Dec. 24, 1935. J. DOLAN 2,025,651

BEVERAGE COOLING AND DISPENSING SYSTEM

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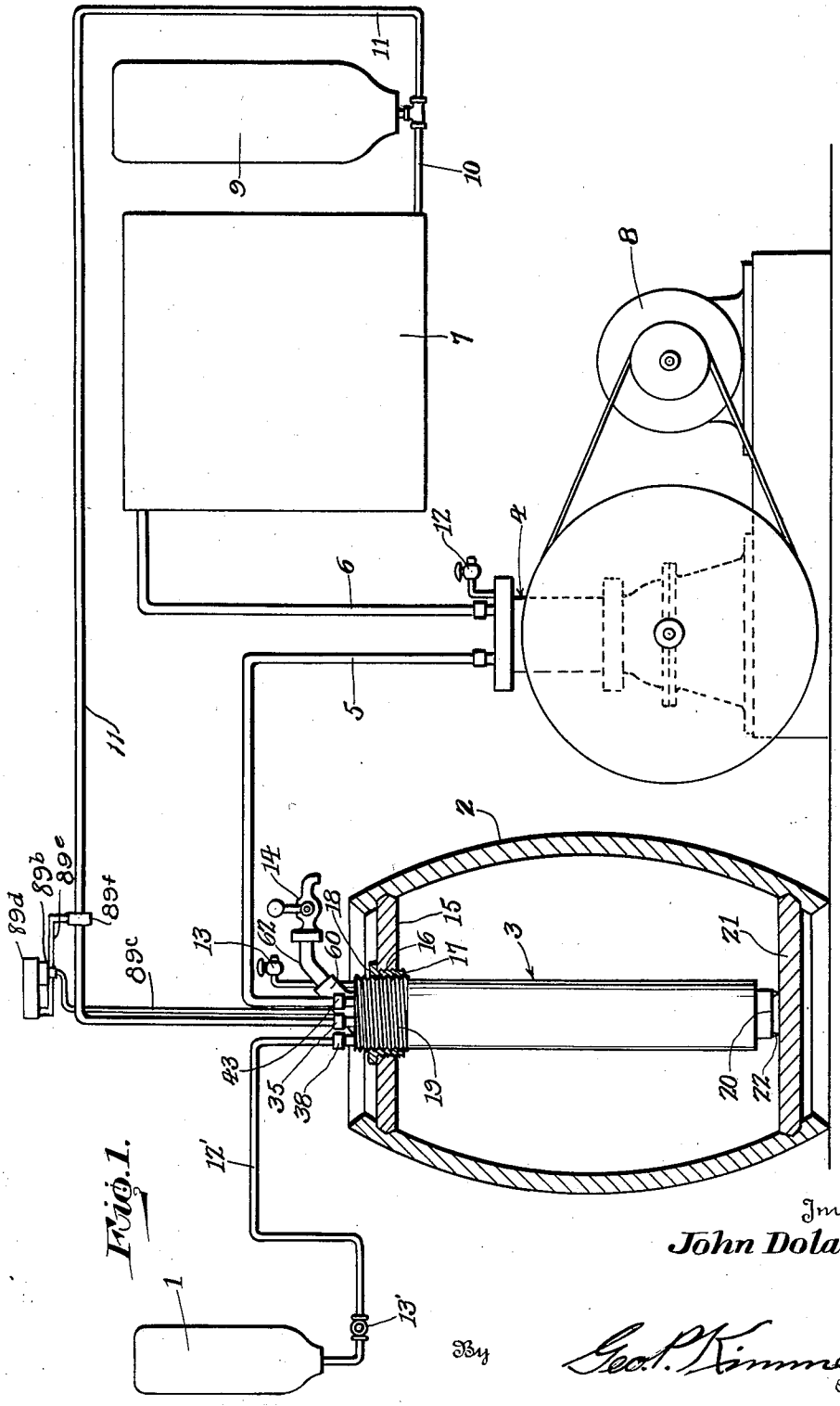


Fig. 1.

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Fig. 2.

