

May 8, 1928.

F. M. GILSTRAP ET AL

1,668,897

LIQUID VENDING MACHINE

Filed April 6, 1925

2 Sheets-Sheet 1

Fig. 1.

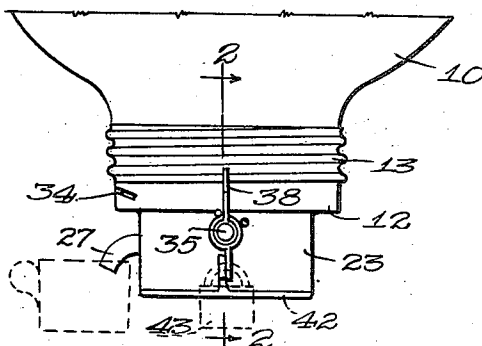
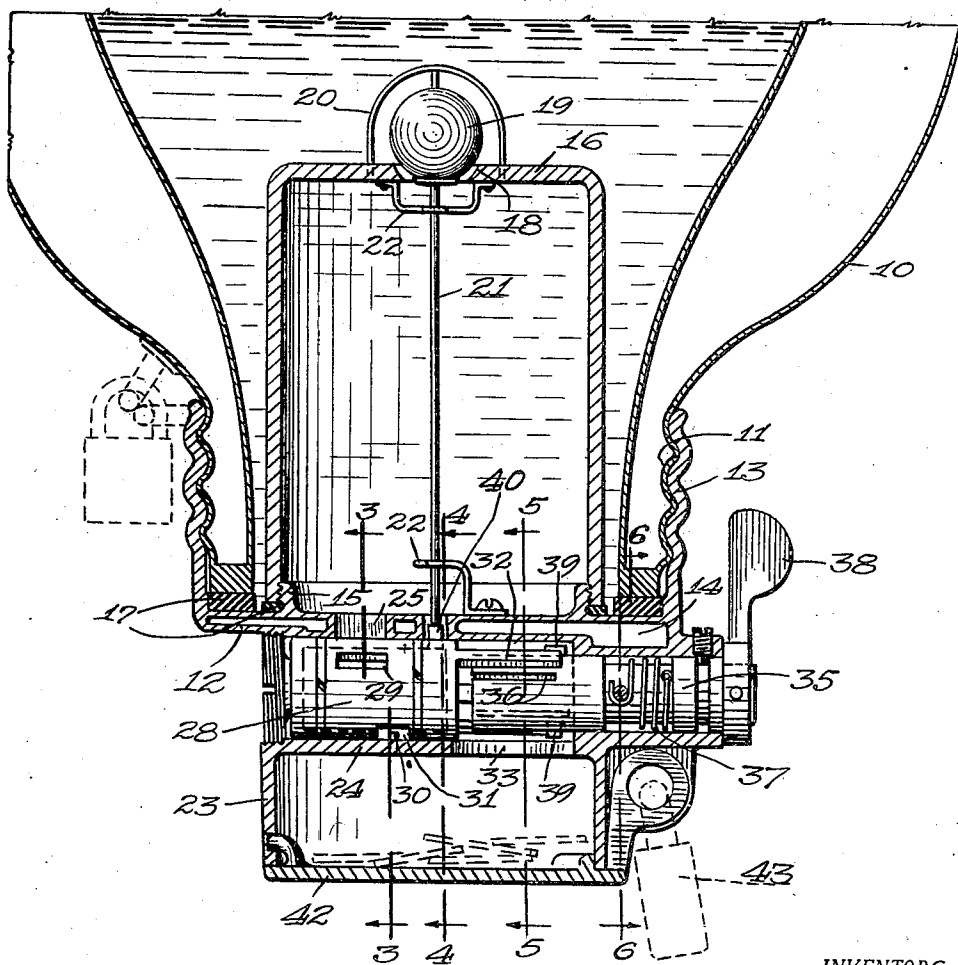


Fig. 2.



