Feb. 22, 1938. C. R. YIRAVA 2,109,259

PORTABLE DISPENSING APPARATUS

Filed April 6, 1937 2 Sheets-Sheet 1

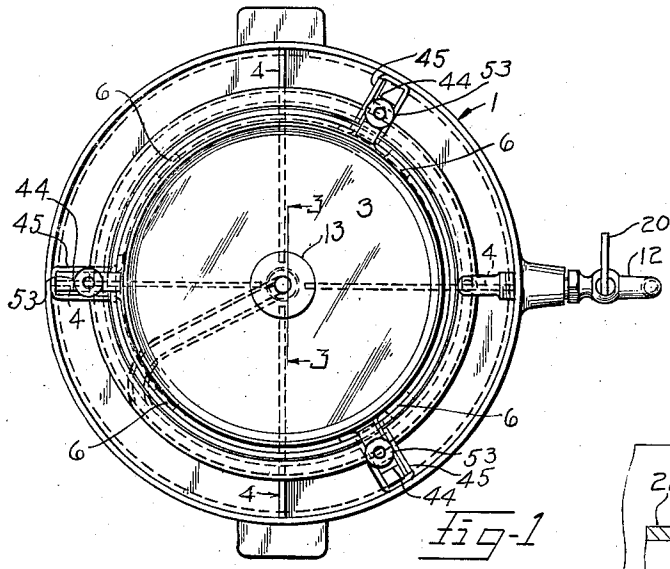


Fig-1

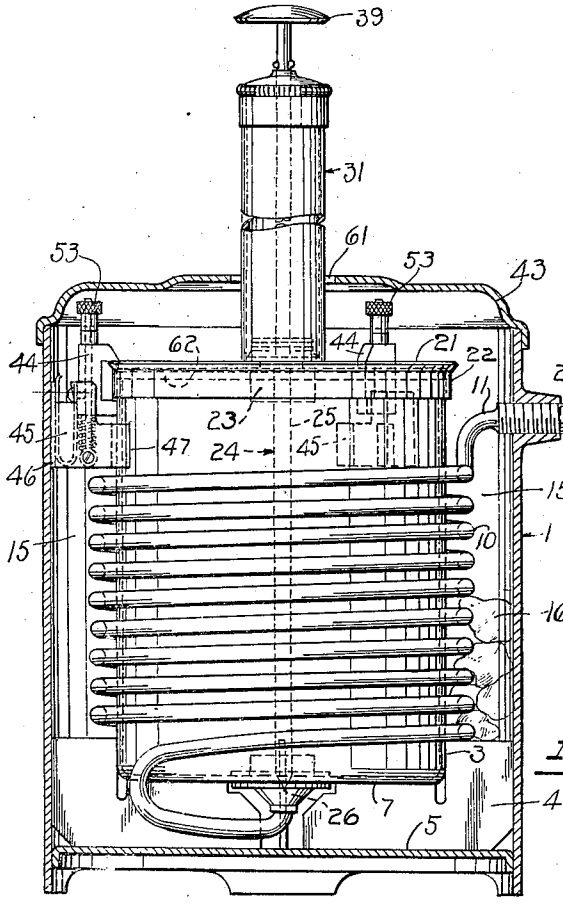
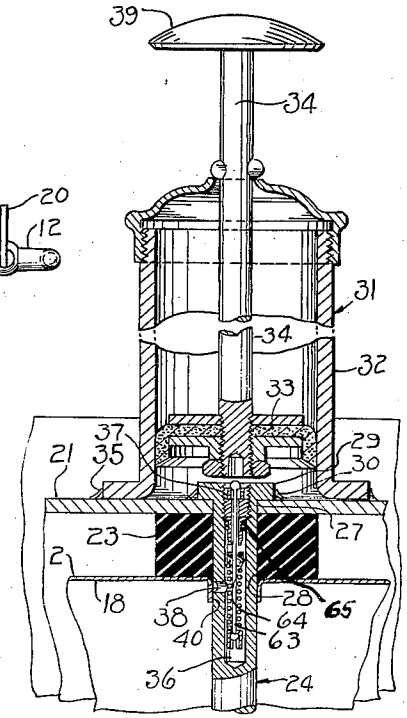


