United States Patent

[11] 3,596,809

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[54] KEG-TAPPING DEVICE
2 Claims, 7 Drawing Figs.

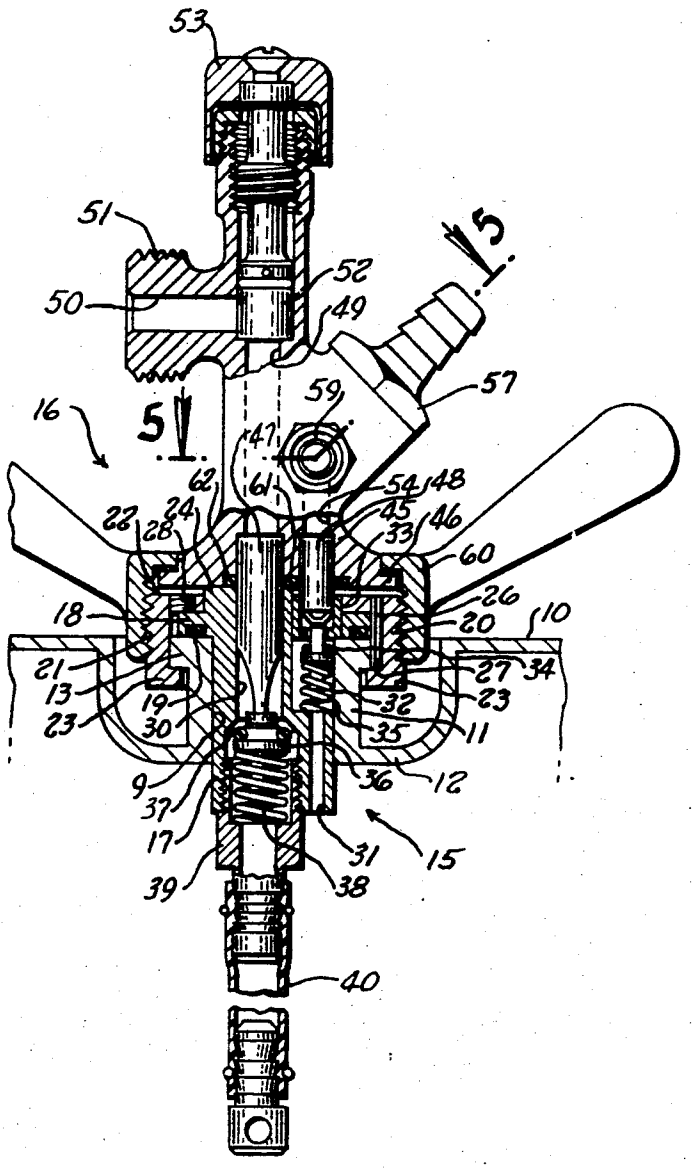
[52] U.S. Cl. 222/400.7, 222/399, 137/212
[51] Int. Cl. B65d 83/14, B67d 5/54
[50] Field of Search 222/400.7, 481, 464; 137/322, 324, 212

[56] References Cited
UNITED STATES PATENTS

3,438,553	4/1969	Johnston	222/400.7
3,228,413	1/1966	Stevens, Jr.	222/400.7 X
3,065,885	11/1962	Chatten	137/322 X

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ABSTRACT: A beer-tapping system in which the connection of separable keg and tapping units automatically opens normally closed beer and gas valves in the keg unit, the keg unit being installed from the exterior in the tapping hole of the keg and remaining a part of the keg; and the valves being displaced from their seated positions by hollow probes that depend from the bottom of the tapping unit. The gas valve is assembled with the body of the keg unit through a hole in the side of the body which is covered by the contiguous surface of the tapping hole.



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Fig. 5.

