July 25, 1939. J. L. NORTON 2,167,309

BEVERAGE DISPENSING APPARATUS

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Fig. 1

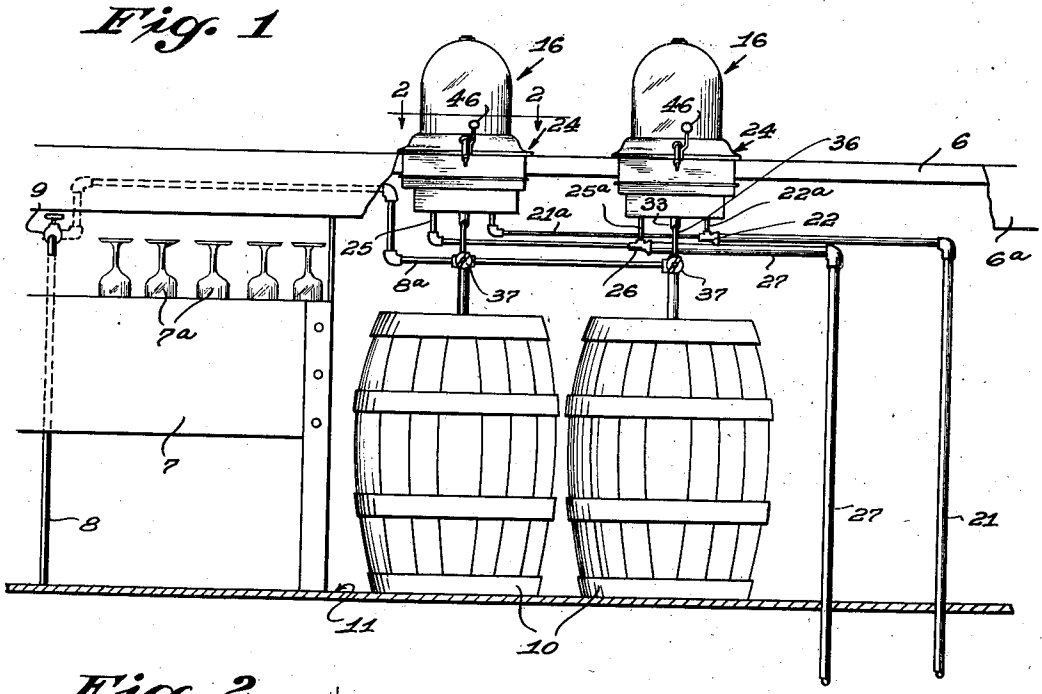
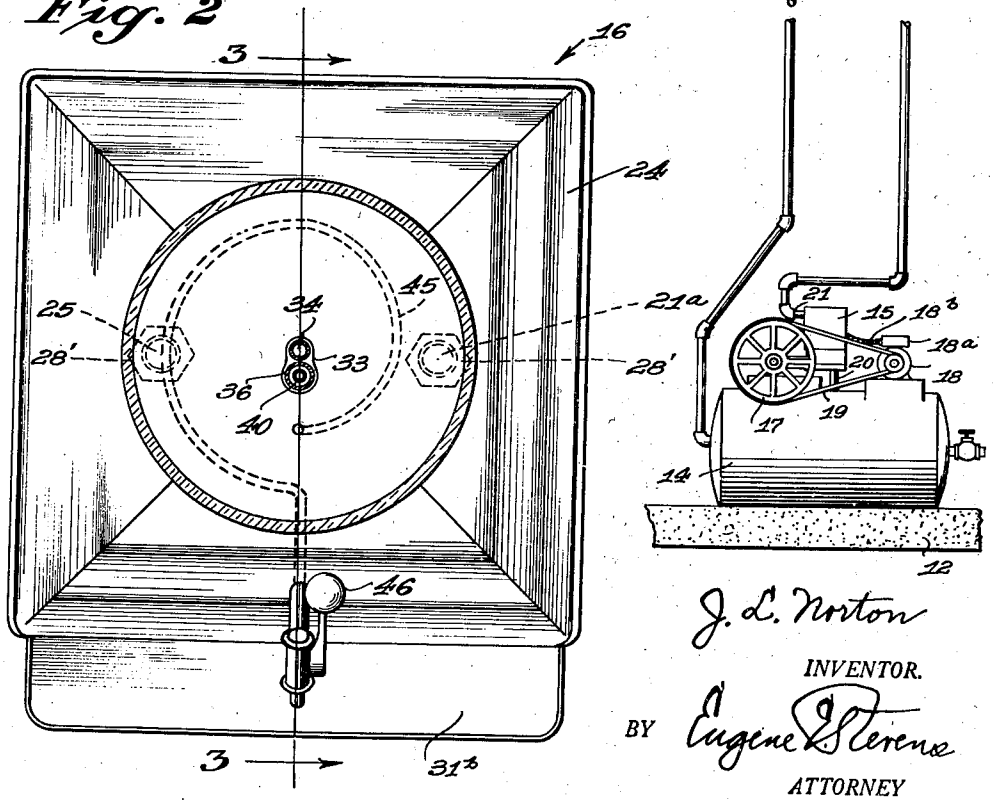


