

Sept. 23, 1941.

D. COLVIN

2,256,550

DISPENSING DEVICE

Filed Sept. 26, 1939

2 Sheets-Sheet 1

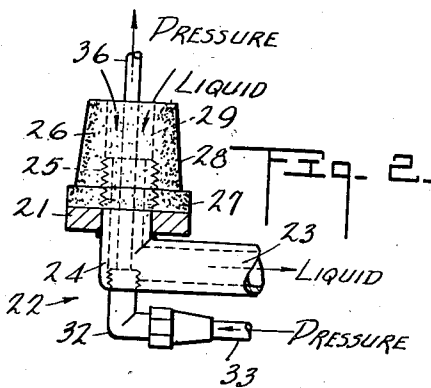
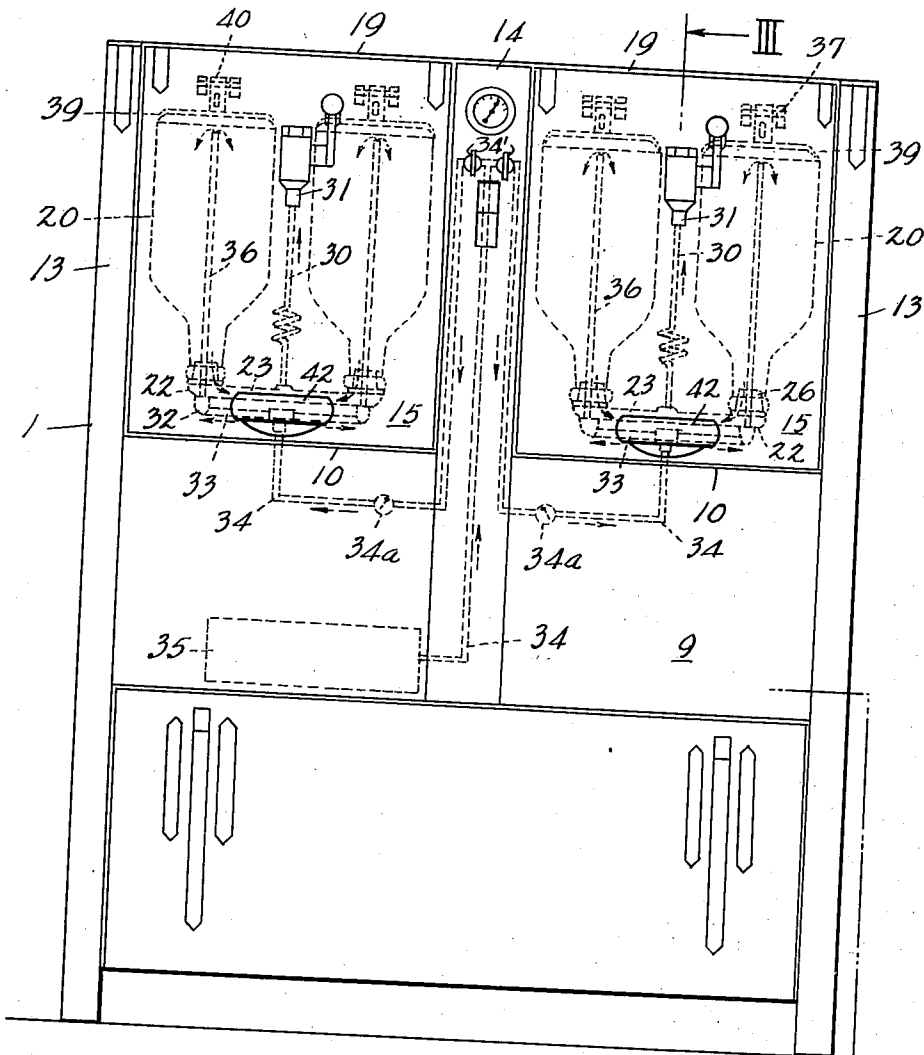


Fig. 1.

