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DISPENSING OF CARBONATED BEVERAGES

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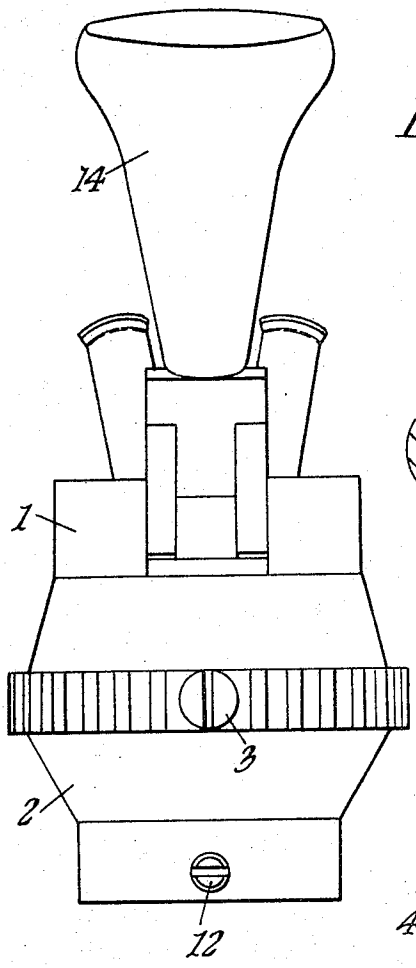


Fig. 1.

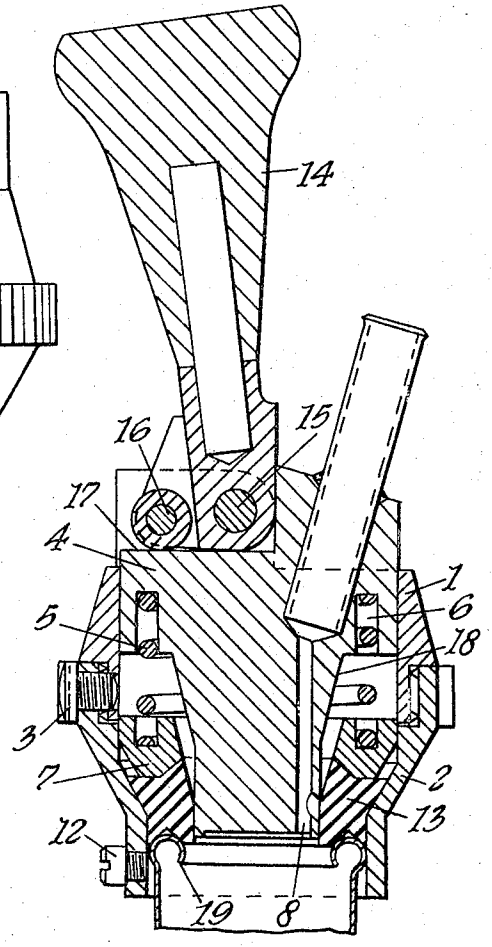


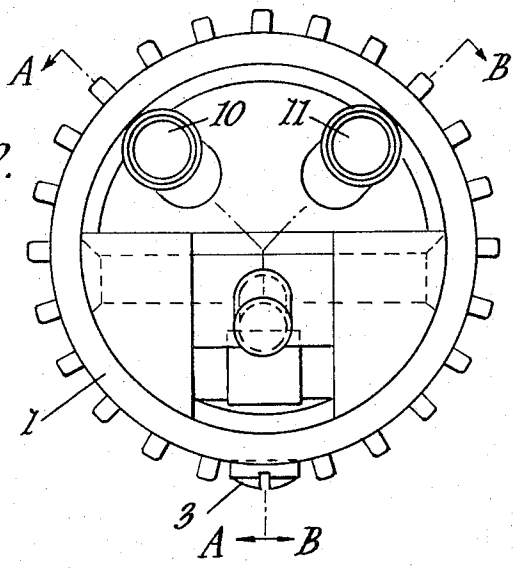
Fig. 3.

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Fig. 2.