Fig. 2



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Fig. 4

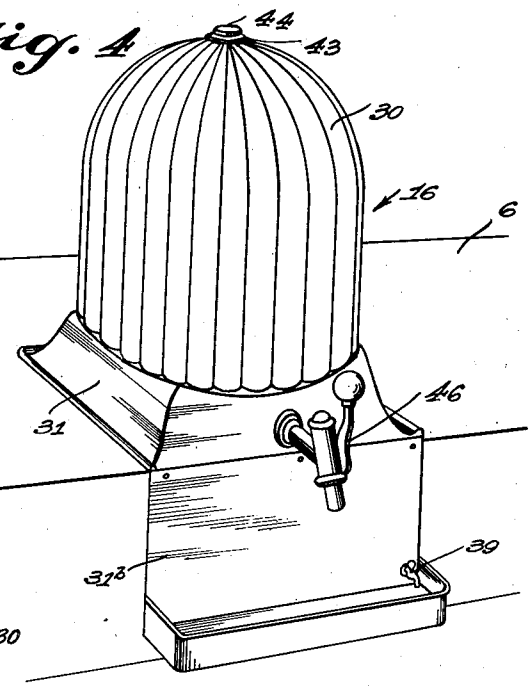


Fig. 3

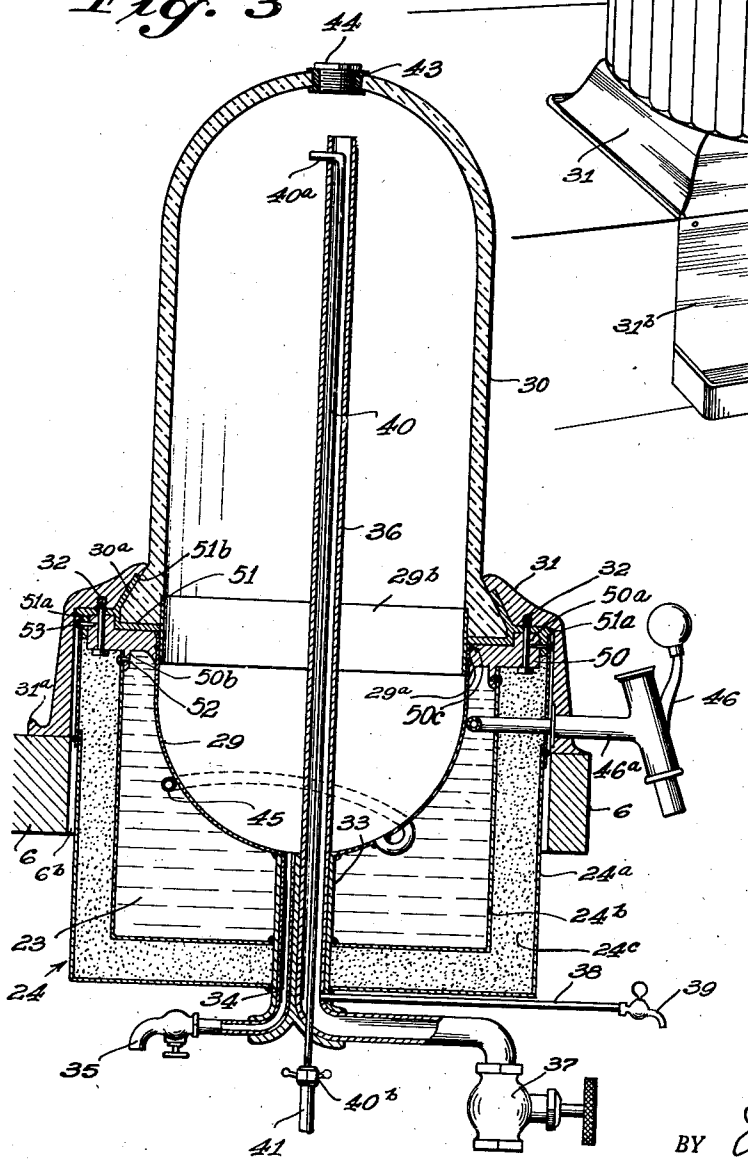
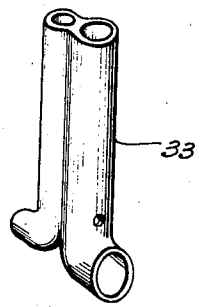