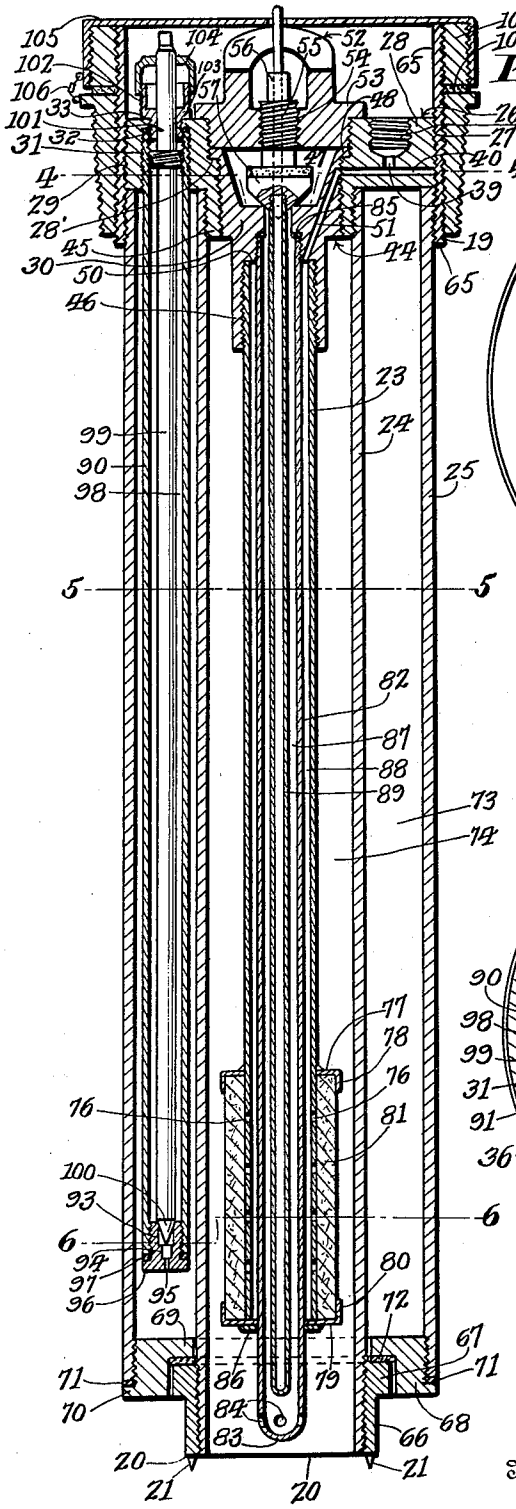


Fig. 3.

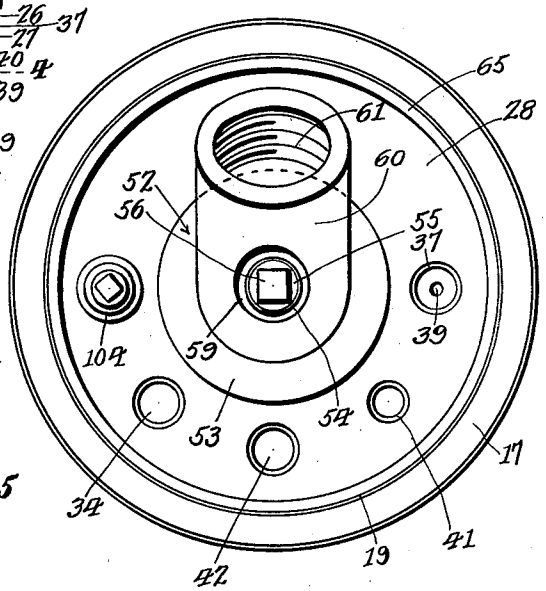
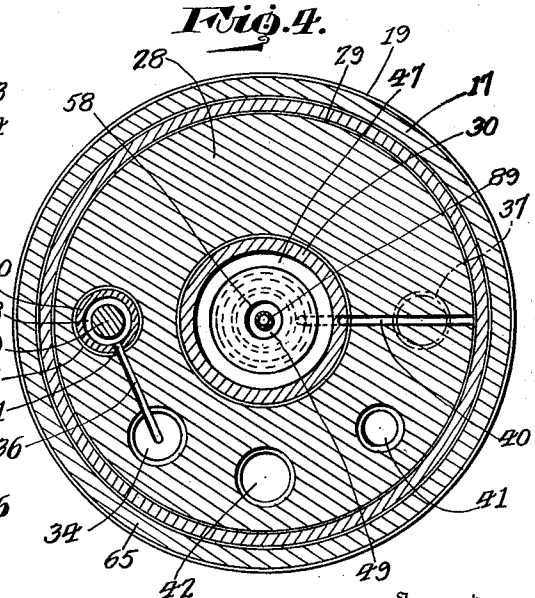


Fig. 4.



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BEVERAGE COOLING AND DISPENSING SYSTEM

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Fig. 5.

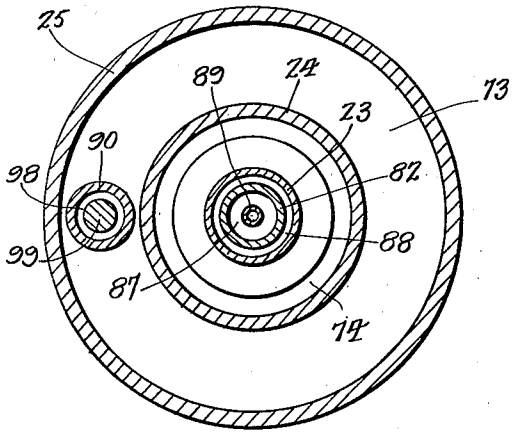


Fig. 6.