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Fig. 3.

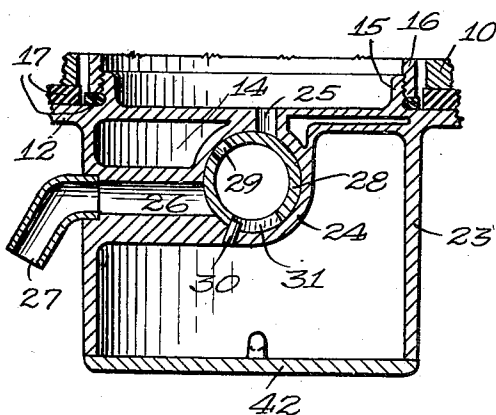


Fig. 4.

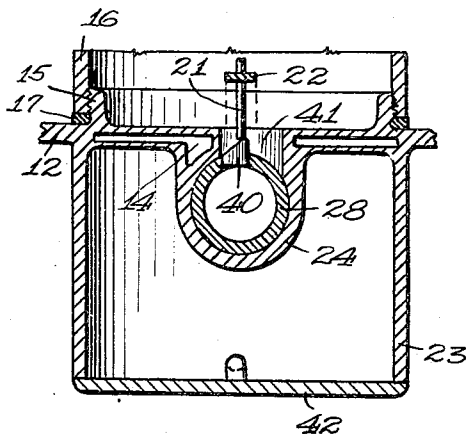


Fig. 5.

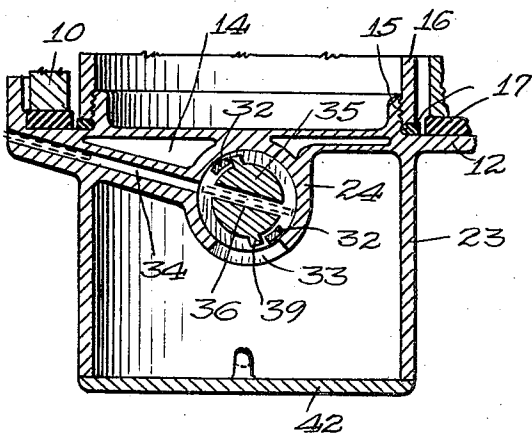
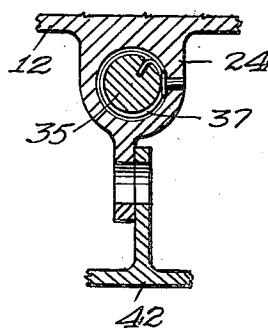


Fig. 6.



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UNITED STATES PATENT OFFICE.

FRANK M. GILSTRAP AND CLAIRE S. NEWBERRY, OF LOS ANGELES, CALIFORNIA.

LIQUID-VENDING MACHINE.

Application filed April 6, 1925. Serial No. 20,987.

Our invention relates generally to vending apparatus, and more particularly to a machine that is designed to vend or discharge a measured or predetermined amount of liquid and the vending operation being dependent upon the insertion into the machine of a coin of proper value, and the subsequent manual actuation of mechanism that is under control of said inserted coin.

10 The principal objects of our invention are, to provide a relatively simple, practical and efficient coin-controlled vending attachment that may be readily applied to and advantageously associated with the now generally used thermos or heat insulated jar or bottle-like containers; to provide a liquid vending apparatus wherein the container that receives and holds the predetermined amount of liquid that is to be dispensed is wholly surrounded by the body of liquid within the supply container, thereby minimizing temperature losses and insuring the delivery of liquid that has the same temperature as the volume of liquid within the supply container, and further, to provide a liquid vending attachment that is relatively simple in construction, capable of being easily and cheaply produced and which will be very effective in performing its intended functions.

