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DISPENSING APPARATUS FOR BEVERAGES

Filed June 25, 1936

2 Sheets-Sheet 1

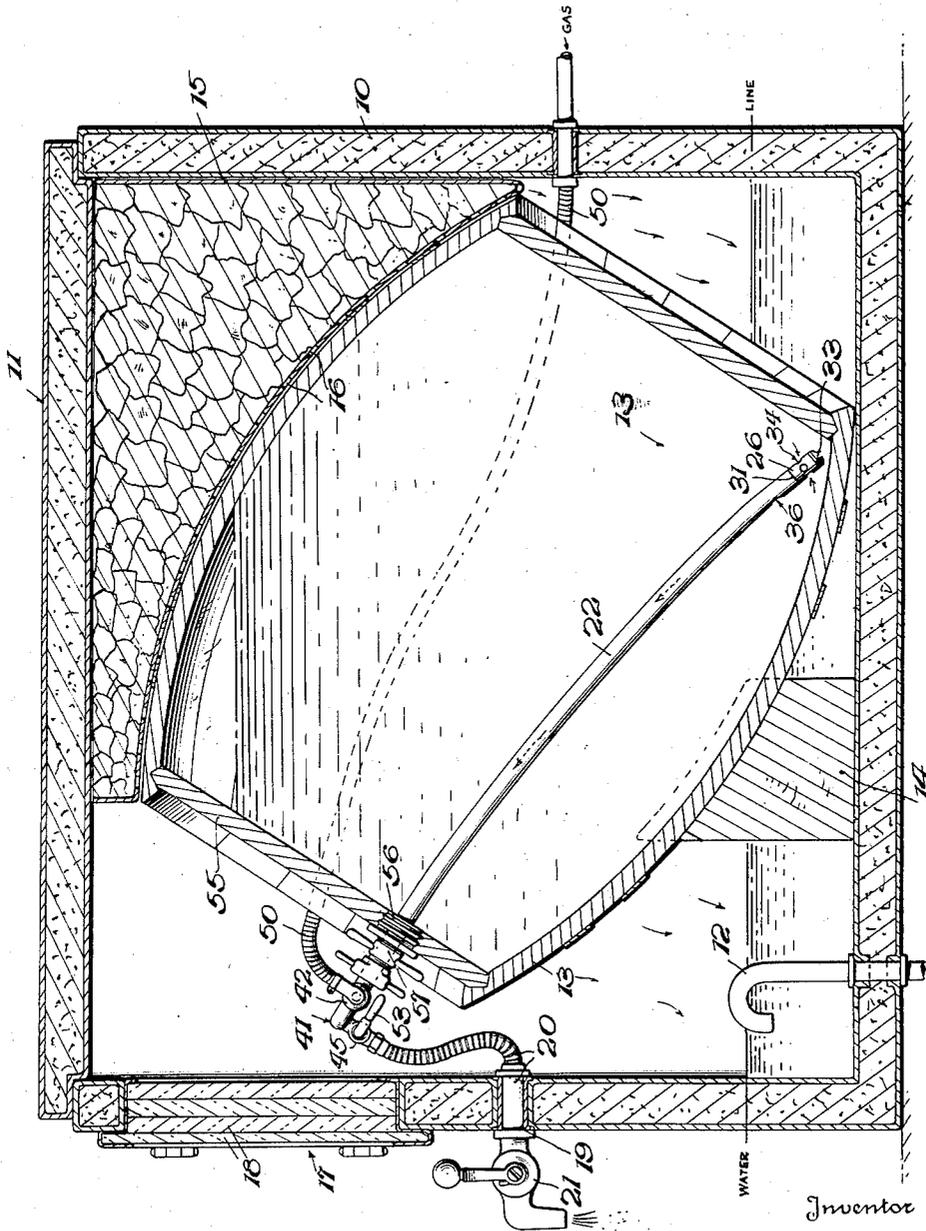


FIG. 1.