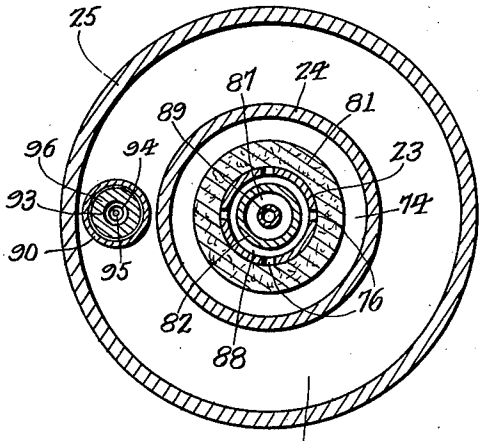


Fig. 7.

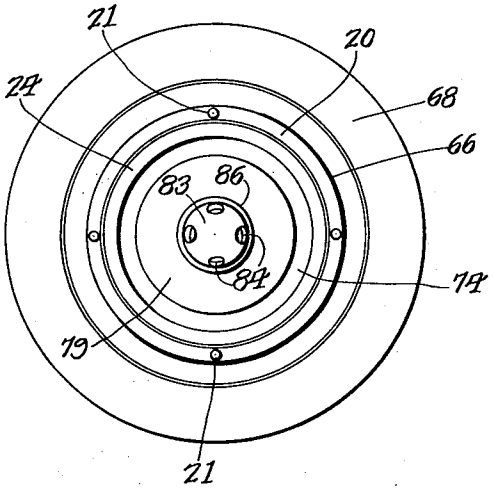
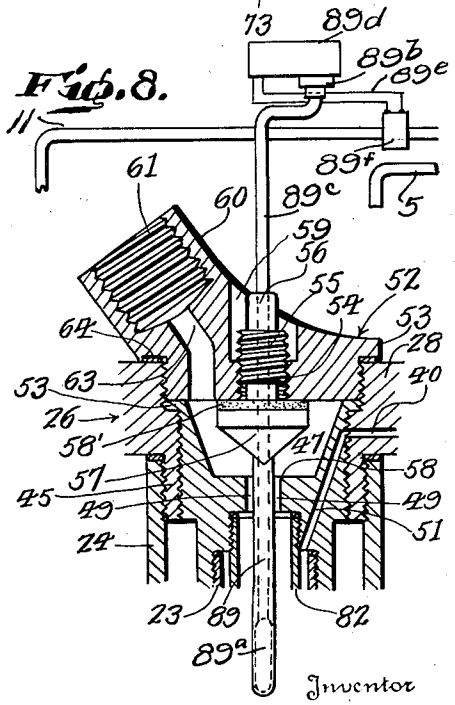


Fig. 8.



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UNITED STATES PATENT OFFICE

2,025,651

BEVERAGE COOLING AND DISPENSING SYSTEM

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Application November 2, 1934, Serial No. 751,201

13 Claims. (Cl. 225—1)

This invention relates to a beverage cooling and dispensing system of that type including a portable beverage container and has for one of its objects to provide, in a manner as hereinafter set forth, a system of such class whereby the beverage container of the system is so formed that the beverage will be maintained under sanitary conditions from the time of its supply to the container to the dispensing thereof.

The present method of dispensing beverages such as beer, etc., is far from being a sanitary one.

