

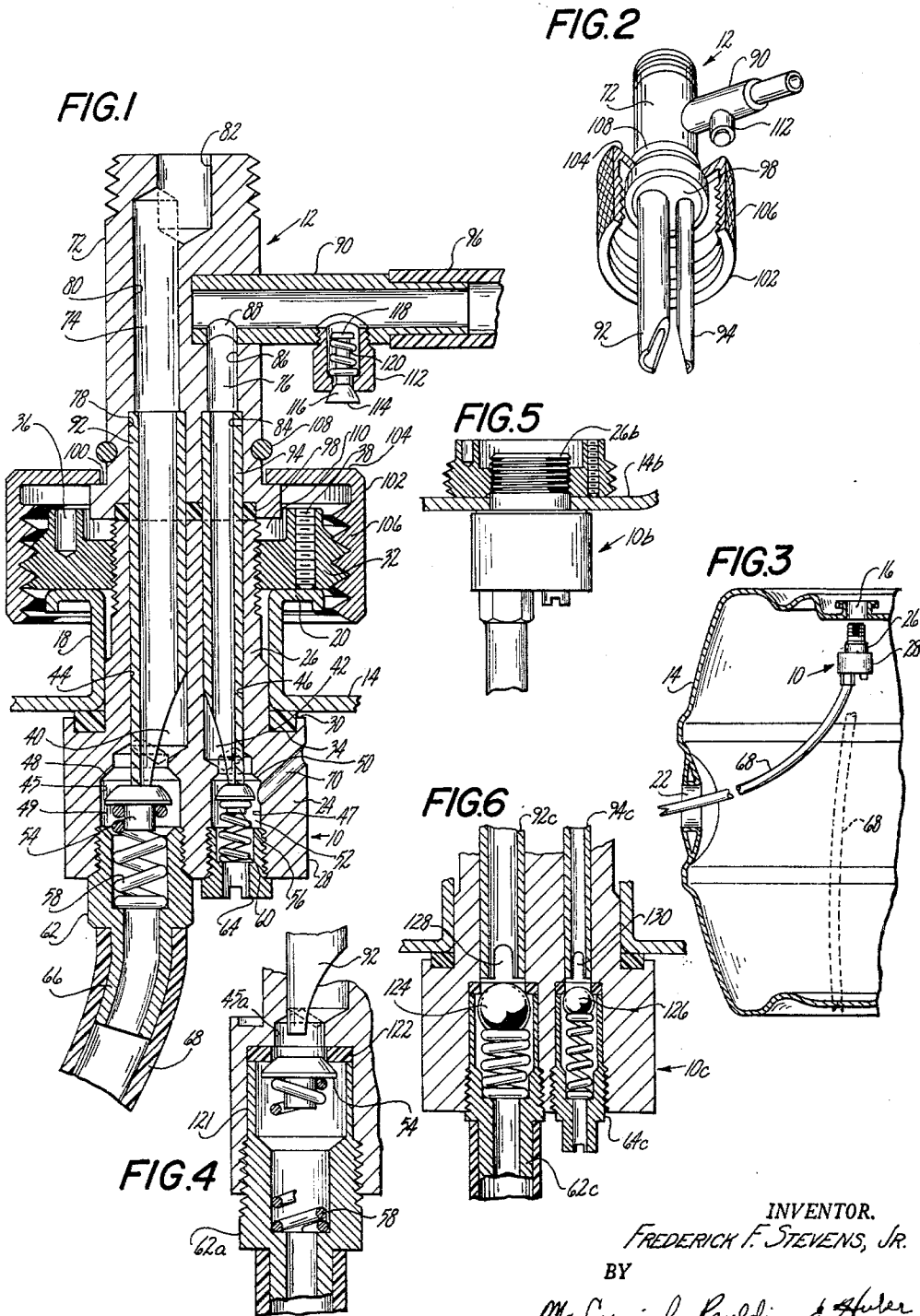
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KEG TAPPING DEVICE

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KEG TAPPING DEVICE

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This invention relates to a device for tapping kegs or similar containers containing fluids under pressure, and also relates to a method for assembling such a device with a container including both a tapping opening and a larger filling opening.