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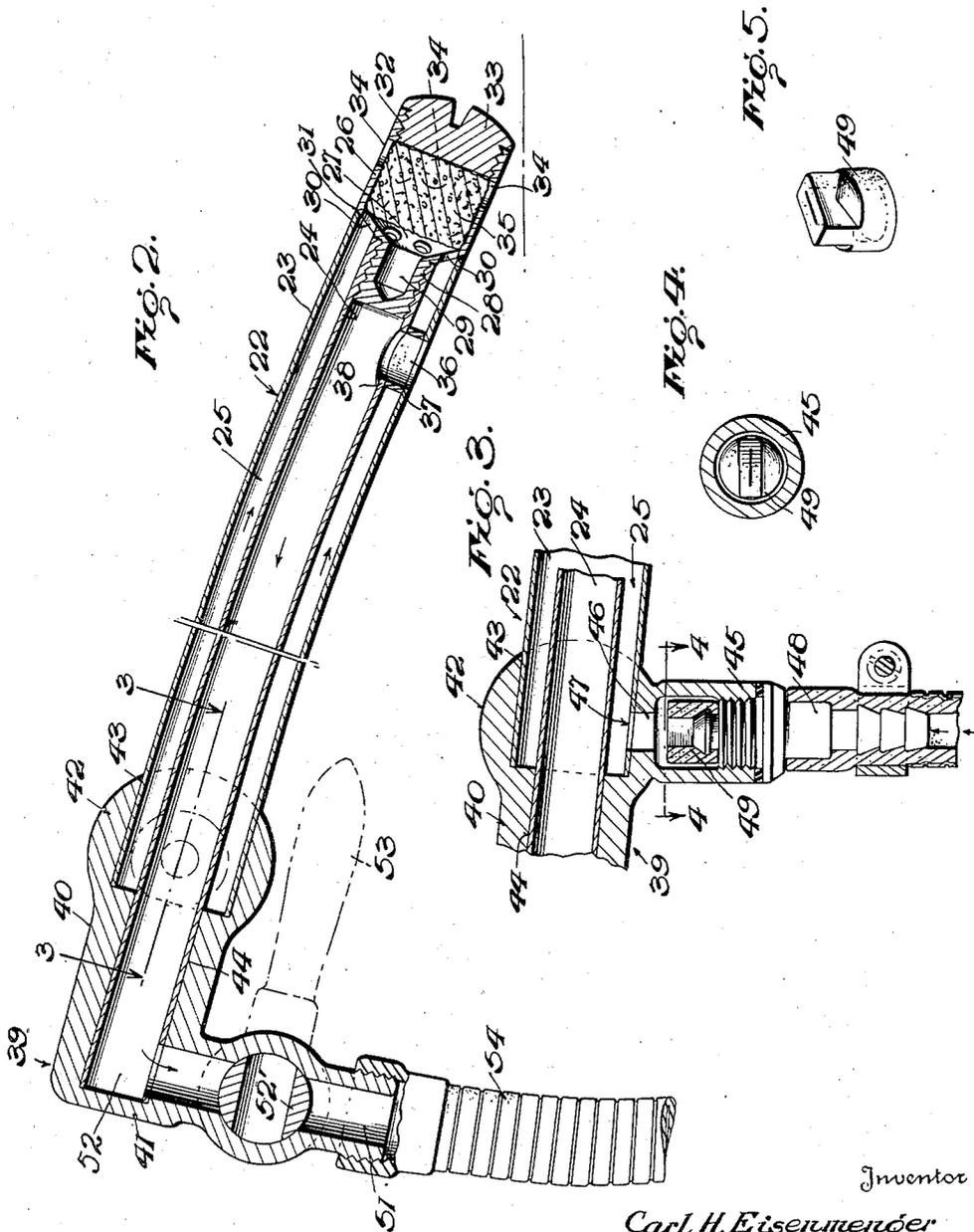
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DISPENSING APPARATUS FOR BEVERAGES

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16 Claims. (Cl. 225—1)

My invention relates to apparatus for dispensing beverages.

An important object of the invention is to provide apparatus of the above mentioned character for dispensing carbonated beverages and which will render the kegs or other containers of the beverage visible, at the point of dispensing.

A further object of the invention is to provide apparatus of the above mentioned character which will retain the receptacle of the beverage at a suitably cool temperature.

