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I. J. NELSON
SELF-DISPENSER UNIT

3,065,883

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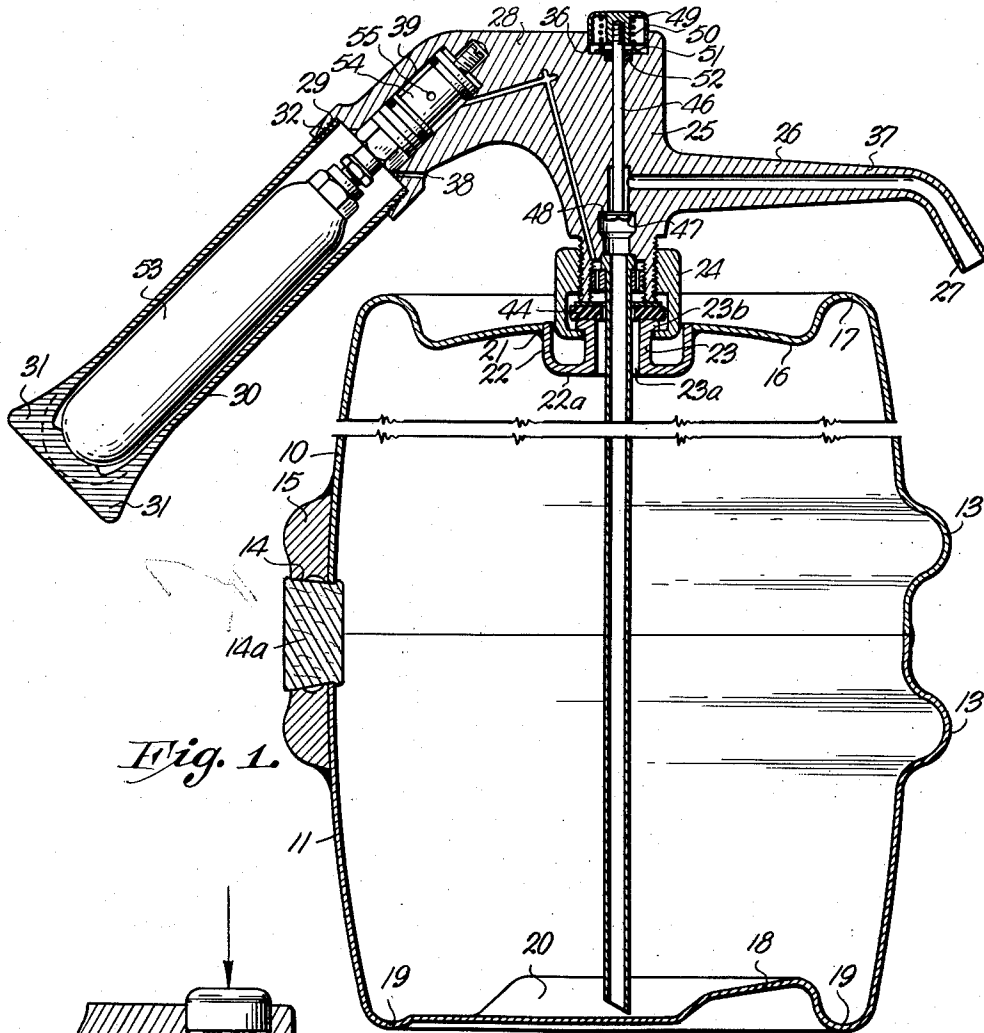


Fig. 1.

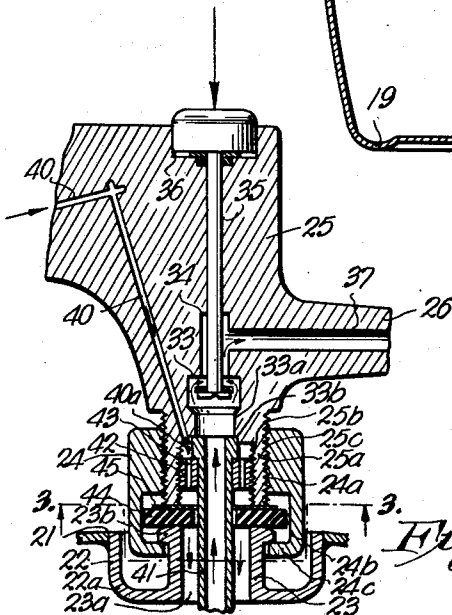


Fig. 2.

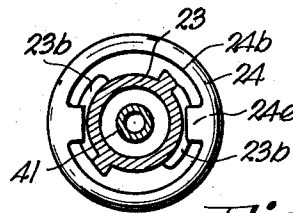


Fig. 3.

