

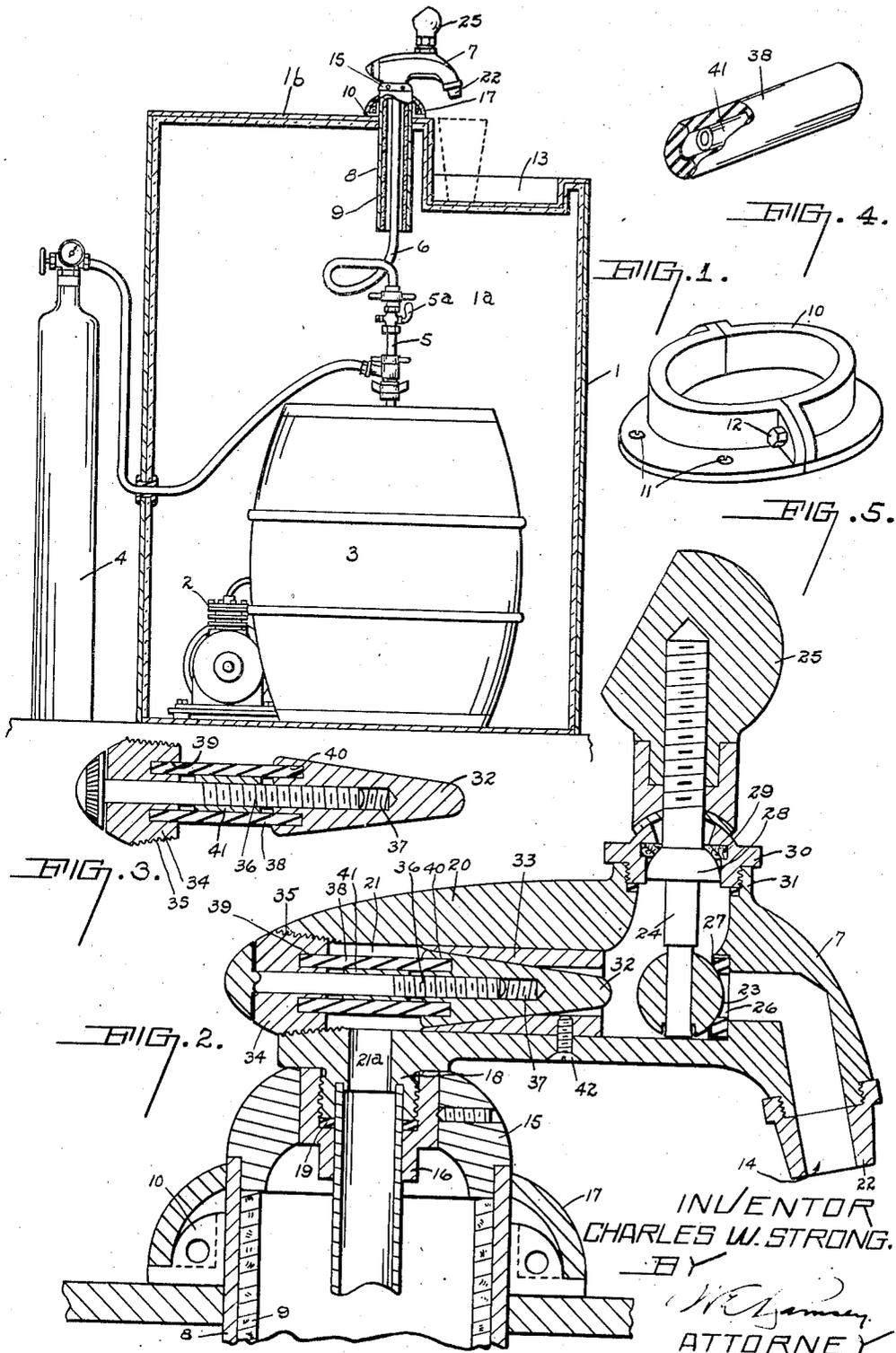
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BEVERAGE DISPENSING APPARATUS

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BEVERAGE DISPENSING APPARATUS

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The principal object of my invention is to provide a beverage dispensing apparatus which will effectively dispense liquids and particularly beer with minimum disturbance, efficient cooling from keg to faucet, under close control and in an efficient manner.

A further object of my invention is to provide a so-called direct draft apparatus which will effectively dispense beer from a chilled container directly to the faucet and in which the beer will be maintained at uniform desired temperature.

A further and more specific object of my invention is to provide a beer faucet in which all parts exposed to the beer may be kept clean and the beer will be subject to minimum agitation to prevent froth and thus the beer dispensed in this manner will be discharged from the faucet fully charged and "live" with carbonation.