A further object of the invention is to provide means for affording pressure upon the beverage to dispense the same, and for withdrawing practically all of the beverage from its receptacle.

A further object of the invention is to provide means for introducing carbon dioxide gas into a beverage, such as beer, to carbonate the same, and also to provide suitable pressure upon the beverage, for dispensing purposes.

A further object of the invention is to provide a beer dispensing apparatus which will eliminate the use of the usual cooling coils.

A further object of the invention is to provide apparatus which will atomize or finely separate the carbon dioxide gas into the beverage beneath the level of the same.

A further object of the invention is to provide apparatus of the above mentioned character which is relatively simple in construction, cheap to manufacture and convenient in use.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a side elevation of dispensing apparatus embodying my invention, parts being shown in section.

Figure 2 is a central vertical longitudinal section through the dispensing apparatus, parts in elevation, and parts omitted,

Figure 3 is a longitudinal section taken on line 3—3 of Figure 2,

Figure 4 is a transverse section taken on line 4—4 of Figure 3, and,

Figure 5 is a perspective view of the rubber check valve.

In the drawings wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 10 designates a cooling or ice chest or box, of any well known or preferred type, having a lid or cover 11, adapted to

be moved to opened and closed positions. The chest or box is preferably water-tight and has a suitable inner lining. The level of the cold water from the melting ice is determined by a goose neck 12, extending through the bottom of the chest, as shown. Arranged within the chest 10 and disposed at an inclination is a keg 13, for holding beer or other carbonated or uncarbonated beverage, under pressure. This keg is supported in an inclined position by a saddle 14. An ice pan 15 is arranged within the chest 10, upon the top of the keg, and the bottom of the ice pan is perforated at 16, so that the cold water from the melted ice passes downwardly over the keg, to cool the same.

The chest 10 is provided in its front with a door 17, covered by panes of glass 18. This door may be opened and closed to afford access to the interior of the chest and also to render the keg visible from the exterior, when the door is closed. Near and beneath the door, the chest is provided with a sleeve 19, preferably having a gas-tight fit therewith, and this sleeve receives the tubular shank 20 of a spigot 21, of any well known or preferred type.

The dispensing apparatus includes a curved tubular unit 22, comprising an outer gas supplying tube 23 and an inner liquid dispensing tube 24, which are arranged in spaced concentric relation, affording a passage 25 between them.

The numeral 26 designates the shell of a nozzle having a rear tapered portion 27, rigidly connecting the shell 26 with a reduced plug 28. This reduced plug has screw-threaded engagement within the forward end of the inner tube 24, and is preferably locked therein by solder or any other suitable means. The plug 28 is provided with a gas receiving chamber 29, and the tapered portion 27 has apertures 30. These apertures are in communication with the passage 25 between the inner and outer tubes 23 and 24. The forward end of the outer tube is soldered or otherwise rigidly attached to the nozzle shell 26, at 31, to afford a gas-tight joint, and the apertures 30 are positioned between the tubes 23 and 24. The tubes 23 and 24 and the nozzle shell 26 are preferably circular in cross-section, and the nozzle shell 26 has the same diameter as the outer tube 23. The forward end of the nozzle shell 26 is screw-threaded for receiving the reduced screw-threaded portion 32 of a cap 33. The nozzle shell 26 is provided in its periphery with relatively large openings 34, disposed inwardly of the reduced screw-threaded portion of the cap. Arranged within the nozzle shell 26, between the

cap and the tapered portion 27 is a gas atomizing element 35, which may extend over the openings 34, if desired. This gas atomizing element may be held in place by the cap, or it may be held in place by sealing the same in position. I have found that good results are obtainable by forming the gas atomizing element 35 of a highly porous stone, earthenware or the like, while the invention is not necessarily restricted to this type of gas atomizing element, as other forms of gas atomizing elements may be employed.

The numeral 36 designates a tubular thimble, passing to openings 37 and 38 in the inner and outer tubes 24 and 23, and forming gas-tight joints with these tubes. The tubular thimble 36 is opened at both ends and is provided so that the beverage may pass from the exterior of the outer tube 23 into the inner tube 24. The tubular thimble is arranged near the reduced plug 28.

