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BEER AND SOFT DRINK DISPENSING ASSEMBLY

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FIG. 1

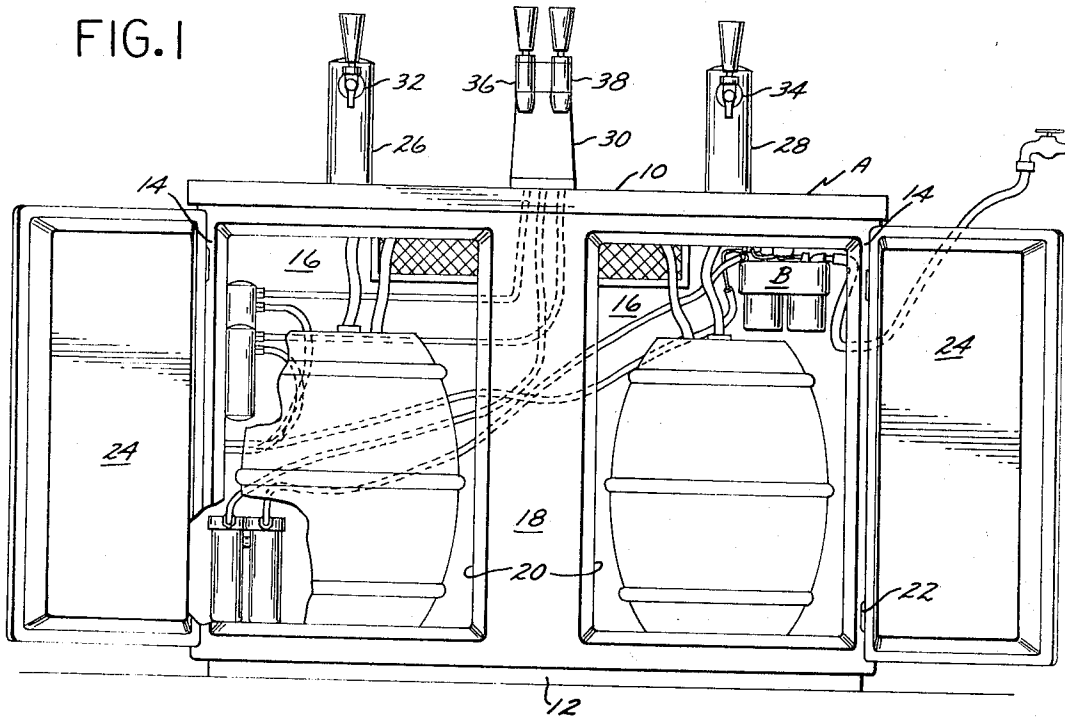
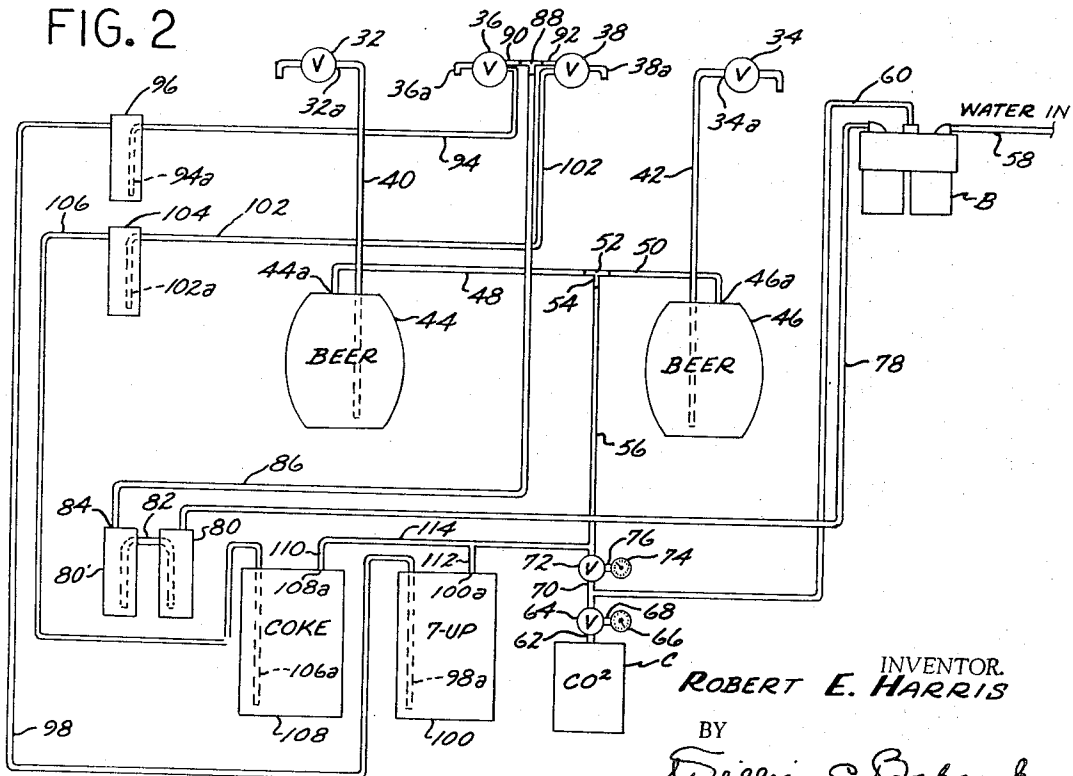


