, have invented a new and Improved Coffee-Urn, of which the following is a specification.

This invention relates more especially to maintenance of the water supply to the main urn jacket or boiler from which hot water is discharged into a percolator delivering liquid or drip coffee into a subjacent crock or reservoir from which it is drawn for use.

The principal object of the invention is to provide for automatic supply or feed of water to the urn jacket or boiler after hot water passes therefrom to the drip coffee percolator, whereby a single urn structure is made quite as effective in use as a triple-urn comprising a central urn and two opposite side urns taking hot water alternately from the central urn for maintaining supply of liquid coffee.

A triple-urn apparatus is expensive and requires considerable labor to maintain the water supply by the usual hand-feeding, and to frequently clean and otherwise care for the three urns, which also require considerable gas or other fuel to operate them.

By this simple invention hand-feeding of water to an urn boiler is made unnecessary thus entirely avoiding the usual splashing of the feed water and obviating frequent cleaning of the apparatus. Burning out of the boiler bottom also is prevented, and the volume or amount of heating fuel is reduced to a minimum, while the coffee-making capacity of a single urn is increased to an extent making a triple-urn unnecessary in very many places where apparatus of this character is used.

The invention comprises water supply controlling mechanism including a float located in the main jacket or water boiler of the urn and means connecting the float to a valve fitted in a constantly connected main water supply pipe whereby, after a valve in the percolator charging pipe is opened to allow hot water to flow from the boiler to and through the percolator for making a charge of liquid coffee, the main water supply valve is opened by fall of the float with the lowering water level in the boiler to automatically admit water to the boiler to compensate for the hot water so drawn off to the percolator.

The invention also includes certain details of construction of the automatic water supply controlling mechanism, and of the sanitary percolator, and of other parts of the urn, all as hereinafter described and particularly pointed out in the appended claims.

Reference is made to the accompanying drawings forming part of this specification, and in which

Figure 1 is a vertical section of the improved urn taken on the line *a*—*a* in Fig. 3. Fig. 2 is a vertical sectional view taken on the line *b*—*b* in Fig. 3, with the jacketed liquid coffee reservoir partly broken away to show the boiler feed valve operating mechanism. Fig. 3 is a plan view of the urn with its cover and drip coffee percolator removed. Fig. 4 is an enlarged detail elevation of the main water supply valve and part of the float and the gearing controlling the valve from the float. Fig. 5 is a detail vertical section taken on the line *c*—*c* in Figs. 3 and 4; and Fig. 6 is an enlarged detail sectional plan view showing the locking connection of the two-part removable percolator with the hot water discharge nozzle.

The numeral 1 indicates the main outside urn jacket or boiler having a bottom 2, and sustained by legs 3 at suitable height to allow a gas or spirit lamp or other heater to be arranged under the boiler for heating the water supplied to it through the nozzle 4 of a feed pipe 5. This pipe is connected by a union 6 with a pipe 7 leading to a street main or tank or other source of constant water supply. At the top of the water jacket 1 there is a rim 8 to which is soldered the flanged upper end of an inner open-topped jacket 9 in which is placed the liquid coffee crock or reservoir 10. The parts 9, 10 are spaced apart to provide between them an air chamber 11 preventing excessive cooling or heating of the liquid coffee in the reservoir. A pipe coupling 12 is held to the parts 9, 10, by an inner hollow screw plug 13 entering the coupling 12, suitable washers 14, 14, being preferably interposed at shoulders of said parts 12, 13, to assure fluid tight joints preventing leakage of coffee from the reservoir 10 to the boiler 1, and also preventing passage of water from the boiler to the reservoir at these bottom connections. To the coupling 12 are fastened the inner ends of two pipes 15, 16, which are respectively connected to a coffee drawing faucet 17, and

to a glass gage 18 indicating the quantity of liquid coffee in the reservoir. A glass gage 19 held to the boiler 1, indicates the level of the water therein, and the usual safety blow-off device 20 is connected near the top of the boiler.

In the pipe 5 is fitted a valve casing 21 which has a threaded stem 22 passed through the side wall of the boiler 1 and screwed into a bearing plate 23 soldered inside the boiler, thus making a firm connection of the pipe 4—5 whose part 4 extends downward through the boiler flange 8 to discharge water into the boiler from the pipe under control of any suitable valve fitted in the casing 21. The valve shown is a plug valve 24 whose stem fixedly carries a toothed wheel or pinion 25 which meshes with a larger gear wheel 26 journaled on a stud fixed to the plate 23. To the wheel 26 is fixed an arm or lever 27 the outer end of which is pivoted at 28 to a link 29 which is pivoted at 30 to lugs fastened to the top of a float 31 preferably having a central tube 32 receiving a rod 33 fastened to top and bottom walls or parts of the boiler. This rod 33 smoothly guides the float as it rises and falls with the level of the water 34 in the boiler. The tubular support of the float upon the single guide rod 33, and the connections of the gearing link 29 quite closely to this rod, prevents binding of the float on the rod. Vertical movement of the float between the side walls of the two jackets 1, 9, causes positive rotation of the gear wheels for turning the valve 24 to close it or to open it more or less as the level of the water 34 in the boiler rises and falls for automatically maintaining proper supply of water to the boiler to compensate for hot water drawn therefrom through suitable pipe connections to the drip coffee percolator next described.