Fig-2



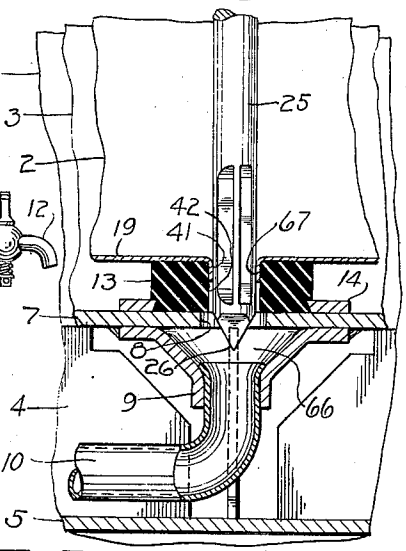


Fig-3

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Feb. 22, 1938. C. R. YIRAVA 2,109,259

PORTABLE DISPENSING APPARATUS

Filed April 6, 1937 2 Sheets-Sheet 2

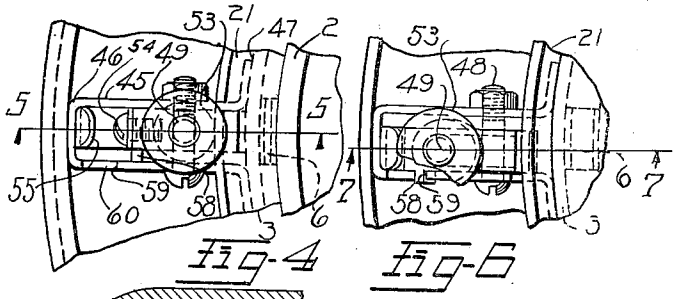

Fig-4

Fig-6

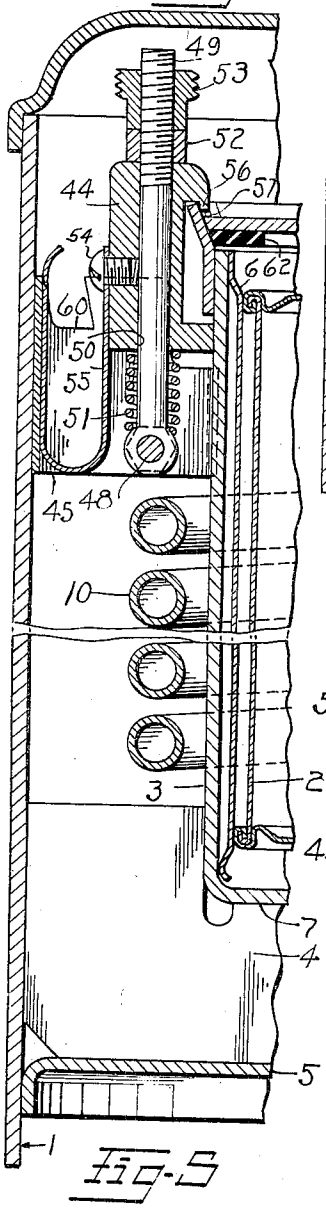

Fig-5

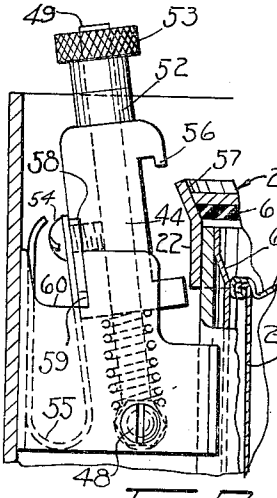

Fig-7

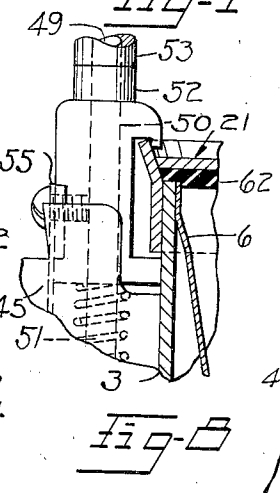

Fig-8

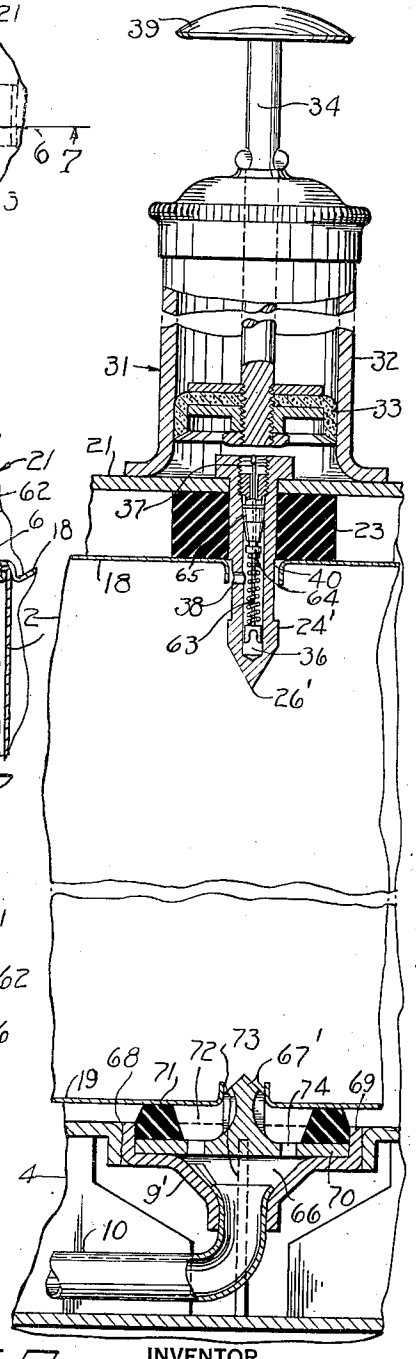

Fig-9

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UNITED STATES PATENT OFFICE

2,109,259

PORTABLE DISPENSING APPARATUS

Charles R. Yirava, Cleveland, Ohio

Application April 6, 1937, Serial No. 135,330

17 Claims. (Cl. 225—1)

My invention relates to portable dispensing apparatus for dispensing beverages and more particularly for dispensing beer.

The principal object of the invention is to provide an inexpensive simply constructed portable apparatus capable of dispensing beer or other liquids from conventional cans or containers, such as quite generally used by brewers in supplying their family trade.

Other objects and advantages of the invention will be apparent as the description is considered in connection with the accompanying drawings, in which:

Figure 1 is a plan view of the dispenser with covers removed;

Figure 2 is a sectional view of outer container showing inner container coils and clamping device;

Figure 3 is a fragmentary sectional view of the dispenser on line 3—3 of Figure 1;

Figure 4 is a plan view showing one of the latching members in clamping position and showing the beverage can in place;

Figure 5 is a fragmentary section taken on line 5—5 of Figure 4;

Figure 6 is a fragmentary plan view showing latching member in unlatched position;

Figure 7 is a fragmentary view taken on line 7—7 of Figure 6;