FIG. 2



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**BEER AND SOFT DRINK DISPENSING ASSEMBLY**  
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4 Claims. (Cl. 222-129.1)

The present invention relates generally to the dispensing of beverages, and more particularly to an assembly in which a simple source of refrigeration cools keg beer, soft drink concentrates, and domestic water that has been transformed into carbonated water in the assembly, with the cooled beer, as well as the concentrates blended with the carbonated water, being selectively dispensible from the assembly by use of a single source of carbon dioxide gas under pressure.

In the past, in taverns and bars, where tap beer and soft drinks are dispensed, it has been common practice to store the beer and soft drinks in separate refrigerated compartments. Two separate sources of carbon dioxide under pressure are normally required to dispense both beer and soft drinks, particularly by blending carbonated water and flavoring concentrates. Such separate dispensing operations are unduly expensive, for electric power is required for two refrigerated units instead of one. Also, the maintenance costs are higher on two refrigeration units. Obviously, the cost of carbon dioxide gas per drink is also higher, for two cylinders thereof are required rather than one.

A major object of the present invention is to provide a beverage dispensing assembly that includes but a single source of refrigeration and single source of carbon dioxide under pressure, but one that is capable of selectively dispensing cooled beer from a keg, as well as soft drinks resulting from the blending of cooled carbonated water with cooled concentrates.

Another object of the invention is to supply a beverage dispensing unit that is more economical to operate than those available heretofore, requires less maintenance than previously available beverage dispensing units, is of simple mechanical structure, can be fabricated from standard, commercially available materials, and may be retailed or leased at a sufficiently low price as to encourage the widespread use thereof.

These and other objects and advantages of the assembly will become apparent from the following description of a preferred form thereof, and from the accompanying drawing illustrating that form, in which:

FIGURE 1 is a side elevational view of the beverage dispensing assembly, with the doors thereof in the open position; and

FIGURE 2 is a diagrammatic view of the components of the assembly, illustrating the means in which the same cooperate to permit the selective dispensing of either cooled beer from a keg or kegs, and soft drinks resulting from the blending of cooled carbonated water with cooled flavoring concentrates.

With continued reference to the drawing for the general arrangement of the invention, the assembly will be seen to include a rectangular cabinet A, that includes an elevated counter 10, a base 12, two longitudinally spaced end walls 14, a forward side piece 16, and a rear wall 18, in which one or more openings 20 are formed. The end walls 14, by the use of hinges 22, pivotally support two doors 24 which are adapted to be swung into first positions where they close the openings 20.

Three standards 26, 28 and 30 project upwardly from the counter 10, with the standards 26 and 28 supporting two manually operable beer dispensing valves 32 and 34, respectively. The standard 30 supports two manually operable soft drink dispensing valves 36 and 38, as

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best seen in FIGURE 1. The interior of the cabinet A is refrigerated by conventional means (not shown).