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SELF-DISPENSER UNIT

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This invention relates to small barrels or "barrelettes" for the storage and dispensing of liquids and refers more particularly to a self-dispensing barrelette wherein compressed gas is employed to dispense the liquid from the barrelette in controlled fashion.

Barrels having a filler opening in the side thereof and a venting or dispensing opening in the head thereof are known in the art. It is conventional to provide the filler opening in the side of the barrel between a pair of beads formed in the wall of the barrel. It is also known to provide the venting or dispensing opening centrally of a recess in the head of the barrel surrounded by a circumferential chime. However, means have not been provided to dispense liquids from barrels and particularly barrelettes (for example, one-eighth size barrels) by the force of stored gas in such manner that the dispensing is strictly controllable, the liquid dispensed is maintained free of contact of any part of the barrelette, the barrelette may be manipulated by handling only the dispensing means and, finally, wherein the entire volume of the barrelette may be scavenged by the gas drive.

Therefore, an object of the instant invention is to provide, in combination, a barrelette and dispensing means therefor which will effectively dispense in controlled fashion the liquid contents of the barrelette under the impetus of compressed gas.

Another object of the invention is to provide dispensing means adaptable to a barrelette construction wherein the barrelette and dispensing means may be both handled and held by the user by means of a handle construction built into the dispensing mechanism and wherein none of the dispensed liquid will contact any portion of the barrel in normal operating position.

Another object of the invention is to provide, in combination, a barrelette with dispensing mechanism therefor for driving the liquid contents of the barrel in controlled fashion by compressed gas wherein the operator may hold the barrelette and dispensing mechanism in one hand with easy convenience and also simultaneously dispense in controlled fashion the liquid from the barrelette with the same hand.

Another object of the invention is to provide dispensing means in combination with a barrelette, the combination of which is rugged in construction, attractive in appearance, easily dismantled for repair or replacement of parts, convenient to handle, and which has a long life in hard and extended use.

Yet another object of the invention is to provide a compressed gas drive dispensing mechanism for barrelettes which may be attached to or removed from the barrelette readily and may be applied successively to a number of barrelettes.

Still another object of the invention is to provide a barrelette liquid dispensing mechanism employing compressed gas which employs a very simple yet positive acting in safe dispensing mechanism for controlling the compressed gas relative the barrelette.

Other and further objects of the invention will appear in the course of the following description thereof.

In the drawings, which form a part of the instant specification and are to be read in conjunction therewith, an embodiment of the invention is shown and, in the various views, like numerals are employed to indicate like parts.

FIG. 1 is a side-sectional view through a combination

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barrelette and attached dispensing mechanism embodying the invention.

FIG. 2 is an enlarged detail view of a portion of the interconnected dispensing mechanism and barrelette showing the details of fluid flow when the dispensing mechanism is in action.

FIG. 3 is a view taken along the line 3-3 of FIG. 2 in the direction of the arrows.

Referring to the figures, the barrelette is formed of two opposed sections 10 and 11, each substantially cup-shaped in form and having their rims contiguous and in abutting relationship when the barrel body is assembled. Sections 10 and 11 are welded together as at 12 and each section has a bead 13 rolled or otherwise formed therein to strengthen the annular, practically cylindrical wall of the body and further to present narrow faces to support the barrelette if it should be rolled or placed on its side. A typical barrelette would range in size from one-sixteenth to one-quarter of a normal barrel, thus an eighth-barrel, shown in the drawings, would include and contain 3.87 gallons with the dispenser unit installed.

A side filler opening 14 is provided in reinforcing block 15 circumferential thereto. Block or bung plate 15 strengthens the barrel body at the zone of the bung or filler opening. The filler opening and block in this instance are positioned between the closely surrounding paired beads 13 which also serve to protect the block and filler openings. In a conventional size barrel, the purpose of block 15 is to permit insertion of a wooden plug 14a, as is the custom, which is later removed when the barrel is to be refilled, all without destructive results. This construction is particularly employed when the barrel is formed of sheet aluminum as aluminum sheet will not withstand the excessive pressure usually exerted at the filler opening of the barrel when a bung is driven to place. The insertion of such a plug is required in all "barrelettes" or one-eighth ($\frac{1}{8}$) to one-quarter ($\frac{1}{4}$) size barrels. Block 15 is substantially square and has its ends terminating in alignment with the beads 13. The block is welded to the barrel body around its edges and to the filler opening centrally thereof.