Figure 8 is a fragmentary view partly in section showing one of the latch members latching the cover to the inner container to seal the same preparatory to cleaning operations; and

Figure 9 is a fragmentary sectional view of a modified form of the dispenser.

Referring more particularly to the drawings 1 denotes a metallic cylindrical container or casing open at its upper end and provided with a readily removable cover 43, held in place by friction or other suitable means, not shown. The container illustrated and described herein is preferably of a size to hold a gallon can 2, but it will be understood that the container may be made to accommodate either larger or smaller cans, according to the needs of the purchaser. The can 2, is similar to the type now commonly used by brewers to supply the family trade and is made of any suitable, readily puncturable material, such as tin.

Centrally disposed within the container 1 is an inner cylindrical can holder or container 3 adapted to snugly receive the can 2, fins 4 being employed to center the can holder and support the same upon and above the bottom wall 5. Bowed vertical leaf springs 6 resiliently hold and center the can in place and compensate for slight differences in size of the cans. The bottom wall 7 of the holder 3, is formed with a central opening 8, communicating with a flared fitting 9, to the lower end of which the inlet end of a copper tube 10 is connected. This tube is coiled around the can holder 3 and at its upper or outlet end 11 is connected to a spigot 12, mounted in the upper end of the container 1. A centrally perforated rubber gasket 13, seated on the bottom wall 7 over the opening 8 and held in place by a ring 14, serves a purpose presently described. The annular space or chamber 15 between the can holder and the container 1 affords ample room for the coils of copper tubing 10 and for cracked ice or other refrigerant 16.