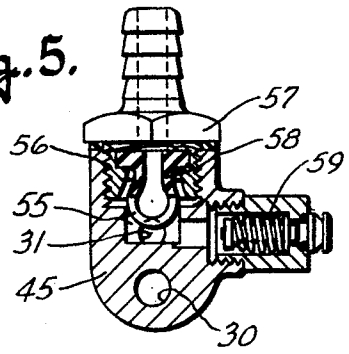


Fig. 1.

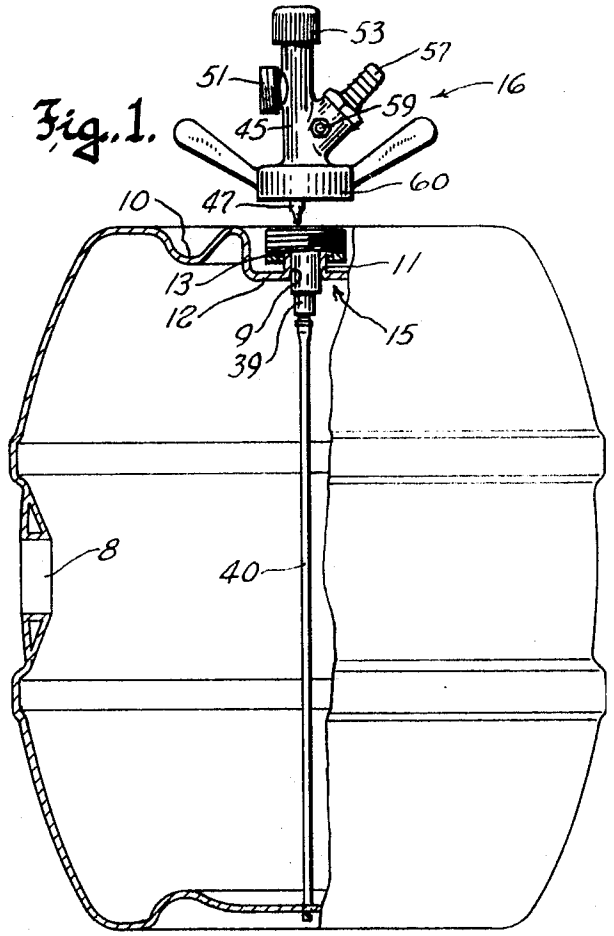


Fig. 2.

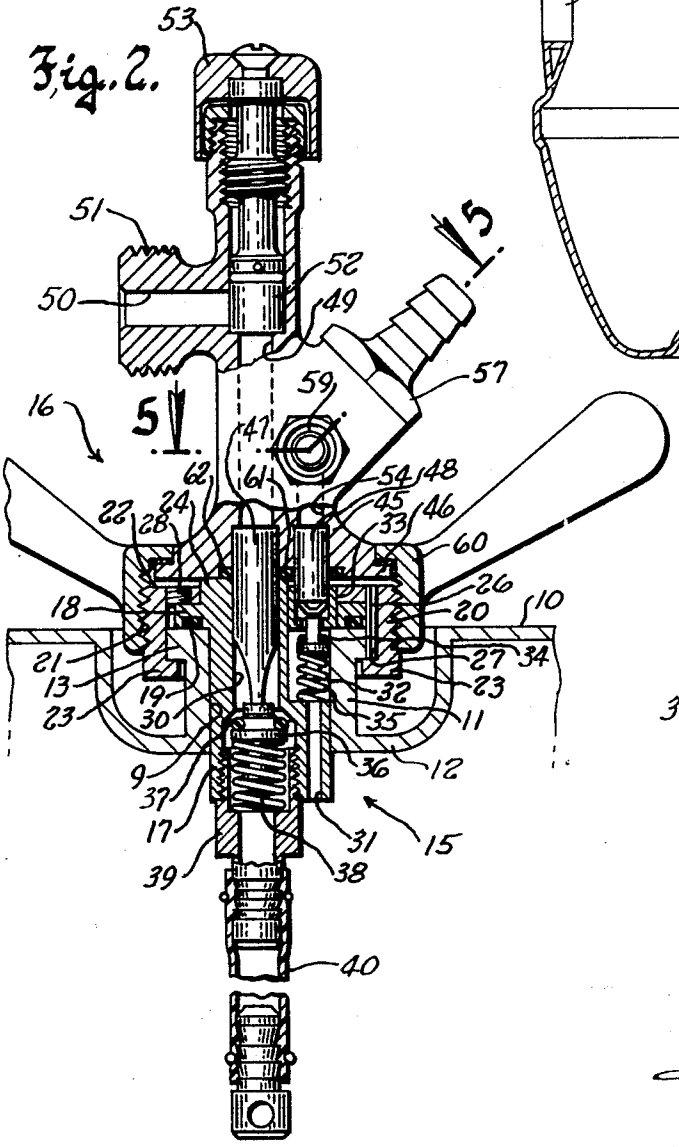
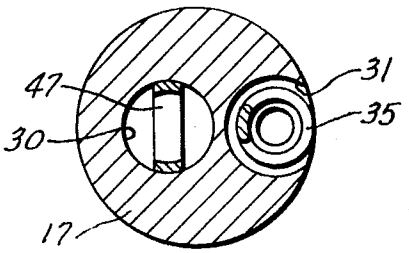