With the foregoing and other objects in view, our invention consists in certain novel features of construction and arrangement of parts that will be hereinafter more fully described and claimed and illustrated in the accompanying drawings in which:

Fig. 1 is an elevational view of our improved liquid dispensing mechanism applied to the mouth of a heat insulated liquid container.

Fig. 2 is an enlarged section taken on the line 2—2 of Fig. 1.

Fig. 3 is a vertical cross section taken on the line 3—3 of Fig. 2.

45 Fig. 4 is a vertical cross section taken on the line 4—4 of Fig. 2.

Fig. 5 is a vertical cross section taken on the line 5—5 of Fig. 2.

50 Fig. 6 is a vertical cross section taken on the line 6—6 of Fig. 2.

Referring by numerals to the accompanying drawings, which illustrate a practical embodiment of our invention, 10 designates a container for the liquid that is to be vended and if said liquid is to be dispensed either hot or cold, the walls of said container are

suitably insulated or constructed so as to minimize transference of hot or cold temperatures.

A very desirable form of container to which our vending attachment may be applied, is a wide mouthed bottle or jar having one or more vacuum chambers in its walls and which types of containers are now generally used and may be readily obtained in the open market.

This form of container has an externally threaded neck portion 11 and our attachment is designed to be removably screw-seated on this neck.

The preferred form of our attachment includes a substantially cylindrical cap 12, preferably of metal and having an internally threaded wall 13 that is adapted to screw onto neck 11. The base portion of this cap is preferably provided with a vacuum or insulated chamber 14 to minimize transference of temperatures, and projecting upwardly from the top of said plate is an externally threaded annular flange 15.

The container for the predetermined amount of liquid to be dispensed comprises an inverted cup-shaped member 16 of metal, glass, porcelain or the like that is internally threaded at its lower end so as to be screw-seated on flange 15. The diameter of container 16 is preferably somewhat less than the internal diameter of neck 11, so that when said container is properly positioned for use within said neck, the wall of said container is entirely surrounded by the liquid within the supply container 10.

Suitable packing rings 17 are disposed between the lower edge of container 16 and member 12, and between said member 12 and the lower end of neck 10.

Formed in the top of container 16 is a seat 18 for a spherical valve 19, the latter being enclosed within a cage 20, and said valve is normally held elevated from its seat by a push rod 21 that extends axially through container 16 and being held for vertical sliding movement in suitably arranged bearings 22.

Formed integral with and depending from cap 12 is a short cylindrical housing 23, in the upper portion of which is formed a horizontally disposed tubular housing 24 that serves as a bearing for a rotary valve and its actuating stem.

Formed through the top plate of cap 12 is an aperture 25 and leading outwardly

from housing 24 is an outlet duct 26 to the outer end of which is fitted a discharge spout 27.

Arranged for rotary movement within housing 24 is a hollow cylindrical valve 28, both ends of which are plugged, and formed in the circular wall of this valve is an aperture 29 that is adapted to coincide with aperture 25.

A pin 30 seated in housing 28 projects into an arcuate slot 31 in valve 28 and limits the rotary movement thereof.

Projecting inwardly from the inner end of rotary valve 28 is a pair of oppositely disposed fingers 32, and formed in housing 24 directly below these fingers is an opening 33.

Formed through the side wall of cap 23 and leading downwardly to the chamber within housing 29 and in transverse alignment with opening 33 is an inclined slot 34 that functions as a coin chute.

Mounted for rotary movement in housing 24 and in longitudinal alignment with valve 28 is a cylindrical stem 35, the inner end portion of which is positioned between fingers 32 and formed through this inner portion of said stem is a coin-receiving slot 36 that is in direct alignment with coin chute 34.

Rotary stem is normally held in position so that slot 36 is in alignment with the lower end of chute 34 by a torsional spring 37 that is arranged on said stem, with one end secured thereto and the other end to housing 24.