It is an established fact that all breweries take the utmost precaution from a sanitary and quality standpoint, as they have the equipment and qualified organization whereby this accomplishment is an easy task. But unfortunately they have no supervision over the various unsanitary conditions that their product is subject to. To retain a condition, whereby the breweries have supervision over their products, in both sanitation and quality is another object of the invention, as the latter, when used, eliminates the said various unsanitary conditions such as the method of exposing equipment in unsanitary rooms, as cellars or basements where the equipment is subjected to germs or germ carriers such as rats, mice, poisonous spiders, cats, flies, etc., also, the method of handling equipment which comes into direct contact with the beverage for example, hose connections and tapping rods (made up ready to insert into the beverage) are allowed to remain exposed on the top of empty containers before insertion, thus allowing germ carriers to crawl or run over them; and as well as the use of hose, sharp bends in pipes under which foreign matter collects which are very difficult to keep in a sanitary condition.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a beverage cooling and dispensing system having the refrigerant in the form of a non-poisonous gas whereby all harm to the beverage and elements of the system is eliminated; having the elements within the beverage container incapable of being carelessly handled and subjected to surrounding conditions other than the conditions of the breweries; having the equipment of the containers so arranged whereby the containers may be stored on the floor where the beverage is dispensed; having the containers and all working parts therein which come in contact with the beverage capable of being cleaned before refilling of the containers; having a dispensing faucet for the container which is readily detached after the container is emptied thus making sterilization thereof easy; having a refrigerant such as carbon dioxid (CO_2), commonly termed carbonic acid gas retaining the quality of the beverage; having a means to provide, at an economical cost for super-cooling properly the quantity of the beverage desired at intervals; having a temperature control at a point of outlet preventing loss of the refrigerant by drawing beverage from the container not properly cooled to absorb the refrigerant; for eliminating drawing beverage from container whereby friction in the lines separate the beverage from the refrigerant, thus allowing the latter to escape while the faucet is open; for eliminating the uncertainty of temperature otherwise the beverage is rendered flat and claret is effected; having a super-cooling beverage chamber, thus eliminating settling periods; having a stationary dispensing line eliminating the unsanitary method whereby tapping rods are exposed to collect foreign matter and the various conditions of handling a tapping rod before insertion into the container; whereby the interior or any working part therein is not exposed to any surrounding conditions other than those at the breweries; for retaining the quality of the beverage by applying the proper temperature and pressure to prevent the activity of solids; and for retaining the quality of the beverage by recarbonizing the beverage where the gas has leaked out by supercooling the gas and the beverage and replacing the quantity of gas that was formerly absorbed in the beverage.

To the above ends essentially, and to others which may hereinafter appear, the invention consists of such parts and such combination of parts which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a front elevation partly in vertical section of the elements of the system assembled,

Figure 2 is a vertical sectional view of the vaporizer unit with its protecting cap,

Figure 3 is a top view of the vaporizing unit with its protecting cap removed,

Figures 4, 5 and 6 are sections respectively on lines 4—4, 5—5 and 6—6, Figure 2,

Figure 7 is a bottom plan view of the vaporizing unit, and

Figure 8 is a fragmentary view in vertical section of the upper portion of the vaporizing unit.

With reference to Figure 1 the system is illustrated thereby as including a carbonic acid gas storage tank 1, a beverage container 2, a vaporizer unit 3 depending within container 2, a compressor 4 for withdrawing gas from unit 3

through pipe 5 and compressing it and then delivering the gas through pipe 6 to condenser 7, a motor 8 for operating compressor 4, a reservoir or receiver 9 for the gas, a pipe connection 10 between condenser 7 and receiver 9, a pipe line 11 leading from the receiver 9 to unit 3, a pressure safety valve 12 for the compressor 4, a pressure safety valve 13 for unit 3, a dispensing faucet 14 attached to unit 3, a gas supply line 12' leading from tank 1 to unit 3 and a reducing valve 13' in line 12'.

The beverage container 2 may be of any shape or capacity and preferably is of the form as shown. The container 2 includes a head 15 formed axially with an opening 16. The wall of the latter is threaded and engaging therewith is an internally and externally threaded sleeve 17 formed at its upper end with a flange 18 which seats upon the head 15. The sleeve 17 gradually increases in outer diameter from its lower end to its flange 18 and depends below the inner face of head 15. The unit 3 is peripherally threaded at its upper terminal portion as at 19. The unit 3 is extended through sleeve 17 and the threads 19 thereof engage with the internal threads of the sleeve whereby unit 3 is coupled to head 15. The unit 3 is of a length to have its lower edge 20 positioned in closed proximity to the upper face of the bottom 21 of container 2. Depending from the edge 20 of unit 3 is a series of spaced pointed barbs 22 for engagement with the bottom of the container.

The unit 3 is of cylindrical form and includes a central, an intermediate and an outer cylindrical member or tube arranged concentrically in spaced relation and designated 23, 24 and 25 respectively. The said members are vertically disposed and arranged upon the top edges thereof is a circular super-structure 26 having its diameter corresponding to the outer diameter of member 25. The structure 26 has its outer edge threaded, as at 27, and it includes an annulus 28 having its inner edge upon two different diameters. The junction of said diameters forms a shoulder 28'. The inner edge 29 of annulus 28', with the exception of the shoulder 29 is threaded. That portion of the inner edge 29 of annulus 26 arranged outwardly of shoulder 29 is of greater diameter than that portion of said edge below the shoulder. The annulus 26 includes a depending internal and external threaded collar 30 having its inner face forming a continuation of that portion of the inner edge 29 of smallest diameter. The annulus 26 is formed with a socket 31 having a threaded wall. The socket 31 opens at the lower face of the annulus. The base of socket 31 is formed with a circular enlargement 32 which is spaced from the wall of the socket. The annulus includes an opening 33 which opens into socket 31 through the enlargement 32, a threaded socket 34 for receiving a tubular coupler 35 for line 11, a channel 36 leading from the base of socket 34 to socket 31, a threaded socket 37 for receiving a tubular coupling 38 for the line 12', a port 39, a channel 40 opening at the inner edge 29 below shoulder 28' and opening at the edge 27 and into which opens port 39, a threaded opening 41 to which is attached the safety valve 13 and a threaded opening 42 for receiving a tubular coupler 43 for the line 5.