Further and other details of my invention are hereinafter described with reference to the accompanying drawing, in which:

Fig. 1 is a sectional view thru a cabinet showing apparatus embodying my invention;

Fig. 2 is a sectional view thru a beverage faucet embodying my invention, shown on substantially larger scale to illustrate the features thereof;

Fig. 3 is a sectional view thru the valve element of the control valve for said faucet, illustrating details of construction thereof;

Fig. 4 is a perspective detail, with portions shown broken away, of a tubular seal between said control valve and a sealing plug so as to prevent beer from being exposed to the feed screw and provided to eliminate the necessity of a stuffing box or other external sealing mechanism; and

Fig. 5 is a perspective detail view of a clamping ring to permit the faucet and its standard to be adjusted, equally and quickly, with respect to the top of the cabinet and the receptacle tray formed thereon.

A beverage dispensing device embodying my invention is adapted to be housed within a closed container 1 defining a chamber 1a which is subject to refrigeration. This is accomplished thru a refrigerating unit 2 of standard construction tending to maintain said chamber at predetermined temperature. A barrel of beer 3, or other beverage to be dispensed, is placed in said container and usually a tank of carbonic gas or compressed air is tapped into the discharge pipe 5 leading from said barrel to maintain pressure in said barrel and in said pipe. The usual fittings, including a pet cock 5a, are provided for

this pipe to maintain a tight joint with the barrel and to control the flow therefrom. A section of flexible hose 6 or any other type of conduit leads from said discharge pipe to a faucet 7.

Said faucet is mounted upon a cylindrical standard 8 extending thru the top 1b of said container. Said standard is of substantial length and is adapted to extend into the chamber 1a, and to open thereinto, as is illustrated in Fig. 1. Said cylinder preferably is metallic as is the container 1 and said standard is lined with some insulating material 9, such as sheet cork. An adjustable clamping ring is secured to the top of said container by screws 11 and cap screws 12 are adapted to pull the two halves of the clamping ring together to grip said standard and to hold it in adjusted position. The top of said container is provided with a trough or tray 13 for holding glasses or other containers. It is desirable that the top of said glass or container be arranged adjacent the discharge opening 14 of the faucet so that beer when it is dispensed may flow directly into the glass without undue agitation. Different height glasses or containers are provided and thus it is desirable to be able to regulate the vertical spacing of said discharge opening from the floor of the trough or tray. This is accomplished in my invention by unloosening the clamping ring 10 and moving the faucet with its standard upwardly or downwardly until the proper position is reached and said standard, with the faucet secured thereto, can be held in this position. The clamping ring is tightened up thru the action of said cap screws to hold the faucet as close as is desired to the top of the glass to be filled.

The standard 8 is closed at its upper end by a cap 15 which has an annular hose coupling 16 arranged concentrically therewith. It is to be noted that the hose is substantially smaller in diameter than is the standard 8 and thus there is a relatively large space externally of the hose and internally of the standard. The standard being open to the interior of the chamber thus permits the temperature maintained in said chamber to be effective throughout the entire length of the standard and thus, if beer is dispensed thru said device, said beer can be maintained at desired refrigerated temperature in the tank and in the hose up to a point where it joins faucet 7.

The faucet, as will be hereinafter described, has a passageway therethru but this is closed in the main by a control valve and thus the faucet

and the operating valve contains little beer and thus substantially all of the beer, before it is dispensed, is held under the refrigerated temperature maintained in the chamber 1a. I deem this feature of great importance, and if a portion of the standard is raised substantially above the top of the container, the insulating material 9 tends to minimize heat losses therethru. A loose ring 17 overlies the clamping ring 10 to conceal it and also provides additional insulation about the standard 8.

The faucet 7 has a base 18 formed thereon which is threaded and engages the hose coupling 16. A tight joint is maintained at this point by a gasket 19. The faucet 7 has an integral body 20 and a longitudinal passageway 21 extending therethru. Said passageway communicates at one end thru an aperture 21a with base 18 and terminates at the other end in discharge opening 14. I preferably provide a faucet tip 22 about said passageway which tip preferably is made of a non-metallic material so as to eliminate metal at this point which might break or chip the edges of glasses.

Extending transversely of said passageway is an operating valve mechanism comprising a spherical valve element 23 carried by stem 24 and operable by a handle 25. Said valve element is operative to seat upon a port 26 formed in a removable valve seat 27. Arranged intermediate the handle and valve element is a frusto-spherical flange which engages a resilient washer 29. Said washer is mounted in a cap 30 screw-threaded to the body of the faucet on a neck portion 31. The engagement of the frusto-spherical member with the washer 29 provides a fulcrum for the stem 26 and when said operating valve mechanism is rotated clockwise, as viewed in Fig. 2, it moves the valve element 23 away from the seat 27 to permit fluid to flow thru the faucet and out the discharge opening and when said valve mechanism is rotated counter-clockwise, the valve element is seated across the port 26 to prevent flow thru said port.