It is common in urns of this class to use a percolator made of a woven fabric bag suspended in or at the top of the liquid coffee reservoir. These textile bag percolators soon become dirty and malodorous and unsanitary. To avoid these unsatisfactory conditions of use the improved percolator herein shown is made of non-textile material and preferably of sheet metal which will not easily corrode, such as aluminium. The percolator has two main parts, or a body portion 35 preferably having the cone shape illustrated in Figs. 1 and 2 of the drawings, and a bottom upwardly flanged cover portion 36 the rim of which may carry any suitable spring or other catches 37 adapted to hold or lock the two closed parts 35, 36 securely together while in use. The lower wall or face of the cover 36 is a finely perforated plate through which the hot liquid coffee may drip into the crock or reservoir 10, without permitting passage of the coffee grounds. The cover 36 also preferably carries a cross-bar 38 having sufficient strength to rigidly sustain a metal collar or seat 39 soldered to the bar. This collar has a bottom radial slot 40 opening into a curved or concentric groove 41 formed above it in the collar. Said slot 40 permits entrance of a key or lug 42 fixed to the lower solid portion of a nozzle 43, the upper portion of which is perforated radially to permit wide spraying of water issuing from the pipe nozzle through the surrounding ground coffee in the percolator. The nozzle 43 connects with a pipe 44 which first passes horizontally and outward through the side wall of the boiler 1 in order to have fitted in it an outside easily accessible valve 45, whence the pipe passes inward through the boiler wall and thence downward nearly to the bottom 2 of the boiler, as best shown in Fig. 2 of the drawings. The percolator body 35 has a top knob or handle 46 by which the entire percolator may be first turned to unlock it from the nozzle 42, and may then be lifted therefrom. The usual ornamental cover 47 is flange-fitted within the top of the jacket or boiler 1 and entirely conceals the percolator and its inside pipe connections 43, 44.

The operation of this improved urn is very simple and effective. To make a charge of drip-coffee in the crock or reservoir 10, water first enters the boiler 1 through the pipe 5—4 and its open valve 24 until the float 31 is lifted sufficiently far to operate the gearing 25 to 29 and close this valve. The gas or other burner operating below the boiler bottom 2, heats the water in the boiler. Meanwhile the urn cover 47 is removed and the percolator 35, 36 is turned partly around to bring its collar notch 40 into line vertically with the pipe nozzle stud 42, and the percolator then is lifted bodily from the pipe nozzle 43 and is inverted and its bottom 36 is removed and a sufficient quantity of ground coffee is filled into the percolator top 35. The cover 36 is again applied and latched to the top 35 and the percolator is inverted and is again placed by its collar 39 upon the nozzle 43 and is turned partly around to lock its collar to the pipe nozzle by engaging the collar slot 41 with the nozzle stud 42. The main cover 47 now is applied to the urn. When the water 34 in the jacket 1 is boiling as indicated by steam issuing from the safety device 20, the valve 45 in the pipe 44 is opened by hand and the developed steam pressure in the boiler forces the boiling water and steam upward through the pipe 44 and out of its perforated nozzle 42 and through the ground coffee in the percolator 35 36, and will extract all desirable qualities from the ground coffee and the liquid coffee 48 so made will pass or drip downward through the percolator bottom 36 into the crock or reservoir 10, while at the same time the coffee level will be indicated at the glass gage 18 to notify the attendant

when to close the valve 45 and cut-off flow of water from the boiler 1 to the percolator. During this automatic transfer of water from the boiler 1 to the percolator the water level in the boiler falls and the float 31 falls with it thereby operating the gearing 25 to 29 to again open the valve 24 and thus automatically renew the supply of water 34 to the boiler, and immediately the float 31 rises sufficiently high the gearing 25, 29 again closes the valve 24 and thus cuts-off the water supply.