The structure 26 also includes a coupler 44 consisting of a circular peripherally threaded head part 45 and an internally threaded tubular lower part 46. The part 45 has a flared pocket 47 open at its upper end, an outwardly directed annular peripheral flange 48 at its top and axially arranged beverage passage 49 communicating with the bottom of pocket 47. The lower part 46 is of less diameter than, depends from the bottom of and is disposed centrally with respect to the head part 45. The inner face of part 46 is upon two different diameters and the junction of such diameters provides part 46 with an internal shoulder 50. That portion of largest inner diameter of part 46 is arranged below the shoulder 50. That portion of smallest inner diameter of part 46 is of greater diameter than the opening 49. The coupler 44 is formed with an inclined channel 51 which leads from the outer periphery of the coupling 44 at a point below flange 48 to and opens at the shoulder 50. The upper end of channel 51 registers with the inner end of channel 40. The flange 48 seats on shoulder 28' and threadedly engages with the inner edge of annulus 28 and outer face of collar 30.

The structure 23 also includes an outlet member 52 for the beverage which extends into, seats on and is secured to that portion of largest diameter of the edge 29 of annulus 28. The member 52 is peripherally threaded to engage with that portion of edge 29 above the shoulder 28'. The member 52 at its top is formed with an outwardly directed annular flange 53 which seats on the top of annulus 28. The bottom of member 52, in connection with the pocket 47 forms a beverage receiving chamber having its top wall provided by member 52. The latter has an axially arranged screw threaded opening 54 with which engages the threaded portion 55 of the valve stem 55 of a beverage discharge control valve 57 of inverted conoidal contour which coacts with a valve seat 58 formed by the upper end of the wall of passage 49 for closing the outer end of the latter. The top of valve 57 carries a combined cushioning and sealing means 58' of any suitable material. The top of member 52 axially thereof is formed with a pocket 59. The opening 54 communicates with the pocket 59 through the bottom of the latter. The member 52 is formed at its top with an upwardly disposed outwardly inclined extension 60 formed with a threaded socket 61 for coupling therein a pipe branch 62 which carries the faucet 14. The member 52 is provided with an outlet passage 63 for the beverage. The passage 63 opens at its upper or outer end into the bottom of socket 62 and extends from said bottom to the bottom of member 52. The passage at its lower or inner end opens into the beverage chamber provided by pocket 47 and bottom of member 52. Interposed between flange 53 and structure 26 is a sealing gasket 64.

The unit 3 also includes a protecting sleeve 65 which surrounds the structure 26 and extends above the latter. The sleeve 65 also surrounds the upper portion of member 25, and threadedly engages with the latter, as well as structure 26. The sleeve 65 has its outer face threaded, and such threads are the threads indicated at 19, Figure 1. The sleeve 65 projects above the extension 60.

The member 24 has its upper portion surrounding collar 30 and threadedly engages therewith. The members 24 and 25 abut the bottom of annulus 28. The member 23 extends up into part 46 and abuts shoulder 50 and threadedly engages with part 46. The lower portion of member 24 has threads on its outer face and engaging therewith is an internally threaded sleeve 66 formed at its upper end with an outwardly directed annular flange 67. The barbs 21 are carried by

sleeve 66. Opposing the top and outer edge of flange 67 is a peripherally threaded collar 68 formed at its upper end with an inwardly extending flange 69 and at its lower end with an outwardly directed flange 70. The lower portion of member 25 encompasses the collar 68 and threadedly engages with the latter. The bottom edge of member 25 opposes flange 70. A packing 71 is interposed between member 25 and flange 70. The flange 69 surrounds and is spaced from member 24. The collar 68 surrounds and is spaced from flange 67. A flexible sealing washer 72 is interposed between sleeve 66, the flange 67 and the flange 69 of collar 68. The sleeve 66, collar 68 and washer 72 provide an expansible bottom closure for the crystals and gas expansion chamber 73 provided by the members 24, 25 and bottom of annulus 28. The crystals referred to are molecules and may appear in a refrigerant solution whether it be a gas or liquid. The presence of the molecules is due to the action of the refrigerant being under pressure and these molecules are commonly known as crystals. The members 23 and 24, in connection with the shoulder 50, provide a super-cooling beverage chamber 74.