I provide a control valve in the body of said faucet between the operating valve and the base so as to regulate the discharge rate from said faucet. Said control valve comprises a cylindrical tapered plug valve 32 which is adapted to be shifted longitudinally in a tapered tubular seat 33 encircling the passageway 21. A plug 34 closes one end of the passageway, as is shown in Fig. 2, and is threaded in the body of the valve, as at 35. Said plug is hollow-bored and an adjusting screw 36 is journaled therein. Said adjusting screw is only loosely mounted in the hollow-bored plug and thus is free to turn. The head of said screw is knurled or milled so that it may be easily grasped and turned to adjust the screw 36. Said adjusting screw engages the plug valve 34 by threads 37 and thus when the screw is turned the plug valve is moved inwardly and out of its tubular seat.

In that part of the passageway 21 not occupied by the plug in its tubular seat, I arrange a tubular sealing member 38 to sheath the adjusting screw. Said tubular sealing member is seated at one end thereof in an annular groove 39 formed in the inner face of plug 34 and the other end is seated in a similar annular groove 40 in the tapered plug valve 32. Said sealing member is seated rather tightly in said grooves and thus engagement of said sealing member and the tapered plug valve 32 prevents the latter from turning. Said sealing member preferably is made of a resilient elas-

tic material, such, for example, as rubber, synthetic rubber, or the like. I have found the product sold under the name "neoprene" to be particularly suited for this purpose, because it has the necessary qualities of elasticity, compressibility, freedom from taste and toughness which are necessary.

In Fig. 2 I have shown the tapered plug valve 32 seated tightly in its tubular seat 33 to shut off the flow of fluid thru passageway 21 and operating valve member 23 is also seated on its seat 27. The tubular sealing member 38 has a tubular metallic spacer 41 arranged in its bore and said spacer is of such length as to limit the movement of said tapered plug valve towards the left, as viewed in Fig. 2, thus to limit its movement towards open position. When said tapered plug valve 32 is moved towards the left, it tends to compress the tubular sealing member 38 until the ends of the spacer 41 engage the opposed faces of plug 34 and tapered plug valve 32. The tubular sealing member, however, never permits fluid to leak thru the adjusting screw 36 or past said adjusting screw out thru plug 34. The tubular seat 33 is held against rotation by a screw 42 extending thru the walls of the body of the faucet.

To operate my dispensing apparatus, a barrel of beer or other beverage is first placed in the container 1 in a properly chilled condition and is maintained at predetermined temperature in said container by operation of the refrigerating unit. Pressure is applied thru the discharge pipe thru the tank of carbonic gas or air 4 and petcock 5a is then opened permitting beverage under pressure to flow thru hose 6 to the faucet 7. The discharge rate of said faucet is then adjusted by moving the tapered plug valve 32 towards the left or right by means of the adjusting screw and the standard is adjusted so that the faucet is the proper vertical height from the trough or tray 13. Beer or other beverage can then be drawn from the faucet at proper speed with proper "head" by opening and closing the operating valve mechanism. An apparatus thus constructed permits beverage to be drawn with the operating valve full open to increase the speed of operation without producing a wild glass of beer, for example. It is apparent that the discharge rate of the faucet can be easily and quickly adjusted by rotating the milled end of the adjusting screw 36 to suit varying conditions.

I claim:

1. A beverage dispensing faucet comprising a cylindrical body, a base therefor, said faucet having a discharge outlet formed therein, a continuous passageway extending longitudinally therethru from said base to said discharge outlet, a control valve arranged longitudinally of said passageway, an adjusting screw operatively engaging said control valve and extending along said passageway, and a compressible tubular sealing member enveloping said adjusting screw where it extends thru said passageway, said sealing member being provided with a non-compressible tubular spacer arranged in the bore thereof, proportioned to define the effective limit of operation of said feed screw.

2. An elongated faucet having an axial bore leading from an intake opening arranged at one end to a discharge opening at the other, a manually operated shut off valve arranged adjacent the discharge opening and a flow control valve extending longitudinally of said bore intermediate the shut off valve and the intake opening,

a tapered seat surrounding said bore, said flow control valve being tapered at substantially the same angle of taper as that of said seat, means for moving said flow control into and out of engagement with said seat, both of said valves and said seat being streamlined to avoid the production of turbulence in liquids flowing through said faucet, and a smooth surfaced tubular sheathing enveloping said means to prevent the said controlled liquid from coming in contact with the latter. 10

3. An elongated faucet having an axial bore leading from an intake opening arranged at one end to a discharge opening at the other, a manually operated shut off valve arranged adjacent 15

the discharge opening and a flow control valve extending longitudinally of said bore intermediate the shut off valve and the intake opening, a tapered seat surrounding said bore, said flow control valve being tapered at substantially the same angle of taper as that of said seat, means for moving said flow control into and out of engagement with said seat, both of said valves and said seat being streamlined to avoid the production of turbulence in liquids flowing through said faucet, and a smooth surfaced, elastic tubular sheathing enveloping said means to prevent the said controlled liquid from coming in contact with the latter.

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