III

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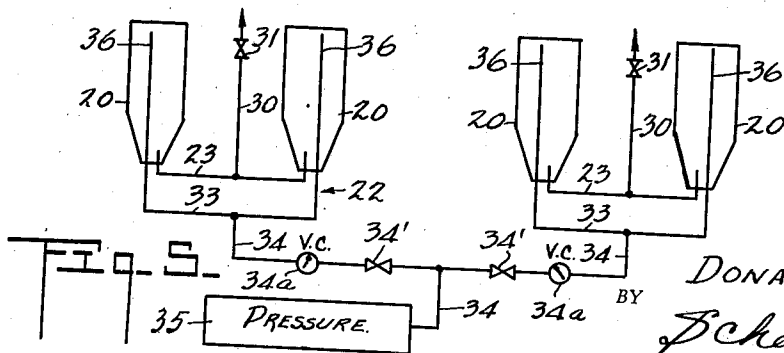
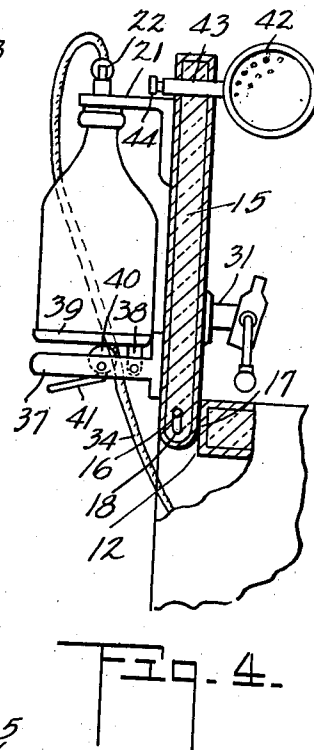
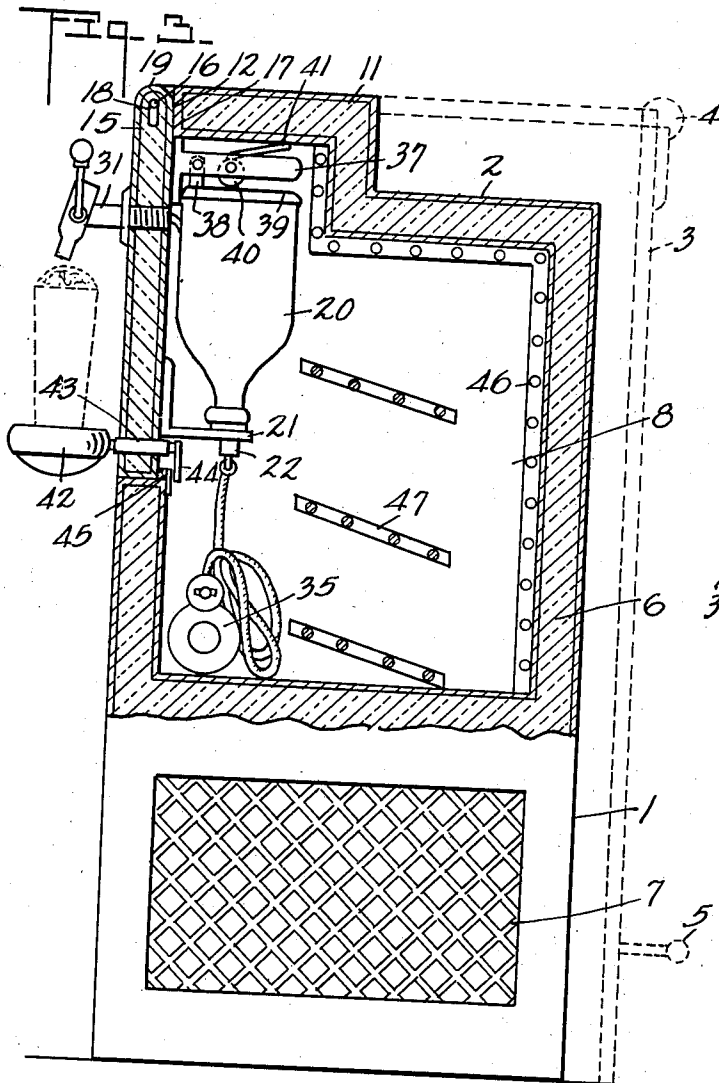
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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

2,256,550

## DISPENSING DEVICE

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Application September 26, 1939, Serial No. 296,532

6 Claims. (Cl. 225-17)

The present invention relates to dispensing devices, and contemplates certain improvements over the invention described in the co-pending application, Serial Number 235,271 of Jacob A. Stadtfeld. This application is a continuation in part of my copending application, Serial Number 246,637, filed December 19, 1938, for Dispensing devices.