Secured on the outer end of rotary stem 35 is a short operating handle 38, and formed on the inner portion of said stem are diametrically opposite lugs 39 that are adapted to engage the ends of fingers 32 when the stem is rotated by spring 37 to its normal position and thereby reversely rotate valve 28 to its normal position.

A cam lug 40 is formed on the upper portion of valve 28 and projects through an opening 41 formed in the base portion of cap 13 and when said valve is in normal position this lug engages beneath the lower end of rod 21, thereby holding same in its elevated position and consequently holding valve 19 off its seat.

The chamber within the lower portion of cap 23 serves as a coin receptacle and to close same, a plate 42 is detachably secured in any suitable manner to the lower end of said cap and suitable means such as a padlock 43 may be utilized for locking this plate in closed position.

Under normal conditions or while the machine is at rest, the various parts occupy the positions as illustrated in Figs. 2 to 5 inclusive and as lug 40 holds rod 21 elevated, valve 19 is normally lifted from its seat, thereby permitting beverage from supply container 10 to enter small container 16.

Inasmuch as container 16 is surrounded at the sides and top by the beverage within container 10, the temperature of the beverage within the two containers will be practically the same.

To effect a discharge of the contents of container 16, a coin of proper value is inserted in chute 34, and said coin will pass downwardly through said chute and pass into slot 36 in stem 35.

Handle 38 which normally stands in a vertical position is now engaged and turned to the right or clockwise and by so doing, the edges of the coin that project beyond the surface of stem 35 will engage the ends of fingers 32, thereby imparting rotary motion to valve 28.

Following this action, lug 40 moves from beneath the lower end of rod 21, thereby permitting said rod to drop and consequently permitting ball valve 19 to rest upon its seat, to cut off the further flow of liquid into container 16 and as valve 28 is rotated to the limit of its movement, port 29 will register with port 25, thereby permitting the liquid to discharge from container 16 through ports 25 and 29, valve 28, duct 26 and spout 27 into a cup or like receptacle.

As soon as the pressure on handle 38 is relieved and spring 37 starts to return stem 35 to its normal position, the coin in slot 36 is released and said coin drops into the chamber within housing 23.

As stem 35 continues to rotate back to its normal position, lugs 39 engage the ends of fingers 32 and as a result, cylindrical valve 28 is rotated to its normal position, thereby moving port 29 out of register with port 25.

Simultaneous with this action, lug 40 re-engages beneath the lower end of rod 21, thereby elevating the latter and lifting valve 19 from its seat, which action permits receptacle 16 to refill with liquid from the supply within container 10.

Among the particularly desirable features of our invention are, the readily removable and replaceable unitary structure that includes the closure cap, the container for receiving a predetermined amount of the beverage to be vended, the rotary valve, the coin-controlled valve operating mechanism and the coin receptacle, also the feature of extending the beverage container, that is carried by the closure, upwardly into the large mouth and neck of the supply container, thus insuring the maintenance of the beverage within container 16 at the same temperature as that of the supply of beverage in container 10.

Obviously, the unitary cap structure contemplated by our invention, may be applied to various forms of containers and the latter may be formed with or without walls that are insulated or packed against temperature transference.

It will be understood that minor changes in the size, form and construction of the various parts of our improved vending machine may be made and substituted for those
5 herein shown and described without departing from the spirit of the invention, the scope of which is set forth in the appended claim.

We claim as our invention:

10 In a liquid vending machine, a combination with a liquid container provided at its lower end with an opening, a closure removably positioned on the lower end of said container for closing the opening therein,
15 a hollow member carried by said closure and extending upwardly into the chamber

within the container the wall of which hollow member is spaced apart from the wall of the container so that said hollow member is entirely surrounded by the
20 liquid within the container, the lower portion of said closure being provided with a valved outlet, an inlet check valve located at the upper end of said hollow member and manually operable means arranged on
25 the underside of said closure for simultaneously opening the valved outlet and for permitting said valved inlet to close.

In testimony whereof we affix our signatures.

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