After the can 2 has been inserted in the holder 3, the top and bottom walls 18 and 19 of the can are punctured and the liquid contents forced under pressure up through the coiled tube 10, so that when the spigot handle 20 is turned to open position beer will automatically flow from the spigot 12. Thus a cover member 21 is formed with a downwardly extending peripheral flange 22 adapted to snugly embrace the upper end of the can holder 3. Fixed to the under side of this member 21 at the axial center thereof, is a centrally perforated gasket 23, adapted to bear against the top wall of the can. A cylindrical piercing element or tool 24, comprising a shank 25 terminating at its lower end in a sharp point 26, projects downwardly through registering openings 27 and 28 in the cover member 21 and the gasket 23 respectively. The upper end of the piercing element is enlarged to provide a supporting head portion 29 which is secured to the cover by brazing, as at 30.

Mounted on the top of the cover member 21 is an ordinary "bicycle pump" 31, comprising a cylinder 32, piston 33 and piston rod or stem 34. The lower end of the cylinder is flared to provide a substantial supporting area for the pump, and this flared portion is welded or brazed to the cover 21, as at 35. The shank 25, of the piercing element 24 is formed with an axial bore 36 at its upper end, in which a conventional tire valve 37 is mounted. A transverse passage 38 in the shank communicating with the bore 36, is provided for a purpose presently described. From the foregoing, it will be noted that the piercing element, pump and cover comprise a single unit.

In practice the point 26 of the piercing tool is placed against the axial center of the top wall 18 of the can 2 by the user and is then forced

therethrough in any suitable manner, such as by bearing down upon or striking the handle 39 with his free hand. After an opening 40 is thus formed the downward movement of the tool is continued in the same manner until the point 26 forms an opening 41 in the bottom wall of the can and proceeds down through aligned central openings 42 and 8 in gasket 13 and bottom wall 7 of can holder 3 respectively. The peripheral flange 22 of the cover member 21 snugly embraces the can holder 3, before the point 26 reaches the aperture 41, and thus serves to guide or pilot the piercing tool in an obvious manner. A cover 43, for the container 1, has a central opening 61 which permits of the cover being slipped over the pump 31.

Before the cover 43 is put in place on the container 1, the cover member 21 is clamped tightly to the can holder by means of resilient clamp members 44, preferably three in number, mounted in U-shaped brackets 45 in turn located in the annular space 15 above the coiled tubing 10, and fixed to the opposing walls of the container 1 and can holder 3, by brazing 46 and 47 respectively. Pivoted between the side walls of each bracket 45, upon a stub shaft 48 is a threaded post 49 upon which the clamp 44 is slidably mounted, the latter being provided with an opening 50 for receiving the post. At its lower end the clamp seats on an expansion spring 51 which resiliently supports the clamp and forces the same upwardly against washers 52 in turn sleeved over the upper end of the post 49 and locked to the top of clamp 44 by a lock nut 53. Secured to the outer edge of clamp 44, by means of a screw or the like 54, is a U-shaped spring 55, which bears against the wall of container 1 and normally forces the clamp inwardly or radially toward the can holder, thus causing a hook portion 56 on the upper inner edge of the clamp to engage an upwardly extending peripheral flange 57 on the cover member 21, as shown in Figure 4, when the lock nut 53 is unscrewed. However the clamp has a neutral or Figure 6 position in which the hook portion 56 thereof is held out of engagement with the flange 57. Thus the outer edge of the clamp is formed with a latch member or rib 58, which engages behind a shoulder or stop 59 formed in one of the side walls of the U-shaped bracket 45 by cutting a slot 60 in the upper edge of one of the side walls of the bracket, as best seen in Figures 4 and 5. By tightening the nuts 53 the clamps 44 are caused to tightly force the rubber gasket 23 against the top of the can 2 around the opening 40 punctured therein by the piercing tool 24. A ring like rubber gasket 62 of considerably less thickness than the gasket 23, and secured to the bottom face of the can holder cover member 21, serves a purpose to be hereinafter described.

Assuming the parts to be in the position illustrated in Figure 3; that clamp members 52 have been tightened and cover 16 has been applied to the container, the user places the contents of can 2 under pressure by manipulating the pump piston 33 in an obvious manner. Air from cylinder 32 is thus forced downwardly around the pin 63 of tire valve 37 and into the bore 36, from where it passes outwardly through the lateral passage 38 and thence downwardly through the punctured opening 40 into the can. Back pressure exerted against a piston 64, slidably mounted on the pin 63, forces the former against a valve seat 65 when pumping is discontinued, thus preventing the air from escaping back through the bore 36 into the pump cylinder.

