A. B. GREEN.

COMBINATION CARBONATOR AND DISPENSING BARREL.

APPLICATION FILED AUG. 24, 1921.

1,418,072. **Patented May 30, 1922.**

2 SHEETS—SHEET 1.

Fig. 1.

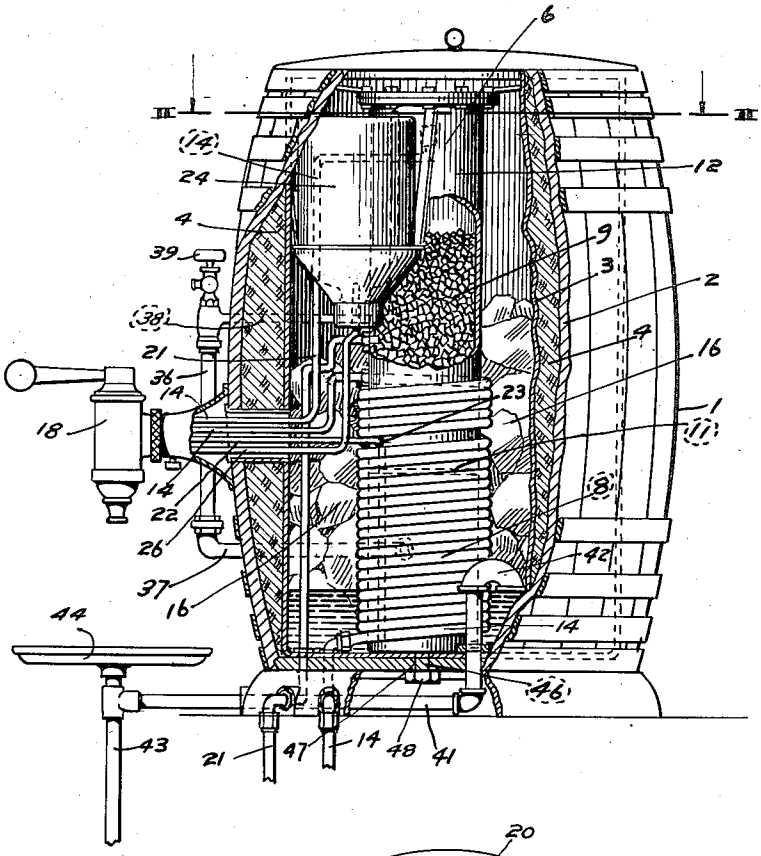
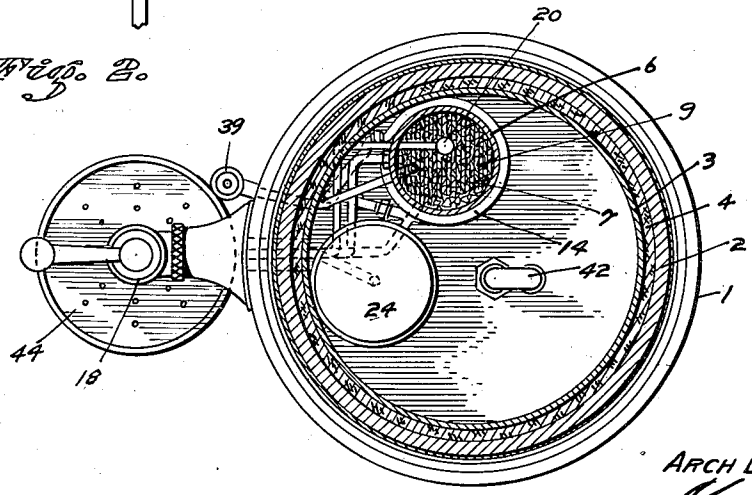


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

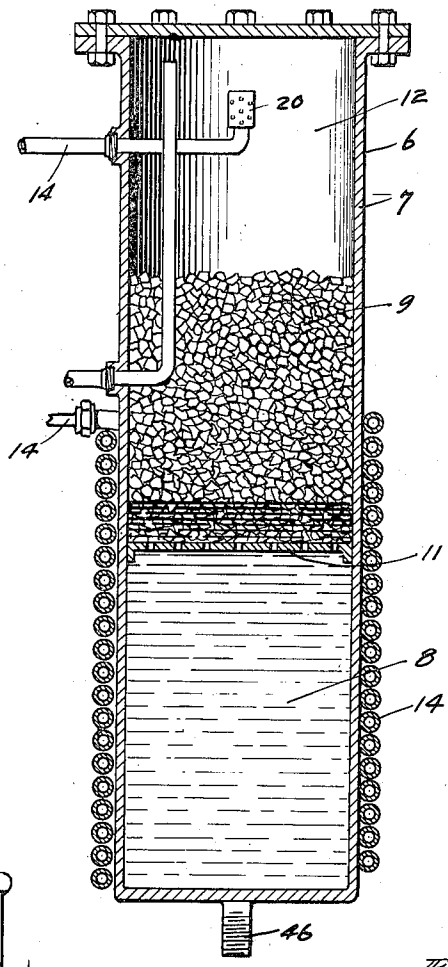


Fig. 4.