Generally speaking, the invention relates to the dispensing of liquids, such as beer, from relatively large bottles, say one gallon or one-half gallon in size, under similar conditions to those accompanying the dispensing of the liquid from kegs or barrels.

In the co-pending application of Jacob A. Stadtfeld, it was proposed to use for this purpose a refrigerating cabinet with a swinging door, to provide means for mounting one or more bottles upon the inside of the door to assume inverted positions when the door is closed, to provide a faucet upon the outside of the same door and to provide suitable means to dispense the liquid through the faucet under pressure and under desired conditions affecting the temperature and physical properties of the liquid.

In the present invention it is proposed to provide certain improvements and refinements in the apparatus which will create more ideal conditions, facilitate the operation of the device and particularly the exchange of the bottles, effect a more even distribution of a cooling medium, allow of the accommodation of a reserve supply of bottles subjected to the same cooling medium and effect a more perfect dispensing of the liquid.

Other objects and advantages of my invention will appear as the specification proceeds and the novel features thereof will be set forth in the claims hereto appended.

The preferred form of my invention is illustrated in the accompanying drawings, in which:

Figure 1 shows a front view of my dispensing device, with portions of the interior construction shown in dotted lines;

Figure 2, a detail view of a portion of a distributing manifold forming part of my invention;

Figure 3, a vertical section taken along line III-III of Figure 1;

Figure 4, a fragmentary detail view similar to that of Figure 3 and showing the door in open position; and

Figure 5, a diagrammatic view illustrating the distributing manifold arrangement.

While I have shown only the preferred form of my invention, I wish to have it understood that

various changes or modifications may be made within the scope of the claims hereto attached without departing from the spirit of the invention.

In its preferred form, my invention comprises a cabinet 1, preferably rectangular in form and having a front section substantially of the height of the typical bar, while the rear section is set off, as at 2, for accommodation underneath the bar 3 indicated in dotted lines, which latter may be provided with suitable rails 4 and 5 in accordance with common practice. It will be noticed that, in this arrangement, the top of the front section of the cabinet comes substantially flush with the top of the bar as shown in Figure 3.

The walls of the cabinet are suitably insulated, as shown at 6, and the cabinet is divided into two compartments, a lower one 7 for accommodating suitable refrigerating apparatus, not shown, and an upper compartment 8 for containing the apparatus and articles to be described hereinafter.

The front wall 9 is formed with two door openings 10 which extend from an intermediate portion to the top of the cabinet, the top wall 11 being suitably recessed, as at 12, to leave the space above the door openings clear. The side walls 13 and a suitable intermediate front wall section 14 form side frames for the door openings.

Front doors 15 are swingably supported in the door openings with freedom of movement between a conventional closing position and the vertical open position indicated in Figure 4. The principal feature of these doors is that they automatically lock in open position. To accomplish this, I use hinge pins 16 for each door, the pins projecting inwardly from the frame members 13 and 14 in aligned relation and near the upper ends thereof, substantially on the median line of the top wall 11 of the cabinet and on the median plane of the front wall 9. The pins are thus spaced a suitable distance from the front edge of the top wall, the latter edge forming an abutment 17 for each door when the latter is in either closed or wide open position as shown in Figures 3 and 4.

Each door is formed, in the upper portions of the side edges thereof, with vertical slots 18 adapted to receive the pins 16 and allowing the door to ride on the pins in vertical direction when the door is in either one of the vertical positions. The top edge 19 of each door is rounded on a circular arc concentric with the up-

per rounded margin of the slot 19 and on a radius corresponding substantially to the distance between the center of the pins 16 and the abutment 17.