At the rear end of the tubular unit 22, there is an L-shaped tubular valve casing 39, having a longitudinal portion 40 and a transverse portion 41. The longitudinal portion 40 has an enlargement or head 42 on its forward end, provided with a counter-bore 43, receiving the outer tube 23, which is held therein by any suitable means to form a gas tight joint. The inner tube 24 projects into the inner or smaller bore 44 and its free end is closed by the transverse portion 41, as shown. The enlargement or head 42 has a tubular extension 45, formed integral therewith, and this tubular extension has a bore or port 46, in registration with an opening 47, drilled in the outer tube 23. A coupling 48 is secured to the tubular extension 45 and the tubular extension encloses a rubber check valve 49, of any well known or preferred type, which will permit of the entrance of carbonic acid gas or the like into the outer tube, but will prevent back flow of the same. The coupling 48 is connected with a pipe or hose 50, preferably extending to the rear of the chest 10, and connected with a suitable source of carbon dioxide gas under pressure. The transverse portion 41 of the valve casing 39 has its bore 51 in communication with an opening 52, formed in the side of the inner tube 24, near its rear end, and the passage of the beverage through the bore 51 is controlled by a rotary valve body 52', turned by a handle 53. A flexible pipe 54 is connected with the transverse portion 41 and is also connected with the inner end of the tubular shank 20 of the spigot 21.

The keg 13 is provided in its end 55 with a bushing 56, of any well known or preferred type, equipped with the usual stopper. As is well known, this stopper is forced into the keg when the keg is tapped. Detachably connected with the bushing 56 is a tapping device 57 of any well known or preferred type, and this tapping device is tubular to receive there-through the tubular unit 22 and formed therewith and with the bushing, a gas-tight joint. The invention is not restricted in use to any type of tapping device.

In use, the tapping device 57 is secured to the bushing having therein the usual stopper. The tubular unit 22 is passed through the tapping device 57 and the bushing 56 and forces the stopper into the keg. The valve 53 is now closed. The tubular unit is inclined downwardly toward the lower corner of the inclined keg, and hence the nozzle shell and thimble 36 remain submerged in the beverage until practically all of the beverage has been withdrawn. The tube 54 is connected with the spigot 21 and the carbon dioxide gas under pressure is fed through hose 50 and

enters the outer tube 23. The valve 53 is opened and the beverage may now be withdrawn by opening the spigot. The gas fed under pressure into the outer tube 23 passes through the apertures 30, through the gas atomizing element 35, and through openings 34, and becomes mixed or absorbed with the beverage and exerts a pressure upon the surface of the beverage. This pressure causes the beverage to pass through thimble 36 into and through the inner tube.

Having thus described my invention, I claim:

1. In a beverage dispensing apparatus, a heat insulating chest, adapted to contain an inclined keg, a perforated ice pan arranged above the keg within the chest, a tubular device extending through the raised end of the keg and inclined downwardly therein so that its intake end is arranged adjacent to the lower most portion of the inclined keg for removing practically all of the beverage, a spigot arranged exteriorly of the chest and having connection with the outlet end of the tubular device, and a transparent closure element for the chest so that the interior thereof is visible.

2. In a beverage dispensing apparatus, an outer tube, an inner tube arranged therein in spaced relation, a nozzle shell attached to the forward end of the outer tube and having a tapered part and a reduced plug secured to the tapered part, the plug engaging within the forward end of the inner tube and the tapered part being apertured, a gas atomizing element arranged within the nozzle shell, said nozzle shell having apertures in its side, a tubular element leading from the exterior of the outer tube to the interior of the inner tube, means for supplying a gas under pressure into the outer tube, and a valve device connected with the outlet end of the inner tube.

3. In a beverage dispensing apparatus, an outer tube, an inner tube arranged therein in spaced relation, a nozzle shell attached to the free end of the outer tube and having an intermediate apertured part and a plug secured to said part and engaging within the free end of the inner tube, means for closing the forward end of the nozzle shell, said nozzle shell being provided in its side with openings, a gas atomizing element arranged within the nozzle shell, a tubular part arranged near the nozzle shell and establishing communication between the exterior of the outer tube and the interior of the inner tube, a connection for supplying a gas under pressure into the outer tube, and a valve device connected with the outlet end of the inner tube.