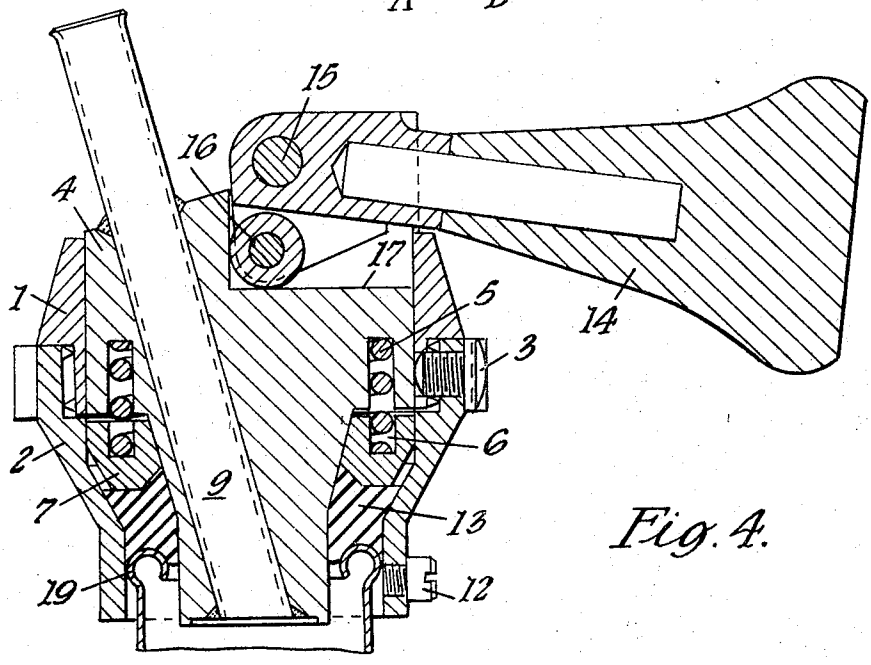


Fig. 4.

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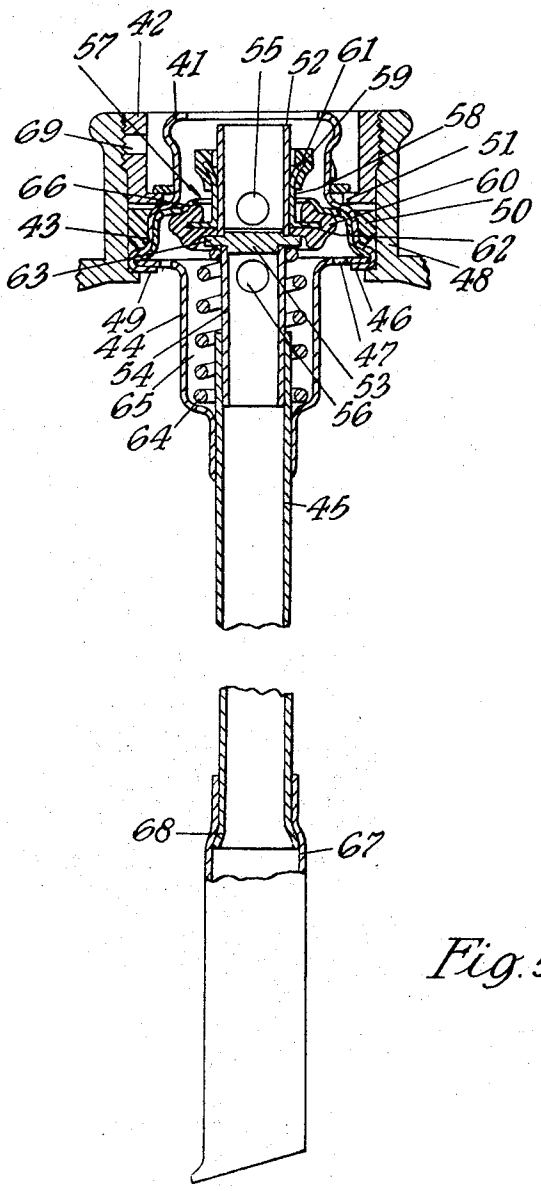


Fig. 5.