Fig. 5



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UNITED STATES PATENT OFFICE

2,167,309

BEVERAGE DISPENSING APPARATUS

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Application July 16, 1937, Serial No. 154,057

7 Claims. (Cl. 225—40)

This invention relates to improvements in beverage dispensing methods and apparatus and, while suitable for fountain or bar service of beverages generally, is primarily intended as a beer-dispenser.

One of the primary objects of the invention is to provide an apparatus for the purpose specified which will be neat and attractive in appearance and can be readily installed in association with any bar, table or counter or the like regardless of the location of the kegs or any other vessels which supply the beverage thereto.

Further objects of the invention are to provide a dispensing method and apparatus for the purpose specified which will (1) display the fluid to the view of the customer so as to increase sales appeal thereof; (2) lend itself to quick and easy cleaning without necessitating disassembly of the parts (3) assure of the beer or other beverage being kept at a substantially even predetermined temperature; and wherein the apparatus will be relatively inexpensive to manufacture, strong and durable and highly efficient in practical use.

The invention also resides in certain novel features of construction combination and arrangement of the various parts, and in modes of operation thereof, to be hereinafter described and claimed, reference being had to the accompanying drawings forming a part of this specification.

It is to be understood that the drawings and the following description deal with what now appears to be a preferred example of the inventive concept, but that the same is susceptible of other mechanical expression within the spirit and scope of the subject matter claimed hereinafter.

In the drawings wherein the same parts have been used to designate the same parts in all views,

Figure 1 is a fragmentary rear elevational view of a bar, and a portion of the cellar below, illustrating one type of installation of my invention.

Figure 2 is a horizontal sectional view through one of the bar-carried dispensing units illustrated in Figure 1, the view being taken on the line 2—2 of Figure 1;

Figure 3 is a vertical sectional view of said unit, taken on the line 3—3 of Figure 2, certain parts thereof being shown in elevation;

Figure 4 is a perspective view of the dispensing unit shown in Figures 2 and 3;

Figure 5 is a perspective view of a multiple pipe carrying fitting shown in Figures 2 and 3.

Referring to the drawings by reference characters, and turning first to Figure 1, numeral 6 designates a conventional bar whose rear longitudinal edge may have the conventional depending skirt 6*a* as shown. The conventional sink 7 illustrated provides a rest for the clean glasses 7*a*; and there is a water supply pipe 8 having a tap or faucet 9 discharging into the sink 7.

In the present type of installation, the beer kegs 10 are disposed upon the floor 11 beneath the bar or counter 6, but it will be obvious to those skilled in the art that the beer supply kegs 10 may be disposed on the cellar floor 12.

In carrying out the invention I provide at some convenient place—the basement 12 in the illustrated installation—any well known type of refrigeration unit 14 and which may be such as is used for drinking fountains. Such unit as herein shown incorporates a pump 15 for a fluid circuit passing through said refrigeration unit. This conventional installation in the present instance supplies cold water for cooling the beer, or other beverage to be dispensed from the units 16 which are illustrated in Figure 1 as supported upon the bar 6 and will be hereinafter described in detail. Since no novelty is claimed for the refrigeration unit and pump per se the same has not been shown in detail and will not be so described.

Mounted on the refrigeration unit is the motor 18 having the drive belt connection 19 with pump pulley 17. Any type of thermostatically controlled switch, generally denoted as at 18*a*, may be associated with the motor and having the connection 18*b* with the pump 15. Thus the motor 18 will be cut off if the water or other fluid circulating through the pump 15 falls below a predetermined temperature and will start if the water temperature rises too high.