The lower portion of member 23 is formed with superposed perforations 76. Encompassing member 23, above the perforations therein, as well as being secured thereto, is flat annulus 77 formed with a depending flange 78 at its outer edge. The bottom of member 23 seats upon a flat annulus 79 having an upstanding flange 80 at its outer edge. Surrounding the member 23 between the annuli 77, 79 and retained in encompassing relation with respect to member 23 by the flanges 77, 80 is a gas atomizer 81 which forms an element of unit 3. The latter also includes a tubular member 82 which is open at its top and communicates at its upper end with the passage 49. The lower end 83 of member 82 is rounded and closed and above and in proximity to end 83, the member 82 is formed with a series of spaced beverage intake ports 84. The upper end portion of member 82 threadedly engages with the threads on that portion of the smallest diameter of the inner face of part 46 of coupler 44. A sealing washer 85 is interposed between the top edge of member 82 and the lower face of part 45 of coupler 44. The inner diameter of member 82 is greater than that of passage 49. The member 82 carries a support in the form of a collar 86 above its lower end for and to which is secured the annulus 79. The member 82 provides a super-cooling beverage displacement chamber 87. The member 82 is arranged in concentric spaced relation to member 23 and forms in connection therewith, a super-cooling gas displacement chamber 88 having its top formed by shoulder 50 and its bottom by collar 86. The channel 51 at its lower end opens into the upper end of chamber 88.

The unit 3 also includes a tubular thermostat 89 which is anchored at its upper end to the valve 57 and is suspended by the latter in chamber 87. The thermostat 89 has a bulb 89^a which is in communication with a sylphon 89^b through tube 89^c. A control box 89^d is attached to the sylphon. Electrical connections 89^e extend from the control box 89^d to a solenoid valve 89^f. The valve 89^f is interposed in the inlet line 11 which opens into the socket 34. The elements relative to the control are of known construction. The expansion and contraction of the sylphon bulb 89^a operates the sylphon 89^b and makes and breaks an electrical contact in the control box. The solenoid valve is operated by the action of the control box when the liquid in the sylphon bulb expands through the tube to the control box. Due to this expansion suitable means in the control box trips an electric switch. When the switch is closed the solenoid valve opens the line 11 to allow the refrigerant to pass through the line to socket 34.

The unit 3 also includes a tubular member 90 arranged within chamber 73 and having its upper end extended within and secured to the wall of socket 31. The member 90 surrounds the enlargement 32 and is formed with an aperture 91 which registers with one end of channel 36. The member 90 has secured within and extended from its lower end a flanged tubular gas outlet member 92 having its inner face upon three portions of different diameters indicated at 93, 94 and 95. The portion 93 is of largest diameter. The portion 94 is arranged between the portions 93 and 95 and is of greater diameter than portion 95. The flange of member 92 is indicated at 96 and opposes the bottom edge of member 90. A sealing washer 97 is interposed between flange 96 and member 90. The latter, in connection with annulus 28 and member 92, provides a super-cooling chamber 98. Arranged within chamber 98 is a vertically adjustable gas control rod 99 having a pointed lower end 100 associated with and extending into the portion 93 of largest diameter of the inner face of member 92. The portions 93, 94 and 95 of the inner face of member 92 provides what may be termed a three point gas control orifice having the pointed lower end 100 of the rod 99 coacting therewith. The refrigerant is vaporized in passing through the orifice provided by member 92 and the resultant gas fills the crystals and gas expansion chamber 73. The rod 99 has threaded engagement with the upper end of member 90 and includes a non-threaded part 101 which passes upwardly through the opening 33. The part 101 merges into a threaded portion 102 engaging with a lock nut 103 seated on annulus 28. The upper end of rod 99 carries a packing box 104 engaging with portion 102. The member 92 and rod 99 provide an expansion valve located within the expansion chamber 73.

The unit 3 is to be provided with an interiorly threaded protecting cap 105 during transportation thereof with the container 2 to and from the brewery and also with a shipping seal 106 for cap 105. Surrounding the upper portion of the sleeve 19, as well as threadedly engaging with the latter is an internal and external threaded locking ring 107 for cap 105. Interposed between the ring 107 and sleeve 65 is a cushion 108.

The cap 105 is removed when dispensing beverage. The unit 3 may be removed from container 2 when filling the latter at the brewery. The unit 3 is cleaned at the brewery when removed from or arranged in the container.

The outlet connection for the beverage is of standard size whereby any type of faucet may be detachably connected thereto, and by this arrangement the faucet may be readily cleaned when detached.

All adjustments of the rod 99 are made by the breweries after which the rod is locked in place by nut 103. The chamber provided by pocket or recess 47 in connection with structure 52 forms a beverage settling chamber connecting chamber 87 through the passage 49 with outlet passage 63.