This construction allows the door to freely swing while the pins 16 are in the upper ends of the slots. But when the door is opened and swung into vertical position above the cabinet, it rides downward on the pins 16 as shown in Figure 4, with the flat face of the door bearing against the abutment, and since now the upper edge of the door is not concentric any more with respect to the pins, the door is firmly locked in its open position through the co-action between the pins and the abutment 17.

To release the door it is lifted until the now longer end of the slot reaches the pin, whereupon it is free to swing downward on the pin.

Each door is adapted to support two bottles which are secured in position while being held upright when the door is open and which swing into inverted position when the door is closed.

For supporting the two bottles upon the inner face of the door, I provide two brackets 21 near the free end of the door, the brackets pointing inwardly when the door is closed and outwardly when the door is open. These brackets support the manifold 22 in the manner shown in detail in Figure 2. The latter includes a horizontal pipe 23 having elbows 24 at the outer ends and threaded extensions 25 at the elbows.

The extensions 25 are secured in the brackets 21 and project therethrough and have suitable stoppers 26 of yielding material secured upon the ends thereof. The stoppers have an enlarged base 27 and are tapered, as shown at 28, to receive the necks of the bottles. They have axial bores 29 substantially co-extensive with the elbow extensions. The brackets 21 form supporting bases for the stoppers 26 (see Figure 2).

The pipes have a central outlet 30 connecting with a faucet 31 secured to the door so as to project outward therefrom and to discharge in a downward direction, when the door is closed, as shown in Figure 3.

The elbows 24 of the pipe 23 have a second set of elbows 32 of much smaller diameter threaded into the backs thereof, as shown in Figure 2, and these elbows are interconnected by a pipe 33, which latter has flexible connection, at an intermediate point, and through a tube 34, with a suitable container 35 for a compressed gas, such as carbon dioxide. This container, it will be noted, is arranged within the cabinet and the tube 34 is sufficiently long to allow of the swinging door movements. Check valves 34a are provided in the branches of the tube 34 (see Figure 5) to prevent back flow of fluid toward the container 35.

The elbows 32 have pipe extensions 36 projecting axially through the stoppers to within close proximity of the bottom ends of the bottles as shown in Figure 1.

For supporting the bottom ends of the bottles each door is provided, near its hinged end, with a second set of brackets 37, which are mounted in opposing relation to the first brackets and are spaced therefrom by a distance slightly in excess of the length of the bottles to be used. Each of these brackets has pivotally supported thereon, through a small post 38, a bottle rest 39, which may be raised into horizontal and bottle clamping position by means of a cam 40 having a handle 41. The bottle rest is preferably dished to conform to the outline of the bottom of the

bottle and automatically drops into bottle-releasing position when the cam is moved into the opposing direction.

Upon the outside of the door there is mounted, in opposing relation to the faucet, a drip pan and a glass support 42, which is supported by a shaft 43 revolvably mounted in the door. The shaft has, at its inner end, an arm 44 adapted to hook behind a lip 45 projecting from the front wall at the bottom of the door opening, so as to lock the closed door. It will be noted that the relative positions of the drip pan and the arm 44 are such that the latter locks the door when the former is in operative position relative to the faucet for holding a glass or for receiving drippings from the faucet.

The bottom portion of the cabinet is equipped with suitable refrigerating apparatus and the refrigerant is passed through a coil 46 lining the rear wall and the bottom of the offset 2 in the top wall of the cabinet.

The device as described leaves considerable space between the bottle mounting and the rear wall and this space is provided with suitable shelves indicated at 47 for holding a reserve supply of bottles which are thus subjected to the influence of the cooling medium.

The operation of my dispenser is as follows: For mounting the bottles, the door is swung into open position as shown in Figure 4 where it locks itself automatically as previously described. A bottle, from which the conventional cover has been removed, is then guided, in slanting position, with its neck toward and into engagement with the stopper 26, until it clears the previously lowered bottle rest 39, whereupon it is swung into vertical position so that its bottom comes opposite the rest 39. The cam 40 is then operated for raising the latter, and for deepening the engagement of the bottle neck upon the stopper whereby the upper end of the bottle neck is forced into firm engagement with the collar or base 27 and a leak-proof connection is established.