When sufficient pressure has been built up in the can the liquid will be forced down through punctured aperture 41 in the bottom wall of the can; aperture 42 in gasket 13 and opening 8 in the bottom wall 7 of can holder 3 and thence into the space or chamber 66 formed between the flared fitting 9 and the bottom wall 7. This chamber permits of some little expansion thus insuring a free flow into the pipe 10. It also affords a chamber for catching any drippings incident to a rapid change of cans. As the liquid is dispensed from the spigot 12, the pressure will of course be correspondingly reduced, and it will therefore be necessary to continue the pumping operation from time to time in order to obtain an automatic flow whenever the handle 20 is moved to open position. Practically all liquid will be forced from the can by reason of the fact that the downwardly punched material 67 offers no obstruction to the free flow of the liquid from the can.

To clean the apparatus, after the can 2 has been emptied, the cover member 21 is removed, the can is discarded and the can holder is filled with hot or cold water or if desired a soda solution. The cover member 21 is then replaced and the clamps are moved from their neutral or latched position to clamping position and the pump piston 33 is reciprocated. The water under pressure is thus circulated through the apparatus in the same manner as the beer from can 2. During the cleaning operation it is essential that the gasket 62, which performs no function when beer is being dispensed, be tightly clamped against the top of the can holder to form a tight seal at that point, as disclosed in Figure 8. By providing means for latching the clamping members in a neutral or inoperative position it is possible to insert or remove a can from the can holder with facility and without the necessity of manually holding the clamping members during these operations.

In Figure 9, a modified form of the invention is disclosed wherein a piercing element or member 24' is employed which is identical with the member 24 except that the former is shorter than the latter and adapted only for puncturing the top wall of the can 2. With this modified form of the apparatus the bottom wall of the can is punctured when the can is forced into the can holder 3, against a fluted upstanding piercing element 67 seated upon a fitting 9' similar in construction to the fitting 9 of the preferred form. The bottom wall 7 of the can holder in this modification is formed with a flanged opening 68 in which upturned flanges 69 on the base 70 of element 67' snugly seat. A ring shaped gasket 71 seats on the base 70 and provides a chamber 72 into which the beer flows through flutes 73 and thence out through openings 74 to and through chamber 66 to delivery pipe 10.

While the method of puncturing the top wall of the can and placing the contents of the latter under pressure with the Figure 9 modification, are substantially the same as that described for the preferred form of my invention, the following brief description of the former is given: After the can has been forcibly inserted into the can holder and against piercing tool 67, the piercing point 26' of the tool 24' is placed against the top of the can and the cover member 21 is forced on the can holder in the manner previously described. The pump is now operated to place the

contents of the can under pressure in the manner previously described and air is pumped through bore **37**, and out through transverse passage **38** to the top of the beer can.

What I claim is:

1. An apparatus for dispensing liquid from sealed cans comprising inner and outer spaced receptacles, said inner receptacle adapted to snugly hold the can, means for puncturing the top and bottom walls of said can, outlet means for the liquid in the can communicating with said can holder, and means for placing the liquid in said can under air pressure to force said liquid into and through said outlet means.

2. An apparatus for dispensing liquid from sealed cans comprising a holder for the sealed can, a casing enclosing said can holder, liquid outlet means communicating with said can holder, means for puncturing the top and bottom walls of said sealed can, and means for placing the liquid in said can under pressure to force the liquid therefrom into and through said outlet means.

3. An apparatus for dispensing liquid from sealed cans comprising inner and outer spaced casings, said inner casing providing a holder for the sealed can, means for puncturing the top and bottom wall of the can, a coiled outlet pipe in the space between said casings and having an inlet end in communication with the interior of said holder, and means for placing the liquid in said can under pressure to force the liquid into and through said pipe.

4. An apparatus for dispensing liquid from sealed cans comprising an outer container and an inner container, said inner container of a size and shape to snugly hold a sealed can of liquid, a cover for said inner container, means on said cover for puncturing the top and bottom walls of the sealed can, liquid outlet means communicating with the interior of the can after the can has been punctured, and means on said cover for placing the contents of the can under pressure to cause said contents to flow into and through said outlet means.

5. An apparatus for dispensing liquid from sealed cans comprising inner and outer spaced casings, said inner casing adapted to snugly hold a sealed can, means for forming an air inlet opening and a liquid outlet opening respectively in the top and bottom walls of the sealed can, a coiled delivery pipe in the space between said casings and in communication with said inner casing and means for placing the liquid in said can under air pressure to force said liquid into said delivery pipe.