4. In a beverage dispensing apparatus, an outer tube, an inner tube, a cap closing the forward end of the outer tube and adapted to force a stopper or the like into the keg, the outer tube having openings near the cap, a highly porous block arranged within the outer tube adjacent to the cap, a plug arranged within the corresponding end of the inner tube and having a gas receiving chamber, means arranged adjacent to the plug for establishing communication between the exterior of the outer tube and the interior of the inner tube, a connection for supplying a gas under pressure into the inner tube, and outlet means connected with the outlet end of the inner tube.

5. In a beverage dispensing apparatus, an outer tube having its forward end adapted to force a stopper or the like into a keg, a gas atomizing element arranged within the forward end of the outer tube, the interior of the forward end of the

outer tube having communication with the exterior of the outer tube, an inner tube arranged in spaced relation within the outer tube and having its forward end closed, means for establishing communication between the exterior of the outer tube and the interior of the inner tube, means for supplying a gas under pressure into the outer tube, and outlet means connected with the outlet end of the inner tube.

6. In a beverage dispensing apparatus, an outer tube having its forward end adapted to force a stopper or the like into a keg, such forward end having its interior in communication with the exterior of the outer tube, a gas atomizing element held within the forward end of the outer tube, an inner tube disposed within the outer tube and spaced therefrom, means arranged near the forward end of the outer tube for establishing communication between the exterior of the outer tube and the interior of the inner tube, means to close the forward end of the inner tube, a coupling device mechanically connecting the rear ends of the outer and inner tubes, said coupling device having an inlet opening in communication with the outer tube, and outlet opening in communication with the inner tube.

7. In a beverage dispensing apparatus, a cooling chest adapted to contain an inclined keg, a tapping device including an elongated body portion, said body portion comprising telescoping tubes, one tube serving to supply pressure and the other tube serving to permit of the discharge of the beverage, the elongated body portion extending through the upper end of the keg and being bent so that its lower end is disposed adjacent to the lowermost part of the keg for removing practically all of the beverage, and a spigot arranged exteriorly of the chest and connected with the tapping device.

8. In a beverage dispensing apparatus, an outer tube, a cap, an inner tube, a plug closing the end of the inner tube next to the cap, a gas atomizing element arranged between the plug and cap, means for supplying communication between the exterior of the outer tube and the interior of the inner tube, means for supplying gas under pressure into the outer tube, and outlet means connected with the inner tube.

9. In a beverage dispensing apparatus, an outer tube, a cap, an inner tube, a shell having a plug which engages within and closes the end of the inner tube next to the cap, the shell being arranged between the outer tube and cap and having apertures which communicate with the interior of the outer tube, a gas atomizing element engaging the shell, means for supplying communication between the exterior of the outer tube and the interior of the inner tube, means for supplying gas under pressure into the outer tube, and outlet means connected with the inner tube.

10. In a beverage dispensing apparatus, an outer tube, means to close the forward end of the outer tube and to atomize gas passing from the outer tube, an inner tube having its forward end closed, means arranged rearwardly of the first named means for establishing communication between the exterior of the outer tube and the interior of the inner tube, means for supplying gas under pressure into the outer tube, and outlet means connected with the inner tube.

11. In a beverage dispensing apparatus, a tapping device comprising an elongated body portion adapted to be inserted within and removed from the opening in a keg or like receptacle, the

elongated body portion comprising an outer tube provided near its forward end with a gas atomizing means to cause the gas to enter the beverage in minute streams, an inner tube, a tubular element connecting the interior of the inner tube and the exterior of the outer tube, means for supplying gas under pressure into the outer tube, and outlet means for the inner tube.