Inlets 32a and 34a are provided for the beer dispensing valves 32 and 34 respectively, and are connected to two conduits 40 and 42, that extend downwardly through the upper ends of two kegs 44 and 46 containing tap beer. The bungs 44a and 46a in the tops of kegs 44 and 46, respectively, are removably connected by conventional means to conduits 48 and 50 extending to a T 52. A third leg 54 of the T 52 is connected to a conduit 56. When carbon dioxide gas under pressure flows through the conduit 56, T 52 and conduits 48 and 50, the beer in kegs 44 and 46 is pressurized and flows through the valves 32 and 34 when the valves are manually placed in an open position.

The beverage dispensing assembly also includes a commercially available carbonator B of conventional design, to which domestic water can flow through a conduit 58 to be transformed into carbonated water when subjected to carbon dioxide under pressure within the confines of the device. The carbonated water flows from the carbonator B through a conduit 60, as can best be seen in FIGURE 2.

The single source of carbon dioxide under pressure is preferably a commercially available tank C containing the same in liquid form, and the outlet 62 of this tank is removably connected to a first pressure reducing valve 64 that reduces the pressure of the carbon dioxide as it discharges from the tank to substantially 125 pounds per square inch. A gauge 66 which registers the pressure of the gas as it discharges through the pressure reducing valve 64 is connected to the valve by a conduit 68.

The outlet of valve 64 is connected to a tubular T 70, which T is connected to a second pressure reducing valve 72 that reduces the pressure of carbon dioxide flowing therethrough to approximately 12 pounds per square inch. Valve 72 is in communication with a second pressure gauge 74 by means of a connecting conduit 76.

The T 70, as shown in FIGURE 2, is connected to conduit 60 to supply carbon dioxide gas to the carbonator B under a pressure of approximately 125 pounds to carbonate domestic water flowing into the carbonator B through conduit 58. Carbonated water discharges from carbonator B through a conduit 78, as seen in FIGURE 2, and the carbonator is positioned in a desired location in the interior of cabinet A, such as in the right-hand upper corner, as viewed in FIGURE 1. Carbonated water flows through the conduit 60 to a reservoir 80 that is preferably formed from a metallic material having good heat conducting qualities, in order that the carbonated water therein will be cooled by contact of the reservoir with the refrigerated atmosphere within the confines of cabinet A.

In FIGURE 2 a second reservoir 80' is shown that is connected to the first reservoir 80 by a conduit 82. Reservoir 80' is provided with a discharge outlet 84 that is connected by a conduit 86 to a T 88. The valves 36 and 38 are mixing valves, adapted to receive carbonated water from the T 88 through conduits 90 and 92, respectively.

The second inlet to the mixing valve 36 is connected by a conduit 94 to a reservoir 96 situated within the confines of cabinet A and cooled by contact with the refrigerated atmosphere therein. A leg 94a extends downwardly from conduit 94 within the confines of the reservoir 96, as shown in FIGURE 2. The inlet to reservoir 96 is connected by a conduit 98 to a container 100, in which a soft drink concentrate such as 7-UP is contained.

A leg 98a of conduit 98 extends downwardly into the

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confines of the container 100. The second inlet of valve 38 is connected by a conduit 102 to a second reservoir 104 situated within the confines of cabinet A, and cooled by contact with the refrigerated atmosphere therein. A leg 102a extends downwardly from conduit 102 within the confines of the second reservoir 104 (FIGURE 2). The inlet to the second reservoir 104 is connected by a conduit 106 to a second container 108 in which a soft drink concentrate, such as COCA COLA, 7-UP, or the like, may be contained. A leg 106a extends downwardly from conduit 106 within the confines of container 108. Containers 100 and 108 have an opening 100a and 108a respectively formed in the upper portion thereof, which are connected to two tubular laterals 110 and 112, respectively, which laterals in turn communicate with a header 114. Header 114 is in communication with the conduit 56 on the downstream side of the second pressure reducing valve 72, as shown in FIGURE 2.

From the above description, it will be seen that the high pressure carbon dioxide in tank C is supplied at a pressure of substantially 125 pounds per square inch to actuate the carbonator B, while carbon dioxide gas at a pressure of substantially 12 pounds is supplied by the second pressure reducing valve 72 to pressurize the interior of the kegs 44 and 46 and force tap beer therefrom when either valve 32 or 34 is placed in the open position.