6. An apparatus for dispensing liquid from sealed cans comprising inner and outer spaced casings, said inner casing adapted to snugly hold a sealed can of liquid, means for simultaneously forming a puncture in the top and bottom wall of the sealed can, an outlet pipe, and means for placing the liquid contents of the can under pressure to force said liquid into said pipe.

7. An apparatus for dispensing liquid from a sealed can comprising inner and outer spaced casings, said inner casing adapted to snugly hold a sealed can from which liquid is to be dispensed, a cover for said inner casing, a piercing tool having a shank pointed at one end and of greater length than the heighth of the can, the other end of said shank being connected to said cover and the lower end of said shank being pointed whereby the forcible mounting of said cover on said inner casing causes both the top and bottom walls of said can to be punctured, an outlet pipe for the liquid in said can, and means for pumping air into said can to force said liquid from the can into said outlet pipe.

8. An apparatus for dispensing liquid from a sealed can comprising inner and outer spaced casings, said inner casing adapted to snugly hold a sealed can from which liquid is to be dispensed, a cover for said inner casing, a piercing tool having a shank pointed at one end and of greater length than the heighth of the can, the other end of said shank being connected to said cover and the lower end of said shank being pointed whereby the forcible mounting of said cover on said inner casing causes both the top and bottom walls of said can to be punctured, an outlet pipe for the liquid in said can, means for pumping air into said can to force said liquid from the can into said outlet pipe and said last mentioned means being mounted on said cover.

9. An apparatus for dispensing liquid from sealed cans comprising inner and outer casings, said inner casing adapted to receive a sealed can of liquid, a cover member for said inner casing, a piercing member depending from said cover for puncturing the top and bottom walls of said can when said cover is applied to said inner casing, the upper end of said piercing member having a chamber therein and an outlet passage from said chamber, a check valve in said chamber and a pump on said cover member for pumping air down through said chamber and out through said passage into the top of the can.

10. An apparatus for dispensing liquid from a sealed can comprising inner and outer casings, said inner casing adapted to receive a sealed can of liquid, a cover member for said inner casing, a piercing member depending from said cover for puncturing the top and bottom walls of said can when said cover is applied to said inner casing, the upper end of said piercing member having a chamber therein and an outlet passage from said chamber, a check valve in said chamber and a pump on said cover member for pumping air down through said chamber and out through said passage into the top of the can, a spigot on said outer casing, and means for placing the bottom of said can in communication with said spigot.

11. An apparatus as set forth in claim 9 in which the piercing member extends snugly through an apertured gasket and in which gasket the top of the can engages.

12. An apparatus as set forth in claim 9 in which the piercing element is pointed and fluted at its lower end.

13. An apparatus for dispensing liquid from sealed cans as claimed in claim 9, in which the bottom wall of the inner casing is centrally apertured and in which a gasket having an aperture aligned with the said central aperture is seated on the bottom wall of the inner casing for receiving the lower end of the piercing element.

14. An apparatus as set forth in claim 3 in which an expansion chamber is provided between the inlet end of the outlet pipe and the bottom wall of the inner casing.

15. An apparatus as set forth in claim 3 in which a flared fitting secured to the bottom wall of the inner casing provides an expansion chamber between the inlet end of the outlet pipe and the bottom wall of the inner casing.

16. An apparatus for dispensing liquid from sealed cans comprising inner and outer spaced receptacles, said inner receptacle adapted to snugly hold the can, a cover member for the inner

receptacle, means on the cover for puncturing the top and bottom walls of said can, means for forcing liquid from the can after the can has been punctured, clamping means provided with means for engaging the peripheral edge of said cover, for clamping the said cover tightly on said inner receptacle, and means for latching said clamping means in a position out of engagement with said cover.

17. An apparatus for dispensing liquids from sealed cans comprising a holder for the sealed can, a cover for said holder, a casing enclosing said can holder, means on said cover for puncturing the top and bottom walls of the sealed can, liquid outlet means communicating with said can holder, means for forcing liquid from said can into said outlet means, and a pivoted spring pressed clamp within said casing, said clamp having a hooked portion for engagement with the said cover, and means for latching the clamp in a position disengaged from said cover.

CHARLES R. YIRAVA.