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DISPENSING OF CARBONATED BEVERAGES

Eric Clifford Turner, Weybridge, Surrey, England, assignor to Watney Combe Reid & Co., Limited, London, England, a British company

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1 Claim. (Cl. 137—212)

This invention relates to the dispensing of carbonated beverages and in particular to devices, known as extractors, for coupling to the outlet valve arrangement of a pressurized container for a carbonated beverage, for withdrawal of the beverage therefrom.

An arrangement is already known in which the neck of a keg or the like for a carbonated beverage such as beer is furnished with an inlet and outlet valve having separate valve controlled passageways for gas and liquid. When the filled container is to be used, that is to say when the beer or other beverage is to be withdrawn, an "extractor" is inserted into engagement with the valved container neck, and the insertion of this extractor opens the respective valved passages by the resulting axial displacement.

Experience has shown that in some cases the simultaneous engagement of the extractor with the container neck, and the opening of the valved passageways, is inconvenient when an instant-fitting extractor is employed. The thrust necessary for a satisfactory engagement of the extractor is, of course, increased substantially by the additional step of concomitantly opening the valved passageways against respective return springs. The expression "instant-fitting" means an arrangement whereby the extractor is engaged with the container neck by a momentary action, as opposed to, e.g., a progressive screwing action. A bayonet fitting is a typical example. It is characteristic of instant fittings that the downward movement is achieved by direct axial thrust.

The invention consists in an extractor for a container having valved passageways for gas and liquid housed within a neck portion thereof, and operated by axial displacement, comprising an outer casing furnished with instant-fitting means for engaging within the container neck, an axially slidable valve engaging member incorporating gas and liquid passageways for sealing with the respective gas and liquid passageways of a pre-existing valve within the container neck, and means for displacing the valve body inwardly into the required engagement with the container valve, after the outer casing has been engaged within the container neck.

Preferably, the means for displacing the valve body comprises a lever pivoted to the outer casing for swinging about an axis at right angles to the casing axis, and carrying a roller or smooth engagement surface for pressing the valve body down when the lever is so swung.

The casing will normally carry a suitable sealing ring into engagement with which the valve body is pressed concomitantly upon being pressed into engagement with the container valve. The casing will normally also carry a suitable return spring for the valve body. The casing may conveniently be formed in axially separable parts to facilitate assembly.

The invention will be described further with reference to the accompanying drawings, of which:

FIGURE 1 is a side view of an extractor;

FIGURE 2 is a plan view corresponding to FIGURE 1 but with the operating handle moved for better clarity;

FIGURE 3 is a sectional view on the line A—A of FIGURE 2, showing the handle in the disengaged position;

FIGURE 4 is a sectional view on the line B—B of FIGURE 2, showing the handle in the engaged or operating position; and

FIGURE 5 is a sectional view of the neck portion of a beer keg furnished with a gas- and liquid-valve for engagement by an extractor as shown in FIGURE 1.

The extractor comprises an outer casing made up of interfitting parts **1** and **2**, located together by the set screw **3**. An axially slidable valve body **4** is housed within the casing, and is urged into an uppermost position by a return spring **5** received between a slot **6** in the valve body and an abutment ring **7** carried in the lower part of the casing. The valve body **4** incorporates respective gas and liquid passageways **8** and **9** leading to respective outlets **10** and **11** adapted to make engagement with the corresponding passageways in a container valve as will later be described, and engagement within the container neck is effected bayonet-wise by the studs **12**.

Carried below the abutment ring **7** within the casing part **2** is a sealing ring **13**. A handle **14**, pivoted at **15** to the casing part **1**, carries a roller **16** making engagement with a flat **17** adjacent the upper end of the valve body **4**. With the handle positioned as shown in FIGURE 3, the valve body is in an uppermost position. When the handle is swung down as shown in FIGURE 4, the roller **16** presses the valve body down into an engaged or operative position, while at the same time tapered side walls **18** of the valve body are pressed into sealing engagement with the sealing ring **13**.