Coming now to the cooling fluid circuit, numeral 20 designates the intake pipe of the pump 15 as leading into the refrigeration unit 14 while the output end of the pump discharges into the pipe 21 which leads upwardly and then horizontally lengthwise of the bar 6 behind the depending skirt 6*a* thereof so as to be concealed and out of the way. Adjacent the first of the two dispensing units 16 heretofore referred to, the pipe 21 has the T-coupling 22 from one branch of which leads the pipe 22*a* into the chamber 23 in the base 24 of the dispensing unit 16 (see Figures 1 and 2).

Another branch of T-coupling 22 is preferably diametrically reduced and carries the horizontally disposed pipe 21*a* which is smaller than pipe 21 and leads into the chamber 23 of the base 24 of the second dispensing unit 16. The return line to the pump 15 comprises the pipe 25 lead-

ing from the base chamber 23 of the left-most unit 16 (Figure 1) and having the T-coupling connection 26 with the return line 25a from the base chamber 23 of the rightmost unit 16 (Figure 1) and with the diametrically larger pipe 27 which leads to refrigeration unit 14.

From the foregoing description, taken in connection with the drawings, it will be evident that when the motor 18 is operating there will be a constant circulation of cold water in the base chambers 23 of the dispensing units 16. Furthermore, it will be clear that the thermostat 18a will function to start the motor whenever the cooling water in the circuit rises above a predetermined temperature. Of course, the amount of running that the motor will have to do in order to keep the water in chambers 23 at a predetermined temperature will depend upon the temperature maintained in the refrigeration unit 14.

Clamp nuts 28' or the like secure pipes 21a, 22a, 25 and 25a assembled with the bases 24 of dispensing units 16 as indicated in Figure 2.

Since the two dispensing units 16 herein shown are duplicates, a description of one will suffice for both; and at this point it might be stated that such units 16 may be employed in any number.

Figure 3 illustrates that the base 24 of the dispensing unit comprises the double walled receptacle having the inner and outer walls 24b, 24a respectively, said walls being separated by insulating material 24c. A frame-like casting 50 provides the upper rim of base member 24 and has the marginal upstanding shoulder 50a upon which is seated the grooved portion 51a of a gasket 51. The inner wall 24b of the base member 24 which provides the receptacle or chamber 23 for the cooling fluid has attachment to the endless flange 50b of the member 50, as indicated by reference characters 52. The outer wall of the receptacle providing base member 24 is secured as at 53 to the sides of the casting or member 25 and said securing members 53 also hold the gasket 51 in place.

The beverage containing member is provided by the bowl like receptacle 29 which will preferably be of stainless steel and has the marginal extension 29b extending into the dome-like glass member 30 which provides the upper portion of the dispensing chamber. Figure 3 illustrates that the bowl-like member 29 has ridges 29a which are received in grooves 50c at the inner surface of the framework casting 50 whereby to hold the bowl member 29 and casting 50 assembled. The extension 29b of the bowl-like member may be made integral therewith or it may be soldered or otherwise secured thereto.

The marginal base portion of the dome-like portion of the beverage chamber 30 seats upon an inwardly extending portion of the washer or gasket 51, which latter has an endless inwardly and upwardly extending portion 51b overlying the outer surface of the base portion of dome member 30. An annular clamp 31 is adapted to be slipped over the dome-like member 30 and to be bolted as at 32 to the frame-like casting 50 so as to hold the parts assembled. Particular attention is directed to the fact that the clamp member 31, which takes the form of a bronze or other casting by preference, has a depending circumferential portion 31a which is adapted to rest upon the bar 6 adjacent the hole 6b therein which receives the base portion 24. Thus the portion 31a of clamp member 31 provides a rest or seat for supporting the dispensing unit 16 in position.

Figures 1 and 4 also illustrate that the clamp member 31 provides the depending rest 31b for drinking vessels which are to be filled from the tap of the dispensing unit. However, of course, the depending drinking vessel rest 31b may be a part separate from the clamp member 31.

Figure 3 also illustrates the bottom of the bowl-like member 29 as providing the multi-passage casting 33 which leads downwardly through the bottom of the base member 24. One passage of the casting 33 receives the drain pipe 34 whose end carries the petcock 35. This drain pipe 34 will be used for draining the beer or beverage chamber 30, 29 of water or other solutions used for cleaning purposes.