Fig. 6.



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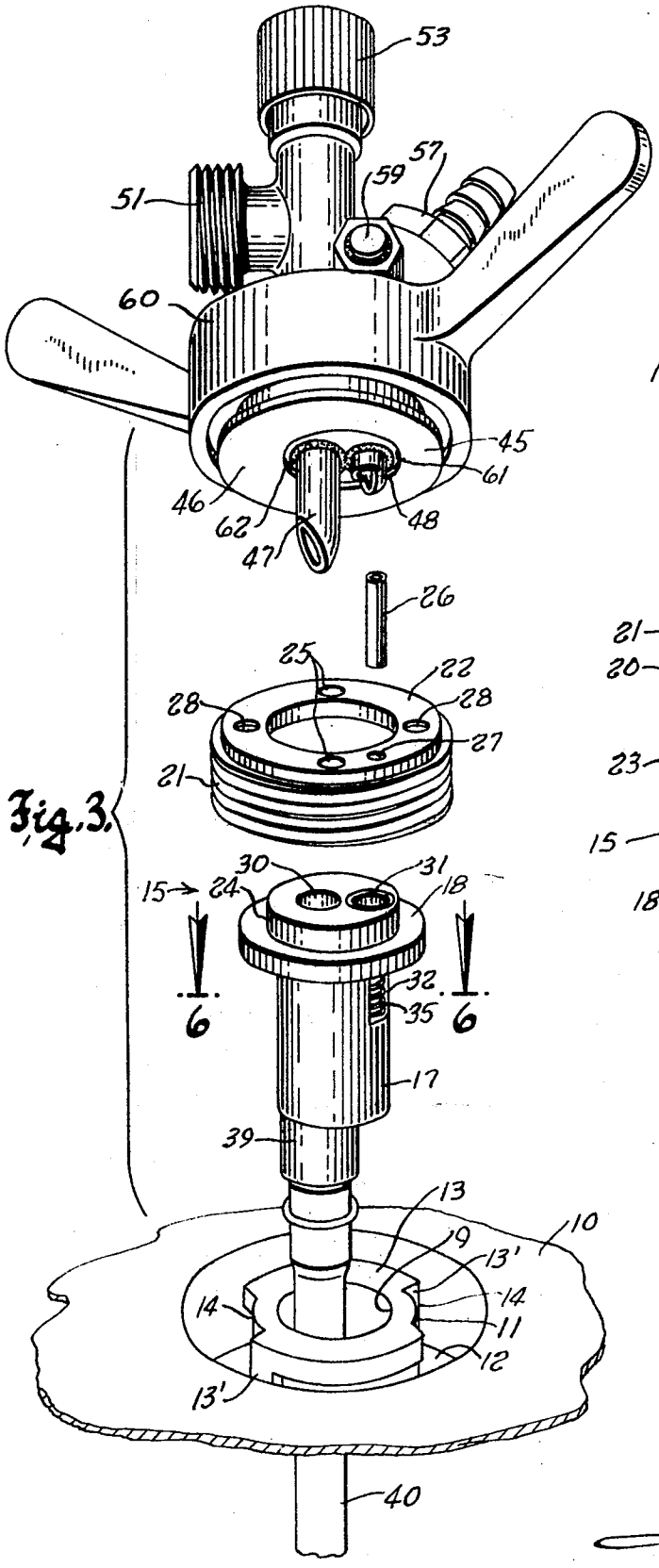
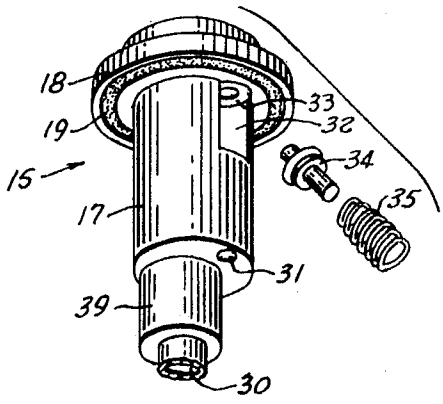