12. In a beverage dispensing apparatus, a combined tapping and carbonating device comprising an elongated body portion for insertion through an opening in the receptacle to be submerged in the beverage, said elongated body portion comprising an outer gas supply tube, an inner beverage discharge tube, an atomizing device covering the forward end of the outer tube and attached to the inner tube and serving to cause the carbonating gas to enter the beverage in minute streams, the inner tube having means of communication with the exterior of the outer tube, means for supplying gas under pressure into the outer tube, and outlet means connected with the inner tube.

13. A beverage cooling, carbonating and dispensing apparatus, comprising a chest, a keg adapted to be arranged within the chest and having means to hold a stopper, the keg being hermetically sealed when the stopper is in place within the stopper holding means, a tapping device adapted to be entirely separate from the keg during the shipment of the keg, the tapping device including an elongated body portion to be forced longitudinally through the stopper holding means for driving the stopper into the keg, the tapping device extending from the exterior to the interior of the keg, said body portion comprising inner and outer tubes, one tube serving as a carbon dioxide gas supply tube and the other tube serving as a beverage discharge tube, the elongated body portion having its lower end disposed adjacent to the lower portion of the keg to be positioned beneath the level of the beverage and for removing the beverage, the carbon dioxide gas supply tube having means to supply the carbon dioxide gas in minute streams to atomize the gas, such atomizing means being arranged below the level of the beverage and adjacent to the lower end of the body portion, means for supplying carbon dioxide gas under pressure into the carbon dioxide gas supply tube, means mounted separately from the tapping device to cool the beverage within the keg so that the tapping device may be inserted within or removed from the keg without disturbing the cooling means, and a spigot connected with the beverage discharge tube.

14. A beverage cooling, carbonating and dispensing apparatus, comprising a chest, a keg adapted to be arranged within the chest and having a stopper holding means, the keg being hermetically sealed when the stopper is in place within the stopper holding means, a tapping device adapted to be entirely separate from the keg during the shipment of the keg, the tapping device including an elongated body portion to be forced longitudinally through the stopper holding means for driving the stopper into the keg, the tapping device extending from the exterior to the interior of the keg, said body portion comprising inner and outer tubes, one tube serving as a carbon dioxide gas supply tube and the other tube serving as a beverage discharge tube, the elongated body portion having its lower end disposed adjacent to the lower portion of the keg to be positioned beneath the level of the beverage and for removing the beverage, the carbon dioxide gas supply tube having means to supply a carbon

dioxide gas in minute streams to atomize the gas, such atomizing means being arranged below the level of the beverage and adjacent to the lower end of the body portion, means to supply carbon dioxide gas under pressure to the carbon dioxide gas supply tube, means arranged within the chest exteriorly of the keg for holding ice in substantial contacting relation with the keg, and a spigot connected with the beverage discharge tube.

15. A beverage cooling, carbonating and dispensing apparatus, comprising means to hold a keg in an inclined position, said keg having means at its raised end for holding a stopper, the keg when the stopper is in place within the stopper holding means being hermetically sealed, a tapping device adapted to be entirely separate from the keg during the shipment of the keg, said tapping device including a rigid elongated body portion to be forced longitudinally through the stopper holding means for driving the stopper into the keg, the tapping device extending from the exterior to the interior of the keg, said body portion comprising inner and outer tubes, one tube serving as a carbon dioxide gas supply tube and the other tube serving as a beverage discharge tube, the body portion being inclined downwardly toward its free

end so that such free end is disposed adjacent to the lowermost part of the keg for removing practically all of the beverage, the carbon dioxide gas supply tube having means to supply the carbon dioxide gas in minute streams to atomize the gas, such atomizing means being arranged below the level of the beverage and adjacent to the low free end of the body portion, a spigot connected with the beverage discharge tube, and means to supply carbon dioxide gas under pressure to the carbon dioxide gas supply tube.

16. In a beverage dispensing apparatus, a chest having means for holding a keg inclined therein, ice supporting means arranged within the chest above the keg, a tubular device extending through the raised end of the keg and having its free end arranged adjacent to the lowermost portion of the keg for removing practically all of the beverage, a spigot arranged exteriorly of the chest and having connection with the outlet end of the tubular device, and a closure element for that side of the chest next to the raised end of the keg so that access may be had to the interior of the chest.

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