The other or larger passage of the casting 33 has extending upwardly therein and to a point adjacent the top of the dome-like glass member 30 the combined flushing water inlet pipe and air vent escape pipe 36, whose lower end below the base member 24 has the T-valve coupling connection 37 with the extension 8a of the water pipe 8. It is also to be noted that there is provided the excess gas relief pipe 38 whose inner end extends through the casting 33 and into pipe 36. There is a spigot or valve member 39 at the outer end of pipe 38, as noted in Figure 4, whereby excess gas within the beverage chamber 30, 29 may be permitted to escape. It is to be understood that the valve 37 of the water line 8, 8a will be closed except when the beverage compartment 29, 30 is being flushed out.

It is also to be noted that the beer or beverage inlet pipe 40 extends upwardly concentrically of and within the combined water and vent pipe 36 from the lower end of the casting 33; and that the upper end of the beverage inlet pipe 40 is extended laterally as indicated at 40a through one side of the pipe 36 at a point adjacent the top of same. The lower end of the beverage inlet pipe 40 has the connection 40b for attachment to the pipe 41 leading to the subjacent beer barrel 10.

The casting 33 will be soldered, as indicated at 42, to the base member 24 and to the bowl-like lower portion of the beverage chamber 29, 30. However, of course, other means may be employed for holding these parts assembled.

The upper end of the glass dome member 30 is seen to be provided with a bushing 43 within which is screwed the plug 44. This is used in case it should be found necessary to use a stiff brush or other handle for cleaning the inner surface of the dome-like glass member 30.

From the foregoing description taken in connection with the accompanying drawings, it will be evident that the beverage contained in the dispensing chamber 29, 30 will be cooled by contact of the cold water in the chamber 23 of the base, inasmuch as the bowl-like lower portion of the beverage chamber 30, 29 is disposed in contact with the cold water. The beverage being dispensed will be further cooled by virtue of the outlet coil 45 leading from the bottom of the bowl-like portion 29 of the beverage chamber and encircling such portion, as indicated in Figure 3, in its passage to the tap 46 which extends through the walls 24a, 24b of the base member and through the lower portion of the clamp member 31. The tap 46 will be of usual construction but it is to be noted that the tap 46 is enlarged, as at 46a, to provide a passage of greater diameter than the passage provided by the coil 45. This tends to prevent foaming of the beverage when same is being dispensed and thus makes

it easier to properly draw a glass of beer or the like. Soldering or other sealing means is resorted to to close the openings through which the coil 45 passes to its point of connection with the tap 46.

By way of summary of the description and explanation of the operation of the apparatus herein disclosed, it may be said that the casing 33 provides a very compact and advantageous assembly of the drain pipe 35, the gas outlet and water inlet pipe 36 and beer inlet pipe 40. It is of great advantage to supply the beer or other beverage to the beverage chamber 29, 30 at a point adjacent the top thereof, and the reason is that there may be a considerable quantity of the beverage in the beverage chamber 29, 30 at the time when the beverage is exhausted from the barrels 10. Under such circumstances the gas discharged from the barrels 10 will not bring about turbulence of the beverage in the container 29, 30 as would be the case if the beverage inlet pipe 40 was located adjacent the bottom of the beverage chamber 29, 30.

Ordinarily when it is desired to clean out the beverage chamber 29, 30, it is only necessary to cut off the supply of beverage through the pipe 41 from the keg or barrel and then open the valve 37 so as to let water from the line 8, 8a run up through the pipe 36 about the beverage inlet pipe 40. This incoming water is discharged under pressure against the upper portion of the dome-like member 30 and will ordinarily clear same of beverage residue. Then when it is desired to drain the water from the beverage compartment 30, 29 it is only necesary to open the valve 35 of the drain pipe 34. Of course, normally, the water valve 37 would be closed. Thus, when it is desired to relieve gas pressure from the beverage container 29, 30 it is only necessary to open the gas vent valve 39 shown in Figures 3 and 4. No drain pipe is shown in connection with the drinking vessel support 31b but it is obvious that one might be provided without using the inventive faculty. Such drains are common in the art.