Fig. 3.

Fig. 7.



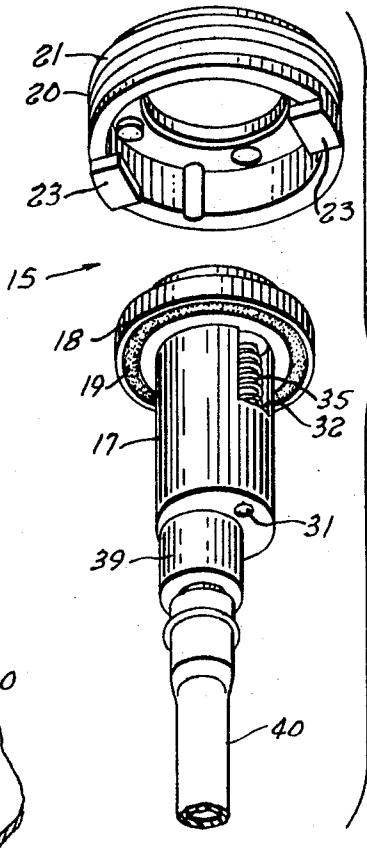


Fig. 4.

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KEG-TAPPING DEVICE

This invention relates to keg-tapping devices and has as its purpose to provide an improved tapping system for beer kegs having a tapping hole designed for the reception and attachment of the conventional Peerless tap.

On such kegs, the tapping hole passes through an upstanding neck on one end wall of the keg, this wall being uppermost when the keg is in position to be tapped. At its top the neck is encircled by a ledge which is interrupted at diametrically opposite sides of the neck to permit inwardly directed lugs on the body of the tap to be engaged under the ledge in the attachment of the tap to the keg. With the tap thus attached to the keg, it was necessary in the old Peerless system to drive a tap rod into the keg. This of course necessitated dislodging the closure plug from the tapping hole, an operation which was not easy and always subject to the danger of having the tap rod blown from the keg before it could be secured.

The Perlick U.S. Pat. No. 3,077,202 can be referred to for a more detailed description of the hazards involved in tapping a keg of beer in the old Peerless manner.

However, despite the difficulties and danger inherent in the use of the Peerless tapping system, at least half the draft beer sold in the United States is still delivered in kegs designed for this system, and until quite recently there has been no tapping device available for use on these kegs other than the conventional Peerless tap.