The door is then swung closed, which requires a slight initial lifting and is locked in closed position by a turning movement of the drip pan, which engages the arm 44 behind the lip 45 and at the same time brings the drip pan into horizontal position.

The bottles now occupy the inverted position shown in Figures 1 and 3. Both bottles of each door are connected, through the manifold 22, with the faucet 31 and both bottles receive, through the same manifold, carbon dioxide under pressure, which is delivered through the pipes 33 into the upper portions of the bottles and which urges the liquid contents of the bottles under substantially equal pressure toward the faucet. Thus the latter, when opened, draws upon both bottles simultaneously, and both bottles will empty at the same time.

Valves 34' are provided in the branch lines of the tubes 34 (see Figures 1 and 5). In this manner the two bottles on one of the doors 15 may be changed while the two bottles on the other door are being used for dispensing purposes.

I claim:

1. A distributing manifold comprising a conduit having elbows at the ends thereof, bottle stoppers mounted upon the elbows and adapted to receive the open necks of bottles, each stopper being hollow to provide a passage leading to the bottle, a dispensing faucet connected to said conduit, a second conduit having elbows secured

upon the backs of the former elbows and in axial alinement therewith, extensions of the second elbows passing centrally through the first elbows and the stopper and communicating with the interior of the bottles, and means for admitting a pressure medium through the second conduit.

2. A distributing manifold comprising a conduit having upwardly extending ends, bottle stoppers mounted upon said ends and adapted to receive the open necks of inverted bottles, means engaging the bottle stoppers for supporting the latter and the bottles and the conduit, each stopper being hollow to provide a passage leading to the bottle, a dispensing faucet connected to the conduit to discharge liquid from all of the bottles simultaneously, pressure pipes passing through the stoppers into the bottles, and means suspended from the conduit for delivering a pressure medium through said pipes to the bottles to maintain liquid in the bottles under pressure.

3. A distributing manifold comprising a conduit having upwardly extending ends, bottle stoppers mounted upon said ends and adapted to receive the open necks of inverted bottles, means engaging the stoppers for supporting the latter and the bottles and the conduit, each stopper being hollow to provide a passage leading to the bottle, a dispensing faucet connected to the conduit to discharge liquid from all of the bottles simultaneously, pressure pipes passing through the stoppers into the bottles, means suspended from the conduit for delivering a pressure medium through said pipes to the bottles to maintain liquid in the bottles under pressure, and a single control for the pressure means.

4. In a distributing manifold, a conduit having an elbow, a bottle stopper mounted on the elbow and adapted to receive the open neck of a bottle, the stopper being hollow to provide a passage leading to the bottle, a bracket secured to the elbow and forming a supporting base for the stopper, a dispensing faucet connected to said conduit, a second conduit passing through the

elbow and the stopper and communicating with the interior of the bottle, the second conduit having a liquid-tight connection with the elbow at the point of passage therethrough, and means for admitting a pressure medium through the second conduit.

5. In a distributing manifold, a horizontal conduit having upward extensions at opposite ends thereof, a pair of supporting brackets having the extensions project therethrough, stoppers threaded on the projecting ends of the extensions and bearing on the brackets for supporting the extensions, the stoppers being cored to form continuations of the conduit, inverted bottles having necks fitting over the stoppers and supported thereby, whereby liquid contained in the bottles is made to flow into the conduit, an outlet faucet for the conduit, means for supporting the faucet at an elevation higher than the conduit, a second horizontal conduit of smaller diameter arranged below the first conduit and having upward extensions at opposite ends thereof, the latter extensions being threaded into the bottom of the first conduit in axial alinement with the first extensions, tubes secured to the second extensions and projecting axially through the first extensions and the stoppers to within close proximity of the upper end of the inverted bottles, and means for admitting a pressure medium through the second conduit for forcing the liquid through the first conduit.

6. In a distributing manifold, a pair of brackets, means for supporting the same in spaced relation, a horizontal conduit having upward extensions projecting through the brackets, stoppers secured to the projecting ends of the extension and bearing on the brackets for supporting the conduit, the stoppers being cored to form continuations of the conduit and a second conduit suspended from the first conduit and having extensions projecting axially through the first extensions and the stoppers.

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