In FIGURE 5 there is shown a generally longitudinal sectional view of a closure suitable for use with the extractor of this invention. The closure is of built-up construction and so designed that it may be largely made of, for instance, spun steel. The closure comprises an inner neck portion **41** which may, if desired, be adapted by means of an annular protuberance to be fitted with a "Crown-Cork" (registered trademark), the inner neck portion **41** carrying an outer neck portion **42** and an extension **43**; this extension **43** carries an enlarged upper end **44** of a withdrawal pipe **45**, and the end **44** is flanged at **46** and perforated at **47**. The outer neck portion **42** is externally threaded, and is shown screwed into neck **48** of a metal beer cask, the flange **46** bearing against a shoulder **49** in the cask neck; a sealing ring **50** makes a seal between the closure and the cask, and is retained in position by the flange **46** and a shoulder **51** formed by the outer neck portion **42**. A valve body **52** is in the shape of a generally cylindrical shell with a lower end closure **53**, and is furnished with a cylindrical shell-shaped extension **54**, the side-wall of the valve body **52** being perforated as at **55** and the side-wall of the extension **54** being perforated as at **56**; this valve body **52** is slidably mounted in the end of the withdrawal tube **45** by means of the extension **54**, and the valve body **52** has slidably mounted thereon a sleeve-shaped seal, generally indicated by **57**, which comprises a sleeve **58**, an upper sealing ring **59** and a lower sealing ring **60**, the upper and lower sealing rings **59** and **60** being retained by flanges **61** and **62**, respectively. A flange **63** on the valve body **52** serves as an abutment for a spring **64** (housed in chamber **65** defined by the end **44** of the withdrawal pipe and the extension **54** of the valve body), and also serves to make a sealing fit between the valve body **52** and the lower sealing ring **60** when the valve body **52** is held in its uppermost position by the action of the spring **64**. In this uppermost position of the valve body **52**, the action of the spring **64** also serves to make a sealing fit between the lower sealing ring **60** and a flange **66** provided on the inner neck portion **41**. In this position it can be seen that while the chamber **65** is in communication with the withdrawal tube **45** by way of the perforations **56**, the perforations **55** leading into the valve body **52** are sealed off from the chamber **65**. The lower end if the withdrawal tube **45** is fitted with a sliding extension piece **67** formed with an angled foot for the admission of liquid, and a flange **68**

is formed at the extremity of the withdrawal tube **45** to retain the extension piece **67**.

To withdraw liquid from a cask to which this closure member is fitted, the extractor is engaged bayonet-fashion by means of the studs **12**, which fit in cut-aways, one of which is shown at **69**, provided on the outer neck portion of the closure.

By this action, the sealing ring **13** is pressed into sealing engagement with the upper surface of inner neck member **19** of the container valve assembly. The effort required to effect this is not aggravated by the effort required to effect an operative engagement with the respective container valve, as this is subsequentially achieved by swinging the handle **14**.

It will be appreciated that various modifications may be made to the device as illustrated without departing from the scope of the invention. Thus, although it is preferable to fit the sealing ring **13** to the outer body **2** as shown, it could instead be carried by the inner body **4**. To this end, the return spring **5** may be fixed at its upper end to the valve body **4** and at its lower end to the sealing ring **13** either directly or through the abutment ring **7** if the latter is retained.

I claim:

An extractor for withdrawing liquids from a pressurized container, said container having a neck portion, and valved passageways for gas and liquid located within said neck portion and operable by axial displacement thereof, said extractor comprising an outer casing, complemental means on said casing and the inside of said neck portion cooperable to instantly engage said casing within said neck portion, an axially slidable valve engaging member within said casing, said valve engaging member being provided with gas and liquid passageways for sealing with the gas and liquid passageways located within the neck portion, means within the casing cooperable with said valve engaging member for biasing said valve engaging member to a position where the gas and liquid passageways therein are in non-sealing relationship respecting the said gas and liquid passageways located in the neck portion, a lever pivoted to said outer casing for swinging movement about an axis at right angles to the axis of said outer casing, a smooth engagement surface carried by said lever for pressing said valve engaging member downwardly in the casing for placing the gas and liquid passageways therein in sealing relation with the gas and liquid passageways located in the neck portion and a seal ring biased to seal between the casing and the valve engaging member through which the valve engaging member is arranged to slide, said seal ring being arranged to seal the neck portion of the container.

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ALAN COHAN, *Primary Examiner.*