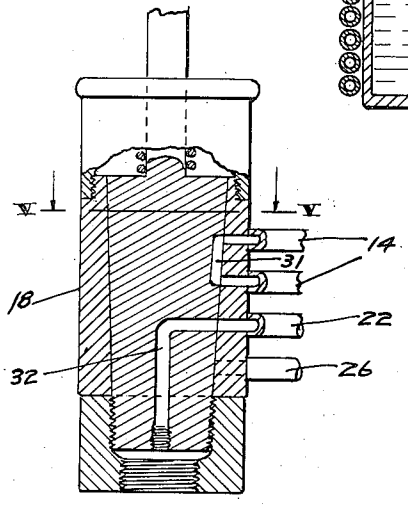
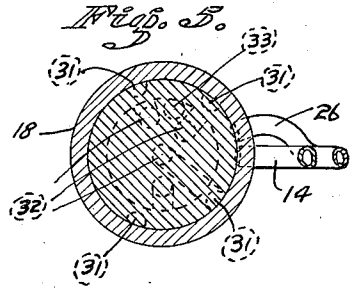


Fig. 5.



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COMBINATION CARBONATOR AND DISPENSING BARREL.

1,418,072. Specification of Letters Patent. Patented May 30, 1922.

Application filed August 24, 1921. Serial No. 495,022.

To all whom it may concern:

Be it known that I, ARCH B. GREEN, a citizen of the United States, and resident of San Francisco, county of San Francisco, and State of California, have invented a new and useful Combination Carbonator and Dispensing Barrel, of which the following is a specification.

The present invention relates to improvements in dispensing barrels and its object is to provide a combination carbonator and dispensing barrel, that is, to combine the carbonator directly with and to place it inside of the dispensing barrel and to provide a faucet that controls both the dispensing apparatus and the carbonator and enables the operator to replenish the carbonator simultaneously with the withdrawal of carbonated water or independently of the same. The faucet itself has been independently protected in U. S. Patent 1,383,100 and it is the object of the present application to secure protection on the combination in which this faucet is to be used.

The preferred form of my invention is illustrated in the accompanying drawing in which Figure 1 represents a side view of my dispensing barrel, a portion of the latter being broken away to reveal the inside of the same; Figure 2 a horizontal cross-section through the same along line 2—2 of Figure 1; Figure 3 an enlarged detail view of the carbonator proper enclosed in the barrel, Figure 4 an enlarged vertical cross-section through the valve, and Figure 5 a horizontal cross-section through the valve along line 5—5 of Figure 4.

Referring to the drawings in detail, it will be noticed that the barrel (1) does not essentially differ from the dispensing barrels now in common use in soft drink parlors and extensively used especially in connection with the retail sale of root beer. Since I developed my device principally as a root beer dispensing barrel, I shall, for the sake of simplicity, confine myself in my description and explanations to that expression, although the apparatus can no doubt be used for many purposes of similar character. The barrel is preferably provided with double walls (2) and (3) and an insulating layer (4) between the same.

The carbonator (6) is disposed within the barrel and comprises a tubular body (7) having a lower chamber (8) serving as receptacle for the carbonated water, a rather thick layer (9) of loose material adapted to allow the water to percolate through the same resting on a perforated plate (11) secured within the tube and a mixing chamber (12) above the percolator. Water is admitted into this carbonator through the pipe (14), which may be connected to the city water supply and is led around the carbonator in numerous windings, whereby its surface is subjected to the influence of the ice (16) provided in the barrel. This pipe ends into the top or mixing chamber (12) of the carbonator, but before arriving there is passed through the valve (18), as shown in Figure 4, and illustrated in detail in U. S. Patent No. 1,383,100, so that the valve (18) controls the supply of water admitted into the carbonator. At the end of the water pipe, within the mixing chamber, a fine spray nozzle (20) is provided which separates the water into fine units so that it presents itself very much like a dense fog. In this stage it is most receptive for the carbonic acid gas since it is cooled to a temperature of about 40 degrees and the air is forced out of it through the spraying process. Gas is admitted into the carbonator through the pipe (21), entering the same preferably through the filtering material. It then mixes with the water under the most favorable conditions, the water being cold and going through a carbonating process twice, first in the mixing chamber proper where the water entering in the form of a fine mist readily takes up the carbonic gas entering the chamber under pressure and secondly by percolating through the filtering material which is also saturated with the gas. Under these conditions carbonated water can be produced very cheaply and under rather low pressure. In a barrel that is now in operation my only power is the pressure in the city water line, which is rated at 50 pounds; carbonic gas I introduce under a 25 pound pressure and obtain excellent results.