The use of my apparatus enables beverages such as beer to be very conveniently and satisfactorily dispensed and, as heretofore noted, the patron is enabled to actually view the beverage which he orders by virtue of the use of the glass dome-like upper portion of the beverage chamber.

Having thus described the invention what is claimed as new is:

1. The combination in a beverage dispensing unit or the like providing a beverage chamber; of a vent pipe extending upwardly in said chamber to a point adjacent the top thereof for the outlet of gas, valve means controlling the venting of gas from said chamber through said pipe; said chamber having a beverage outlet means and a valve-controlled cleaning fluid supply pipe connected to said vent pipe whereby such chamber and beverage outlet means may be flushed out to remove beverage residue therefrom.

2. The combination in a beverage dispensing unit providing a base, means including said base and providing a beverage chamber, a vent pipe carried by said base and extending upwardly in said chamber to a point adjacent the top thereof, a laterally extending valve-controlled branch pipe connected to said vent pipe and carried by said base for the outlet of gas, said chamber having a beverage outlet means, and a valve controlled cleaning fluid supply pipe connected to said vent pipe adjacent said branch pipe connection with said vent pipe whereby such chamber and beverage outlet means may be flushed out to remove beverage residue therefrom.

3. Beverage dispensing apparatus comprising in combination, a base providing a cooling fluid chamber which is open at the top, a beverage container secured to said base and having its lower portion extending into and providing a closure for the top of said cooling fluid chamber, means for circulating cooling fluid through said cooling fluid chamber in direct contact with the lower portion of said beverage container, beverage inlet means extending up through said lower portion of said beverage container and discharging adjacent the top thereof, drain and venting means in said beverage container and supporting said beverage inlet means adjacent opposite ends thereof and a beverage outlet pipe leading from the lower portion of said container.

4. Beverage dispensing apparatus comprising in combination, a base providing a cooling fluid chamber which is open at the top, a beverage container secured to said base and having its lower portion extending into and providing a closure for the top of said cooling fluid chamber, means for circulating cooling fluid through said cooling fluid chamber in direct contact with the lower portion of said beverage container, beverage inlet means extending up through said lower portion of said beverage container and discharging adjacent the top thereof, a combined gas vent and cleaning fluid inlet pipe extending into said beverage container and providing a support for said beverage inlet pipe, and a beverage outlet pipe leading from the lower portion of said container.

5. Beverage dispensing apparatus comprising in combination, a base providing a cooling fluid chamber which is open at the top, a beverage container secured to said base and having its lower portion extending into and providing a closure for the top of said cooling fluid chamber, means for circulating cooling fluid through said cooling fluid chamber in direct contact with the lower portion of said beverage container, beverage inlet means discharging adjacent the top of said beverage container, drain and venting means in said beverage container and supporting said beverage inlet means adjacent opposite ends thereof and a beverage outlet pipe leading from the lower portion of said container and encircling the exterior of the lower portion of said beverage container within said cooling chamber.

6. Beverage dispensing apparatus comprising in combination, a base providing a cooling fluid chamber which is open at the top, a beverage container secured to said base and having its lower portion extending into and providing a closure for the top of said cooling fluid chamber, means for circulating cooling fluid through said cooling fluid chamber in direct contact with the lower portion of said beverage container, beverage inlet discharging adjacent the top of said beverage container, a combined gas vent and cleaning fluid inlet pipe extending into said beverage container and providing a support for said beverage inlet pipe, and a beverage outlet pipe leading from the lower portion of said container and encircling the exterior of the lower portion of said beverage container within said cooling chamber.

7. Beverage dispensing apparatus comprising in combination, a base providing chamber, a superposed beverage container secured to said base and having its lower portion extending below the

plane of the top of said cooling chamber, cooling means disposed about the lower portion of said container and within said cooling chamber, beverage inlet means leading upwardly through the cooled lower portion of said beverage container and discharging adjacent the top thereof, a beverage outlet pipe leading from the cooled lower portion of said container, a vent pipe extending upwardly in said beverage container to a point adjacent the top thereof for the outlet of gas, valve means controlling the venting of gas from said chamber through said pipe, a valve-controlled cleaning fluid supply pipe connected to said vent pipe whereby such chamber and beverage outlet means may be flushed out to remove beverage residue therefrom, and a common support for said vent and beverage supply pipes and extending upwardly through said base and cooling chamber.

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