Among the few tapping systems recently developed for use with kegs equipped with Peerless-type tapping holes, that of the Stevens U.S. Pat. No. 3,228,413 dated Jan. 11, 1966, is perhaps the most popular, but even the Stevens tap has drawbacks which this invention overcomes. For instance, with this invention the keg unit, which is that part of the complete tapping device that is attached to the keg, is easily assembled with the keg from the outside thereof, not through the filling hole in the side of the keg as in the Stevens system.

There are other advantages in the tapping system of this invention which will appear as the description proceeds.

With these observations and objects in mind, the manner in which the invention achieves its purpose will be appreciated from the following description and the accompanying drawings. This disclosure is intended merely to exemplify the invention. The invention is not limited to the particular structure disclosed, and changes can be made therein which lie within the scope of the appended claims without departing from the invention.

The drawings illustrate one complete example of the physical embodiment of the invention constructed according to the best mode so far devised for the practical application of the principles thereof, and in which:

FIG. 1 is a side elevational view of a typical beer keg equipped with the Peerless-type tapping hole, showing the keg unit of the tap of this invention fixed therein and the tapping unit detached therefrom but in "tapping" position, part of the keg being broken away and in section;

FIG. 2 is a longitudinal sectional view through both units of the tap showing the same assembled;

FIG. 3 is an exploded perspective view of the two units of the tap and enough of the keg to show its tapping hole;

FIG. 4 is a perspective view of the keg unit with the major parts thereof disassembled;

FIG. 5 is a detail sectional view through FIG. 2 on the plane of the line 5–5;

FIG. 6 is a cross-sectional view through the body of the keg unit taken on the plane of the line 6–6 in FIG. 3; and

FIG. 7 is a perspective view of a portion of the body of the keg unit and one of its valves in position for assembly with the body.

Referring to the drawings, a typical beer keg of the type with which this invention is especially concerned, is illustrated in FIG. 1. As is customary this keg has a filling opening 8 in its sidewall through which the keg is filled at the brewery and also

cleaned, and a tapping hole 9 in one end wall 10. Since the keg is designed to be used with the conventional Peerless tapping system its tapping hole passes through a neck 11 which rises from the bottom 12 of a depression in the end wall 10. At its upper end the neck has a ledge 13 which is interrupted at diametrically opposite sides of the neck to provide access ports 14 to the underside of the ledge. The neck also has a pair of diametrically opposite longitudinal ribs 13' on its exterior to define abutments in line with one side of each of the access ports.

The tapping device of this invention comprises a keg unit designated generally by the numeral 15 and a tapping unit generally designated 16. The keg unit is designed to be secured in the tapping hole of the keg and remains in place on the keg until replacement is necessary for one reason or another.

The tapping unit is connectable with the keg unit, and when the two units are joined, as they are in FIG. 2, the liquid contents of the keg (beer) may flow to a dispensing faucet, not shown, with which the tapping unit is connected, under gas pressure maintained in the keg from a suitable source thereof also connected with the tapping unit.

The keg unit 15 comprises a cylindrical body 17 of a size to snugly though freely fit in the cylindrical tapping hole 9. Near one end of the body there is an integral encircling flange 18 which seats upon the top of the neck 11 when the keg unit is in place on the keg. The underside of the flange 18 has an annular groove with an O-ring 19 therein to provide a gastight seal between the body 17 and the top of the neck upon securement of the body to the keg.

Securement of the keg unit to the keg is effected by a collar 20 which encircles the upper end portion of the body, is connected to the neck 11 on the keg and bears upon the top of the flange 18 of the body. As best shown in FIGS. 3 and 4 the collar 20 has an externally threaded cylindrical sidewall 21, a flat annular end wall 22, and inwardly projecting diametrically opposite lugs 23 on the lower edge of its sidewall. The lugs are of a size to pass freely through the access ports 14 so that with the collar properly assembled with the body of the keg unit, the body can be inserted into the tapping hole in the keg and the lugs 23 engaged under the ledge 13 by rotating the collar. To enable the collar and the body 17 to be assembled, the diameter of the flange 18 is considerably smaller than that of the inside of the collar, and small enough to allow the flange to pass one of the lugs 23 while engaged behind the other lug. However, the flange 18 is larger than the hole in the annular flat end wall of the collar so that with the collar attached to the neck, the body is restrained against upward displacement. Coaxiality between the collar and the body is established by the snug reception of the upper end portion 24 of the body in the hole in the end wall of the collar.