A pipe (22) ending into the faucet (18) is used for the withdrawal of the carbonated water and enters the carbonator at (23), to be led inside the carbonator to the bottom of the same. A receptacle (24) for syrup is provided in the upper portion of

the barrel and syrup is withdrawn from the same through the pipe (26) by gravitation. The latter pipe also leads into the faucet (18).

The construction of the faucet (18) is explained in detail in my former application and for the purposes of the present application it is only necessary to explain that the faucet is provided with one or more passages (31) adapted to bridge the break in the water inlet pipe (14) whereby it controls the water inlet, one or more ports (32) for the withdrawal of carbonated water adapted to connect with the pipe (22) and another port (33) controlling the syrup. The most preferred form of faucet for this purpose having been illustrated in my former patent it is not deemed necessary to go into detail on this subject, except that I might state that the faucet allows the operator to refill the carbonator independently or in connection with the withdrawal of carbonated water and also to draw on the pure ice water, in that manner exercising a complete control over the carbonator as well as performing all the functions of a dispensing faucet, special provision being made for allowing syrup to pass through the faucet together with the carbonated water.

A gauge (36) is provided outside the barrel to indicate the level of the carbonated water in the carbonator, the lower end of the gauge communicating through the pipe (37) with the carbonated water in the carbonator, while the upper end of the gauge communicates through the pipe (38) with the upper portion of the carbonator close to its top, so that this pipe can be simultaneously used as an outlet for air gathering near the top of the carbonator, the pressure of which can be occasionally relieved by the use of the valve (39) at the top of the gauge. Provision is also made to allow the water gathering at the bottom of the barrel to drain out of the barrel through the pipe (41) which is protected from the ice by the U cap (42) and leads into the general drain pipe (43), into which also flows any overflow water from the perforated glass supporting plate (44), as shown in the drawing.

The carbonator is secured to the bottom of the barrel by means of the stud (46) projecting from the bottom of the carbonator and extending through the hole (47) in the bottom of the barrel, a nut (48) insuring a tight engagement between the carbonator and the barrel.

In operation the pipe (14) is connected with the city water supply or any other water supply delivering water under a pressure of at least 25 pounds, and ice is placed around the windings of the pipe. The inlet (21) is connected to a supply of carbonic acid gas, the syrup tank filled, and the device is ready to be used. The carbonator works automatically and, owing to the specific construction of the valve, ice water is admitted to the carbonator any time carbonated water is withdrawn from the same. If the supply of carbonated water should get low, the operator may refill it by means of the same valve (18) without withdrawing any carbonated water. Thus my device fills the place of the common dispensing barrel as well as of the carbonator now commonly used as a separate unit at a very slight increase of cost.

I claim:

1. A combination carbonator and dispensing barrel, comprising a dispensing barrel and a carbonator disposed therein, said carbonator including a tank, means for passing water through the same, means for carbonating the same by agitation and percolation, and means manipulated from the outside of the barrel for controlling the intake and outlet ports for the water.

2. In combination, a dispensing barrel, a carbonator disposed therein, a water inlet for the carbonator and an outlet for the same, and common control means for the inlet and the outlet, said common control means being manipulated from the outside of the barrel.

3. In combination, a dispensing barrel, a carbonator and a syrup receptacle disposed therein, a water inlet for the carbonator and an outlet for the same, an outlet for the syrup receptacle, and common control means for the water inlet and the outlets of the carbonator and the syrup receptacle.

4. In combination, a dispensing barrel, a carbonator and a syrup receptacle disposed therein, a water inlet for the carbonator and an outlet for the same, an outlet for the syrup receptacle, and common control means for the water inlet and the outlets of the carbonator and the syrup receptacle, said common control means being manipulated from the outside of the barrel.

ARCH B. GREEN.