The device and method of the present invention have particular utility with regard to the tapping or drawing of beer from the kegs in which it is conventionally stored and shipped. For this reason, in the description which follows, reference is sometimes made to this specific application; but it is to be understood that the invention is not necessarily limited to the tapping of beer kegs and may be applied to the tapping of other containers if desired.

A conventional beer keg includes a tapping opening in the head of the keg and another larger filling opening in its side. Also, conventionally, plugs of wood or other material are forced into the two openings to prevent the escape of beer from the kegs after they are filled. Usually the tapping opening is defined by a cylindrical sleeve which provides a smooth bore of some axial extent for accommodating the plug and which also includes a radially outwardly extending flange for connection with a part of the tapping device. The tapping device in turn conventionally includes a tap rod which, after the device is first connected with the sleeve of the keg, is forced into the tapping opening to remove the plug and to establish communication with the beer in the keg. The complete procedure followed in applying the tapping device to the kegs is relatively complicated and in the pushing of the tap rod through the tapping opening to dislodge the plug requires a considerable manual effort. Furthermore, a danger is involved in this operation as the pressure in the keg being tapped sometimes blows the rod from the tapping device with some violence.

The general object of this invention is to provide an improved device for tapping kegs or similar containers, the device being relatively inexpensive to manufacture, easy and safe to use, and sanitary.

A more particular object of this invention is to provide a tapping device which eliminates any danger of parts being blown from the device during the attachment of the device or a part thereof to a keg.

Another object of this invention is to provide a tapping device which is usable with conventional kegs, of the type having cylindrical sleeves defining the tapping openings, without any modification of the kegs. In keeping with this object, a further object is to provide a tapping device which is usable with kegs having cylindrical tapping opening-defining sleeves of various axial lengths.

A further object of this invention is to provide a tapping device which does not require a cylindrical sleeve or other complicated keg structure at the tapping opening and which may be used with a simplified keg, of lower cost than present conventional kegs, having a tapping opening consisting of nothing more than a simple round opening passing through a flat wall of the keg.

A still further object of this invention is to provide a tapping device of the foregoing character which consists of one part or sub-assembly, called the keg unit, adapted to be permanently, or at least semi-permanently, attached to a keg so as to remain with the keg through a number of fillings and emptyings of the keg, and another part or sub-assembly, called the tavern unit, which is adapted

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to be attached to the cooling and drawing equipment at a tavern and which remains at the tavern.

Another object of this invention is to provide a keg unit for a tapping device as set forth in the preceding paragraph, which keg unit replaces the plug conventionally used in the tapping opening during shipment of the keg and which is completely leakproof so as to avoid any danger of the beer going flat because of loss of pressure.

Another object of this invention is to provide a tapping device including a safety means for automatically bleeding air from the associated keg to maintain the pressure in the keg at a safe level in the event the pressure tends to rise above such level. In keeping with this object, a further object of the invention is to provide a tapping device wherein excess pressure may be manually bled from the keg without uncoupling any part of the device from the keg and without loss of beer.

A further object of this invention is to provide a novel method of assembling a keg unit of the foregoing character with a keg whereby an improved and safe mounting of the unit to the keg is obtained together with maximum utilization of the space provided by the tapping opening.

Still another object of this invention is to provide a keg having combined therewith in a permanent or semi-permanent manner a tapping unit designed for cooperation with a complementary unit at the point of use, the tapping unit being joined to the keg in an improved manner providing simplicity of construction, strength and safety, among other benefits.

Other objects and advantages of the invention will be apparent from the following description and from the drawing forming a part hereof.