To facilitate rotating the collar as needed to bring its lugs 23 under the ledge 13, the end wall of the collar has a pair of spanner wrench receiving holes 25. Rotation of the collar in the assembling direction is limited by the collision of the lugs 24 with the abutments provided by the ribs 13', and retrograde rotation is prevented by driving a roll pin 26 through a hole 27 in the end wall of the collar, the hole 27 being so located with respect to the lugs 23 that the depending lower end of the roll pin is in position to collide with the side of the adjacent access port before the collar turns far enough to bring its lugs in alignment with the access ports.

The O-ring 19 is clamped between the flange 18 and the top of the neck 11 by tightening a pair of setscrews 28 which are threaded in the end wall of the collar and bear against the top of the flange 18. The setscrews are in line with the lugs 23 to assure that the clamping forces produced by means of the screws will be parallel with the axis of the body 17; and when the setscrews are tightened, their heads lie below the flat top surface of the collar and it in turn lies below the level of the top face of the upper body portion 24.

Inside the body 17 of the keg unit there are two valved passages, one for liquid and the other for gas. Both of these

passages are formed by straight parallel bores that extend longitudinally through the body and neither of which is concentric with the axis of the cylindrical body. The bore **30** which provides the liquid passage has a smooth upper section and a larger threaded lower section; while the other bore **31** which provides the gas passage, has a small lower section and a larger upper section, both of which are smooth surfaced. Since the upper end portion **24** of the body has a larger diameter than that part thereof below the flange **18**, the large diameter section of the bore **31** lies wholly within the circumference of the upper end of the body, but breaks through the side of the body below the flange **18** to form a rectangular "window" or entry opening **32**.

A sleeve **33** is press-fitted into the upper end of the bore **31** with its upper end flush with the top face of the body **17** and its lower end flush with the underside of the flange **18**. This sleeve forms a seat for gas valve **34** of the keg unit. The valve **34** consists of a shouldered pin with an O-ring fixed in its upper end, and a compression spring **35** confined between the valve and the bottom of the large diameter upper section of the bore **31** yieldingly keeps the valve seated.

The lower large diameter section of the bore **30** has the liquid valve **36** of the keg unit received therein. This valve also consists of a pin with an O-ring thereon to engage a valve seat **37** formed at the junction of the upper an lower sections of the bore **30**, under the force of a compression spring **38**. This spring is confined between the bottom of the valve and a shoulder in a nipple **39** that is threaded into the lower end of the bore **30** and has a drawoff tube **40** attached thereto, the tube being long enough to reach to the bottom of the keg. Accordingly, upon unseating of the valve **36** gas pressure in the keg forces the liquid contents of the keg through the tube and out of the bore **30** regardless of the level of the liquid in the keg.

The tapping unit consists of a body **45** with a circular base **46** of a diameter substantially equal to that of the top of the collar **20** by which the keg unit is secured to the keg. Long and short hollow probes **47** and **48**, respectively, project down from the base to enter the bores **30** and **31** and unseat the valve therein upon attachment of the tapping unit to the keg unit. The long probe **47** is fixed in the bottom end portion of a bore **49** which extends through the body to the top thereof and communicates with a lateral bore **50** which passes through an externally threaded lateral projection **51** on the body to which a "beer line" or hose leading from a dispensing faucet may be connected.