From the tank 1 the refrigerant is conducted by line 12' to the reducing valve 13' and from

there to socket 37 and from the latter to super-cooling chamber 88 to perforations 76, through atomizer 81 to super-cooling beverage chamber 74. In this connection it will be stated that the pressure regulated at the reducing valve connection at CO_2 storage tank, the pressure will be uniform throughout the whole beverage system, and that the stagnated gases in the super-cooling chamber are being constantly cooled; said gases remaining in the gas chamber until faucet is open and beverage is drawn. At this point the gas is automatically released and sprayed through the atomizer 81 coming into contact with the beverage in chamber 74, the beverage will be super-cooled and the temperature of said gas lowered. The required amount of gas will be absorbed in the beverage momentarily, insofar as the temperature of the beverage is constant approximately 40 degrees–45 degrees F. The amount of foam, of course, in beverage where foam appears may be regulated by the amount of pressure admitted, approximately from 5 to 8 pounds in the event that a container should lose its gas during transportation and is flat when it reaches the retailer; beverage can be recarbonated. The practice today is to discard it or return it to the breweries.

It will not be necessary to wait until the entire amount of beverage is cooled as the super-cooling chamber provides beverage at a drinkable temperature in a few minutes thereby making this unit economical to operate at business places or at homes where a minimum amount is desired at intervals. The balance of the beverage in the container is preserved to retain its quality by temperature and gas pressure.

With respect to refrigerant control, the gas is conducted by line 11 to the refrigerant gas supply control to socket 34 and from the latter it passes through the gas inlet channel 36 to the member 90 then into the super-cooling chamber 98 and discharges from chamber 98 through the member 92 into the expansion chamber 73. The gas withdrawn from the chamber 73 is conducted by the pipe 5 to the compressor 4.

What I claim is:

1. In a beverage cooling and dispensing system, a beverage container, a combined beverage cooling and dispensing unit connected to, arranged within and extended outwardly from one end of said container, said unit being formed with a dispensing outlet, a beverage super-cooling chamber opening into said container, a beverage displacent chamber leading to said outlet, arranged within and communicating with the cooling chamber, a refrigerant expansion chamber surrounding said cooling chamber and having an outlet and a valved controlled refrigerant receiving and cooling chamber arranged within and opening into the expansion chamber and having an intake, a refrigerant reservoir, a refrigerant feed line leading from said reservoir to said intake, a compressor, operating means for the latter, a refrigerant conducting line leading from the outlet of the expansion chamber to the compressor, and a condenser communicating with the compressor and the reservoir.

2. In a beverage cooling and dispensing system, a beverage container, a combined beverage cooling and dispensing unit connected to, arranged within and extended outwardly from one end of said container, said unit being formed with a dispensing outlet, a beverage super-cooling chamber opening into said container, a beverage displacement chamber leading to said outlet, arranged within and communicating with the cooling chamber, a refrigerant expansion chamber surrounding said cooling chamber and having an outlet, a valve controlled refrigerant receiving and cooling chamber arranged within the expansion chamber and having an intake, a thermostat disposed lengthwise of the displacement chamber and a controlling valve for the displacement chamber suspending said thermostat, a refrigerant reservoir, a refrigerant feed line leading from the reservoir to said intake, a compressor, operating means for the latter, a refrigerant conducting line leading from the outlet for the expansion chamber to the compressor, and a condenser interposed between and communicating with the compressor and reservoir.

3. In a beverage cooling and dispensing system, a beverage container, a combined beverage cooling and dispensing unit connected to, arranged within and extended outwardly from one end of the container, said unit being formed with a dispensing outlet, a beverage displacement chamber leading to said outlet and communicating with the interior of the container, a beverage cooling chamber, a refrigerant expansion chamber surrounding said cooling chamber, a refrigerant receiving chamber surrounding the displacement chamber and interposed between the latter and the cooling chamber, an atomizer within and discharging into the cooling chamber and communicating with said receiving chamber, a valve controlled refrigerant receiving chamber arranged within said expansion chamber, a refrigerant tank, communicating means between the tank and that receiving chamber surrounding the displacement chamber, a refrigerant reservoir, communicating means between said reservoir and the valve controlled receiving chamber, a compressor, communicating means between the compressor and expansion chamber, operating means for the compressor, and a condenser interposed between and communicating with the compressor and reservoir.

4. In a beverage cooling and dispensing system, a beverage container, a beverage dispensing unit connected to, arranged within and extended from one end of said container, said unit including a beverage cooling chamber opening into the container, a beverage displacement chamber surrounded by and communicating with the cooling chamber and leading to a beverage dispensing point, a refrigerant expansion chamber surrounding the cooling chamber and a valve controlled refrigerant receiving chamber arranged within and communicating with the expansion chamber, and means communicating with the expansion and receiving chambers for circulating and distributing a refrigerant through said unit including a compressor, a condenser communicating with the latter and a reservoir communicating with the condenser.