The upper end of the barrel is dished as at 16 and an annular rim or chime 17 is provided around the dished portion. The bottom of the barrel is also centrally dished as at 18, the dished portion 18 being surrounded by a circumferential chime 19. However, an outwardly grooved channel 20 is provided for a purpose to be described. The chimes and beads are formed with substantial radii of curvature so that the vessel is provided with smoothly contoured surfaces substantially free of angles or sharp corners which might trap sediment, foreign matter or solids carried by the contained liquids.

An opening 21 is provided in one of the vessel heads, hereinafter referred to as the upper head of the vessel. Opening 21 has conventional Peerless Tap 22 welded therein, the latter providing a well 22a formed centrally of the head with cylindrical wall 23 forming opening 23a extending centrally upwardly therefrom. Split lip or flange 23b is formed circumferentially of the upper end of wall 23. The positioning of opening 21 centrally of chime 17 tends to protect the opening.

A cylindrical adapter generally designated 24 has an internally threaded upper opening 24a therethrough with circumferential recess 24b therebelow above split flange 24c adapted to engage lip 23b. Valve head 25 has lower downwardly extending engaging wall 25a which is internally threaded as at 25b and externally threaded as at 25c to engage adapter opening 24a. A nozzle 26 extends from one side of the valve head, preferably past the chime 17 and has a downwardly angled outer end 27 preferably with the opening thereof laterally at least slightly outside beads 13. Handle portion 28 extends

from the opposite side of the valve head and has internally threaded wall portion 29 at the extremity thereof. Gas cartridge receiver 30, which is hollow and preferably has paired lower outer fins 31 (to make it easier to tighten by hand) has externally threaded upper portion 32 to removably connect with wall portion 29. The engagement of tube 30 with handle portion 28 of the valve head comprises the handle of the dispensing means and the barrelette-dispensing means combination. The connection between the container 30 and wall 29 should be of sufficient strength to support the weight of the full barrelette when grasped by the user. The user's second finger fits inside of chime 17 to permit part of the weight to be carried by the valve head.

Enlarged chamber 33 is formed above and connecting with the space defined by lower wall 25 of the valve head. Lesser diameter cylindrical passage 34 extends vertically upwardly therefrom. A further vertical passage 35 in the valve head extends upwardly to recess 36 which opens out of the top of the valve head. A flow passage for liquid 37 connects to passage 34 and passes out of the nozzle 26.

Emergency pressure relief passage 38 connects with the space defined by wall 29 in handle portion 28 and passes under the handle portion 28. A recess 39 extends upwardly into handle portion 28 of the valve head to receive the pressure regulator to be described. Flow path 40 passes from recess 39 to the space defined by downwardly extending wall 25a through handle portion 28 and valve head 25. In the upper portion of downwardly extending wall 25a is provided a passage 33a which connects with space 33 and has a circumferential recess 33b at its lower end communicating into the space defined by the inwardly threaded portion 25b of wall 25a. A flow pipe 41 fits at its upper enlarged end into this circumferential recess 33b whereby to connect through passage 33a with space 33. Pipe 41 is preferably of sufficient length to reach closely adjacent the bottom of slot 20 in dished portion 18.

A threaded lock ring 42 having a plurality (preferably 4) of passages or holes 43 extending therethrough is threadedly received on the internally threaded portion 25b of wall portion 25a and abuts circumferentially against the lower surface of the enlarged head of tube 41 whereby to maintain the latter strongly pressed up into recess 33b. Thus the upper end of tube 41 is tightly sealed into recess 33b and a circumferential chamber 40a is provided between the top of lock ring 42 and the under surface of the valve head 25a from which exits passage 40 and in which groove 33b is formed. A sealing gasket 44 is positioned between the lower end of wall 25a and the upper flange 23b of tap 22. Retainer ring 45 is received between the top of gasket 44 and the bottom of wall 25a. Sufficient annular space is provided between tube 41, gasket 44 and retainer ring 45 that carbon dioxide gas is free to pass down into opening 23a and thence into the barrelette.

Valve shaft 46 is slidably received within passage 35 and has enlarged flange 47 attached to the lower end thereof with resilient sealing material 48 on top thereof. Hollow cap 49 is removably threaded to the top of shaft 46, while spring 50 abuts washer 51 in recess 36 with its lower end and the inside surface of the cap 49 with its upper end. Sealing gasket 52 is positioned in a recess below washer 51 to prevent any leakage of liquid out of passage 35.

Carbon dioxide storage container 53 of conventional type is positioned in tube or cylinder 30 and is connected to a pressure regulator 54 also of conventional type such as that shown in Patent No. 2,855,950 "Pressure Reducing and Regulating Valves, Etc.," issued October 14, 1958, to R. R. Phillips. As both of these constructions are conventional they will not be described.