Also, due to the header 114 being in communication with the conduit 56 on the downstream side of the second pressure reducing valve 72, carbon dioxide gas at a pressure of substantially 12 pounds per square inch is discharged into the interior of the containers 100 and 108 to urge the flow of soft drink concentrate therefrom into the first and second reservoirs 96 and 104 where the concentrates are cooled due to contact with the refrigerated atmosphere within the confines of cabinet A.

The reservoirs 80 and 80', as well as the reservoirs 96 and 104, are disposed within the refrigerated confines of cabinet A to assure a source of chilled carbonated water and chilled concentrates at all times. The capacity of the reservoirs 80 and 80', 96 and 104 is so chosen relative to the normal usage of carbonated water and concentrates, that the carbonated water and concentrates are chilled prior to being dispensed from valves 36 and 38. Thus, if the reservoirs 96 and 104 are of sufficient capacity to chill the soft drink concentrates prior to use, the containers 100 and 108 may be located at a convenient position outside the cabinet A.

The use and operation of the invention are extremely simple. When it is desired to dispense tap beer from either of the kegs 44 or 46, the appropriate valve 32 or 34 is manually opened. Likewise, when it is desired to dispense a soft drink such as COCA COLA or 7-UP, the appropriate valve 36 or 38 is placed in the open position, to permit blending of the concentrate and chilled carbonated water prior to discharge of these two blended materials from the valves 36 or 38 through the outlets 36a and 38a, respectively.

Although the present invention is fully capable of achieving the objects and providing the advantages hereinbefore mentioned, it is to be understood that it is merely illustrative of the presently preferred embodiment thereof and I do not mean to be limited to the details of construction herein shown and described, other than as defined in the appended claims.

I claim:

1. In a refrigerated cabinet that includes at least one keg of beer provided with an inlet and outlet and means for dispensing beer from said keg, in combination:

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- (a) a single cylinder of carbon dioxide under pressure;
  - (b) first and second pressure reducing means for reducing the pressure of carbon dioxide as it discharges from said cylinder to first and second pressures, which first pressure is substantially greater than said second pressure;
  - (c) first means for carbonating domestic water when said water is subjected to said carbon dioxide at said first pressure;
  - (d) first conduit means for supplying said carbon dioxide from said first pressure reducing means to said first means at said first pressure;
  - (e) at least one container provided with an inlet and an outlet that holds a soft drink liquid concentrate;
  - (f) second conduit means for supplying carbon dioxide from said second pressure reducing means to said inlets in said keg and container at said second pressure;
  - (g) third conduit means connected to said outlet in said keg for discharging beer therefrom;
  - (h) a normally closed valve on said third conduit means for controlling the flow of beer therefrom;
  - (i) a carbonated water cooler disposed in said cabinet;
  - (j) fourth conduit means for delivering carbonated water from said first means to said carbonated water cooler;
  - (k) a soft drink concentrate cooler disposed in said cabinet provided with an inlet and an outlet;
  - (l) fifth conduit means extending from said outlet in said concentrate container to said inlet in said concentrate cooler;
  - (m) a normally closed mixing valve having first and second inlets and a single outlet;
  - (n) sixth conduit means extending from said outlet of said concentrate cooler to said first inlet of said mixing valve for conducting refrigerated concentrate thereto; and
  - (o) seventh conduit means extending from said outlet of said carbonated water cooler to said second inlet of said mixing valve for conducting refrigerated carbonated water thereto.
2. A device as defined in claim 1 wherein said first pressure reducing means reduces the pressure of said carbon dioxide to substantially 125 pounds per square inch.
3. A device as defined in claim 1, wherein said second pressure reducing valve reduces the pressure of said carbon dioxide to substantially 12 pounds per square inch.
4. A device as defined in claim 1 wherein said concentrate cooler has sufficient capacity that said concentrate therein is cooled by said refrigerated atmosphere in said cabinet prior to discharge of said concentrate from said cabinet to be mixed with carbonated water.

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