5. In a beverage cooling and dispensing system, a beverage container, a beverage dispensing unit connected to, arranged within and extended from one end of the container, said unit including a beverage cooling chamber communicating with the interior of the container, a beverage displacement chamber surrounded by and communicating at one end with the cooling chamber and leading to a beverage dispensing point, a refrigerant expansion chamber, a refrigerant receiving chamber interposed between said cooling and expansion chambers surrounding the displacement chamber, an atomizer communicating with said receiving and cooling chambers and a valve con-

trolled refrigerant receiving chamber arranged within and communicating with the expansion chamber, a refrigerant storage tank, communicating means between said tank and first mentioned receiving chamber and including a reducing valve, and means communicating with the expansion chamber and valve controlled receiving chamber for circulating a refrigerant through said unit including a compressor, a condenser communicating with the compressor and a refrigerant reservoir communicating with the condenser.

6. In a beverage cooling and dispensing system, a beverage container, and a beverage dispensing unit adapted to have a refrigerant circulate therethrough, said unit connected to, arranged within and extended from one end of the container, said unit including a dispensing faucet connection, a series of tubular members, means in connection with said members to provide respectively a beverage cooling chamber having an open bottom, a beverage displacement chamber leading to a beverage dispensing point and communicating with the cooling chamber, a refrigerant expansion chamber surrounding the cooling chamber and having an outlet and a refrigerant receiving chamber having an intake and discharging into the expansion chamber, and said receiving chamber being arranged in and discharging into said expansion chamber.

7. The construction as set forth in claim 6 having combined therewith a controlling valve for the displacement chamber and a thermostat carried by said valve and positioned in the displacement chamber lengthwise of the latter.

8. In a beverage cooling and dispensing system, a beverage container, and a beverage dispensing unit adapted to have a refrigerant circulate therethrough, said unit being connected to, arranged within and extended from one end of the container, said unit including a dispensing faucet connection, a series of upstanding tubular members, means in connection with said members to provide respectively a beverage displacement chamber axially of the unit and leading to a beverage dispensing point, a refrigerant receiving chamber surrounding the displacement chamber and having an intake, a beverage cooling chamber opening at its bottom into the container, surrounding said receiver chamber and communicating with said displacement chamber, a refrigerant expansion chamber surrounding the cooling chamber and having an outlet, a valve controlled refrigerant receiving chamber having an intake and arranged within and discharging into the expansion chamber, and said unit including an atomizer communicating with said first mentioned receiving chamber and the cooling chamber.

9. The construction as set forth in claim 8 having combined therewith a controlling valve for the displacement chamber and a thermostat carried by said valve and extending lengthwise of said displacement chamber.

10. In a beverage cooling and dispensing system, a combined beverage cooling and dispensing unit adapted to be connected to, arranged within and extended from a beverage container, said unit including a superstructure, a series of tubular members suspended from said superstructure and arranged in concentric spaced relation, the inner one of said members providing a beverage displacement chamber open at its upper end, closed at its lower end and ported in proximity to its lower end, the other of said members coacting with the said inner member and the superstructure to provide respectively a refrigerant receiving chamber surrounding the displacement chamber, a beverage cooling chamber surrounding the receiving chamber, communicating with the displacement chamber and having an open bottom, and a refrigerant expansion chamber surrounding said receiving chamber, means for closing the lower ends of the receiving and expansion chambers, an atomizer carried by one of said members and communicating with said receiving and cooling chambers, a valve controlled refrigerant receiving chamber suspended from said superstructure and arranged within and discharging into the expansion chamber, said superstructure being provided with intakes for receiving chambers, an outlet for the expansion chamber and a dispensing passage for the beverage communicating with said displacement chamber.

11. The construction set forth in claim 10 having said superstructure provided with a beverage settling chamber between the dispensing passage and the displacement chamber.

12. The construction as set forth in claim 10 having said superstructure provided with a settling chamber between the dispensing passage and the displacement chamber, a controlling valve for the latter, and a thermostat carried by the valve and disposed lengthwise of said displacement chamber.

13. In a beverage cooling and dispensing system, a beverage container from which the beverage is dispensed directly, a refrigerant expansion chamber within the container, a reservoir from which a refrigerant is drawn, a cooling chamber within the expansion chamber for receiving the refrigerant and including a controllable outlet valve for vaporizing the refrigerant, said receiving chamber discharging into the expansion chamber, means within the container for displacing and recarbonizing the beverage, and means for circulating the refrigerant through said chambers including a compressor and a condenser communicating with the latter and with said reservoir.

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