Suffice it to say that upon connecting the carbon dioxide storage vessel to the pressure regulator in conventional

well-known fashion, the stored gas passes out of opening 55 at staged-down pressure from the original storage pressure, into recess 39 and thence to flow path 40. From flow path 40 through plug passage 43, the gaseous pressurization medium is applied to the liquid in the barrelette at the top surface thereof. Upon depression of cap 49 by the thumb of the operator, flange 47 unseals passage 34, thus permitting liquid to flow up through pipe 41 and out of passage 37 in nozzle 26. Release of cap 49 permits spring 50 to return the plate 47 and sealing material 48 to sealing relationship relative passage 34.

From the foregoing it will be seen that this invention is one well adapted to attain all of the ends and objects hereinabove set forth together with other advantages which are obvious and which are inherent to the structure.

It will be understood that certain features and sub-combinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

As many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim:

1. In combination, a barrel having an upper head end and a lower end, the head of said barrel having an opening therein, said opening defined by a recessed tube, the head of the barrel having a circumferential chime thereon, the lower end of the barrel having a circumferential chime formed thereon, a valve head dispensing means, means connecting said valve head to said recessed tube, a flow nozzle extending from one side of said valve head, handle means extending from the other side of said valve head, pressurized gas storage means in said handle, a flow pipe connecting with said head and extending through said opening in the barrel head to the vicinity of the bottom of the barrel, a first flow path from the gas storage means into the top of the barrel through the valve head, a second flow path from the pipe connection to the valve head out through the nozzle, valve means in said valve head whereby to regulate the flow through said second flow path and the barrel bottom recessed centrally of said barrel bottom circumferential chime except for a grooved portion in said recess to receive the end of said flow pipe, said groove extending substantially the depth of the barrel bottom chime.

2. In combination, a barrel having a filler opening in the side thereof, said filler opening positioned between a pair of circumferential beads formed in said barrel side, the head of said barrel having an opening therein, said opening defined by a recessed tube, a valve head dispensing means, means connecting said valve head to said recessed tube, a flow nozzle extending from one side of said valve head, said flow nozzle extending past the side of said barrel and said barrel side beads, said flow nozzle additionally angled downwardly after passing said barrel side, handle means extending from the other side of said valve head, said handle means extending past the other side of said barrel and said barrel side beads and angled downwardly whereby to pass below the top of said barrel, pressurized gas storage means in said handle, a flow pipe connecting with said valve head and extending through said opening in said barrel head to the vicinity of the bottom of the barrel, a first flow path from the gas storage means into the top of said barrel through the valve head, a second flow path from the pipe connection to the valve head out through the nozzle, and a recessed valve means in said valve head adapted to regulate the flow through said second flow path, said valve means in said valve head so positioned as to be actuatable by the thumb of the hand of the operator which grips the handle means connected to said valve head.

3. In combination, a barrel having an upper head end and a lower end, the head of said barrel having an open-

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ing therein, said opening defined by a recessed tube, the head of the barrel having a circumferential chime thereon surrounding said recessed tube, a valve head dispensing means, means connecting said valve head to said recessed tube, a flow nozzle extending from one side of said valve head, handle means extending from the other side of said valve head, pressurized gas storage means in said handle, a flow pipe connecting with said head and extending through said opening in the barrel head to the vicinity of the bottom of the barrel, a first flow path from the gas storage means into the top of the barrel through the valve head, a second flow path from the pipe connection to the valve head out through the nozzle, valve means in said valve head whereby to regulate the flow through said second flow path, the means connecting the valve head and recessed tube comprising a first split flange on said recessed tube end peripheral surface, a ring flange connected to said valve head circumferentially to said second flow path at its connection with said flow pipe, said ring flange having the internal and external surfaces thereof threaded, an adapter ring threadably connected to the external surface of said ring flange and having a depending inwardly extending split flange skirt removably engaged with said first split flange, a resilient sealing gasket and retainer ring positioned between the

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end of said ring flange and the end of said recessed tube, said gasket and the ring encircling said flow pipe but so spaced therefrom as to provide an annular space therebetween, a lock ring sealingly received circumferentially of said flow pipe and threaded internally of said ring flange, said lock ring having a plurality of spaced openings extending therethrough and sufficiently spaced away from the connection of said ring flange to said valve head as to provide a chamber therebetween, the upper end of said flow pipe enlarged and circumferentially received in a recess in said valve head circumferential to said second flow path, said lock ring sealingly abutting against the enlarged flow pipe portion.

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