A shutoff valve **52** mounted on the bore **49** and operated by a handle **53** on the upper end of the body, controls communication between the bores **49** and **50**. This valve is closed during attachment of the tapping unit to the keg unit.

The short probe **48** is secured in the bottom end portion of a bore **54** which forms part of a gas passage **55** that opens through the side of the body **45** with an internally threaded mouth **56**. This mouth receives a nipple **57** to which a hose that leads from a source of pressurized gas may be attached. As is customary, the nipple contains a rubber check valve **58** which, in the operative condition of the tapping device, is closed as long as the gas pressure in the keg is above a predetermined level, but opens to admit pressurized gas whenever the pressure in the keg drops below said level.

Excess pressure in the keg may be vented through a manually operable relief valve **59** mounted in one wall of the gas passage **55**.

A wingnut **60** freely rotatably encircling the base **46** and bearing upon its upper peripheral edge portion, is screwed onto the collar **20** to clamp the tapping unit to the keg unit.

The underside of the circular base **46** is formed with a depression **61** of a size to encompass the probes, and seated in this depression is a resilient gasket **62**, the probes passing through and fitting closely in holes in the gasket. The thickness of the gasket is somewhat greater than the depth of the depression, so that when the tapping unit is set on the keg unit and secured thereto by screwing the wingnut onto the collar **20**, the gasket is clamped between the two units and seals the connection of the probes with the bores into which they project.

Although not necessary for leakage prevention if the keg unit is correctly installed on a keg, it has been found desirable to apply a coat of anaerobic adhesive to the surface of the tapping hole before the keg unit is inserted. Not only does this precaution assure against any possibility of leakage, but it also closes the tiny crevice that may otherwise exist between the rounded inner edge of the tapping hole and the contiguous portion of the cylindrical body of the keg unit. Anaerobic adhesives are now quite widely used for many purposes. They are single-component liquids which cure only in the absence of air. One such adhesive is presently being marketed by the Loctite Corporation of Newington, Conn.

A feature of the invention resides in the fact that the gas valve **34** and its spring **35** are assembled with the body of the keg unit through the window **32** as shown in FIG. 7; and that the outer surfaces of the coils of the spring are closely contiguous to the wall of the tapping hole when the keg unit is in place therein. This enables both valves to be located in the body despite its relatively small diameter necessitated by the size of the tapping hole and the insertion of the keg unit into the tapping hole from the exterior of the keg.

From the foregoing description taken with the accompanying drawings, it will be apparent to those skilled in this art that this invention provides the brewing industry with a sanitary, highly practicable and convenient tapping system for use with kegs that have Peerless-type tapping holes.

I claim:

1. A closure for the tapping hole of a beer keg of the Peerless type, comprising:

A. a cylindrical body of a size to snugly fit the tapping hole, said body having inner and outer ends and a circumferential flange larger in diameter than the body at the outer end of the body to limit insertion thereof into the tapping hole;

B. a pair of side-by-side straight bores extending longitudinally through the body,

one of said bores providing a passage for liquid and the other for gas;

C. the bore which provides the gas passage having an inner small diameter section and an outer large diameter section, each opening to its respective end of the body, and the junction therebetween being spaced inwardly of said flange;

the large diameter section breaking through the side of the cylindrical body inwardly of its flange to provide a lateral entrance into the bore;

D. an inwardly facing valve seat in the large diameter section of said bore,

said valve seat being spaced outwardly from the junction of the two sections of the bore;

E. a spring-pressed check valve in the large diameter section of said bore with its spring confined between the junction of the two sections of the bore and yieldingly holding the check valve on said valve seat,

said check valve and its spring being of a size to pass through said lateral entrance so as to enable assembly thereof with the body; and

F. an outwardly biased check valve in the bore which provides the liquid passage.

2. The keg closure of claim 1 wherein said valve seat is a sleeve separate from the body but secured in the outer end portion of said large diameter bore section.