In using this improved self-contained urn the water supply is maintained in the main jacket or boiler 1 automatically and directly from the main supply pipe 7, and all labor of filling the boiler by hand through a side spout on the boiler is avoided whereby the whole urn is kept cleaner and more attractive in appearance with less labor of the attendant, and there is also no danger of burning out the boiler bottom 2 because of lack of water in the boiler. The inner jacket 9 surrounding the liquid coffee reservoir 10 and spaced from it to form the air-chamber 11, obviates overheating of the liquid coffee in the reservoir, and said jacket 9 also is specially useful in avoiding overchilling of the liquid coffee by preventing direct contact with the reservoir 10 of the cold water admitted to the boiler through the valve 24. The liquid coffee 48 stored in the reservoir 10 will be drawn therefrom through the faucet 17 as required for use. The non-textile or metallic percolator also may be very quickly and easily removed and cleaned after making one or more charges of liquid coffee, thus wholly avoiding the uncleanly and malodorous and unsanitary conditions attending the use of the common bag percolator, and the produced liquid coffee is as satisfactory in all respects as that made in the expensive triple-urn apparatus hereinbefore mentioned

This invention is not limited to the illustrated form of boiler float and the gearing connecting the float with the main water supply valve, as these parts or devices may be modified in various ways within the scope of one or more of the appended claims.

I claim as my invention:—

1. An urn comprising an outer closed jacket or boiler, a liquid coffee reservoir therein, a drip coffee percolator separate from the boiler and discharging into said reservoir, valve-controlled pipe connections between the boiler and percolator, a main constantly connected water supply pipe opening to the boiler, a valve in said main supply pipe, a float in the boiler, and means connecting said float to the main supply pipe valve and normally closing said valve when the percolator pipe valve is closed and opening said main pipe valve to automatically maintain water supply to the boiler after the percolator pipe valve is opened to allow hot water to pass from the boiler to and through the percolator to the liquid coffee reservoir, substantially as described.

2. An urn comprising an outer closed jacket or boiler, a liquid coffee reservoir therein, a drip coffee percolator separate from the boiler and discharging into said reservoir, valve-controlled pipe connections between the boiler and percolator, a main constantly connected water supply pipe opening to the boiler, a valve in said main supply pipe, a guide in the boiler, a float movable on said guide, wheel gearing coupled to the valve stem, and a system of levers coupling said gearing to the float and normally closing said main supply pipe valve when the percolator pipe valve is closed and opening said main pipe valve to automatically maintain water supply to the boiler after the percolator pipe valve is opened to allow hot water to pass from the boiler to and through the percolator to the liquid coffee reservoir, substantially as described.

3. An urn comprising an outer closed jacket or boiler, a liquid coffee reservoir therein, a drip coffee percolator separate from the boiler and discharging into said reservoir, valve-controlled pipe connections between the boiler and percolator, a main constantly connected water supply pipe opening to the boiler, a valve in said main supply pipe, a float in the boiler, and means connecting said float to the main supply-pipe valve and normally closing said valve when the percolator pipe valve is closed and opening said main pipe valve to automatically maintain water supply to the boiler after the percolator pipe valve is opened to allow hot water to pass from the boiler to and through the percolator to the liquid coffee reservoir, said reservoir having an external jacket providing an air-space and preventing cooling of the liquid coffee in the reservoir during renewal of water supply to the boiler, substantially as described.

4. An urn comprising a main closed jacket or boiler, a liquid coffee reservoir therein, a percolator separate from the boiler. and adapted to discharge into said reservoir, and pipe connections extending from within the boiler and terminating in a perforated nozzle sustaining the percolator and discharging therein, said percolator being made of non-textile material and in two separable parts, one part having a perforated wall through which the liquid coffee drips to the reservoir and also having a collar adapted for seating upon the pipe nozzle, substantially as described.

5. An urn comprising the main closed jacket or water boiler 1, an inner jacket 9, a liquid coffee reservoir 10 within the jacket 9 which provides an air chamber 11 around said reservoir, and liquid coffee outlets including a hollow plug 13 passing through the

parts 9, 10, a pipe coupling 12 connected to the plug 13, pipes 15, 16 connected to coupling 12, a faucet 17 on the pipe 15, and a gage 18 on the pipe 16, substantially as described.

6. An urn comprising the main closed jacket or water boiler 1, an inner drip coffee reservoir, a pipe 44 valved at 45, a percolator sustained separately from the boiler on the pipe 44 above the reservoir, a guide 33 in the boiler 1, a float 31 on said guide, a water supply pipe 5—4 having a valve 24, a pinion 25 on the valve 24, a gear wheel 26 engaging said pinion and having an arm or lever 27, and a link 29 coupling the lever 27 to the float 31, substantially as described.

7. An urn comprising the main closed jacket or water boiler 1, a drip coffee reservoir therein, a superposed percolator separate from the boiler and made in two parts 35, 36, the latter having a perforated bottom discharging into the reservoir and provided with a collar 39 having a radial slot 40 and a communicating curved or concentric groove 41, and a pipe 44 entering the boiler and having a nozzle adapted to sustain the percolator and carrying a stud 42 adapted to enter the collar slot 40 and interlock with the collar groove 41, substantially as described.

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Witnesses:

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