The drawing shows preferred embodiments of the invention and such embodiments will be described, but it will be understood that various changes may be made from the constructions disclosed, and that the drawing and description are not to be construed as defining or limiting the scope of the invention, the claims forming a part of this specification being relied upon for that purpose.

Of the drawing:

FIG. 1 is a vertical sectional view taken through a tapping device embodying the present invention.

FIG. 2 is a perspective view, drawn on a reduced scale, of the tavern unit of the device of FIG. 1, part of the union nut being shown broken away to reveal the structure of other parts.

FIG. 3 is a vertical sectional and fragmentary view taken through a keg and shows the manner of attaching the keg unit of the device of FIG. 1 to a keg.

FIG. 4 is an enlarged and fragmentary vertical sectional view showing an alternative valve construction for the device of FIG. 1.

FIG. 5 is a view partly in elevation and partly in vertical section of a keg unit comprising another embodiment of the present invention.

FIG. 6 is a vertical sectional view taken through a keg unit comprising still another embodiment of the present invention.

Turning now to the drawings, and first considering FIGS. 1, 2 and 3, a keg tapping device embodying the present invention comprises a first unit, indicated generally at 10 and referred to as the keg unit, and a second unit, indicated generally at 12 and referred to as the tavern unit. The keg unit 10 is adapted to be permanently or semi-permanently secured in the tapping opening of a keg or other container of the type conventionally used in storing and shipping beer or other liquids under pressure. In the drawings, a keg is indicated at 14 and in the head of the keg is a tapping opening 16 which is defined by a cylindrical sleeve 18 having at its outer end a radially out-

wardly extending flange 20. This sleeve is of the type presently found on many existing beer kegs and is used both to provide a smooth cylindrical bore for receiving the plug used to close the tapping opening during shipping and to provide the flange 20 which is used to connect conventional tapping devices to the keg.

The tapping device shown in FIGS. 1, 2 and 3 of the drawing is adapted for use with a keg having a tapping opening such as defined by the sleeve 18, and therefore it may be applied to existing kegs without modification of the kegs. The keg unit 10 of the present invention, however, remains with the keg during repeated emptying and fillings of the same and during shipment and idle storage of the kegs serves as a plug for closing the tapping opening. Therefore, the keg unit eliminates the need for conventional plugs and accordingly eliminates the need for a cylindrical bore of considerable axial extent at the tapping opening. It may, therefore, as hereinafter described in connection with FIG. 5, be designed for use with a tapping opening consisting of nothing more than a simple opening in the head of the keg. New kegs intended to use the keg unit of this invention may accordingly be made at less expense than present conventional kegs by eliminating the costly sleeve construction at the tapping opening.

Before passing on to a more detailed description of the tapping device, it should be noted that the keg 14 also includes a filling opening 22 located in the bilge or side of the keg. This filling opening has a diameter considerably greater than the diameter of the tapping opening 16 and also is defined by a cylindrical bore of some axial extent so as to be adapted to receive a plug of wood or other material after the keg is filled.

Turning now to a detailed description of the tapping device shown in FIGS. 1, 2 and 3, and first considering the keg unit 10, this unit as shown consists of a cylindrical body 24 having a stem portion 26 and a base portion 28, the base portion being of considerably larger diameter than the stem portion 26 and being separated from the stem portion by a radial shoulder 30. The stem portion 26 is adapted to pass through the tapping opening 16 and at its lower end has an external diameter closely conforming to the internal diameter of the sleeve 18. When the keg unit is properly mounted in the tapping opening 16, the upper end of the stem portion 26 projects upwardly beyond the flange 20 of the sleeve 18. This upwardly projecting end portion of the stem portion 26 is externally threaded as shown and is engageable with the internal threads of an annular retaining nut 32 which in conjunction with the radial shoulder 30, serves as a means for fixing the body 24 to the keg. The body 24 is recessed in the vicinity of the radial shoulder 30 to accommodate an annular gasket 34, preferably made of a soft plastic such as a vinyl plastic, which surrounds the lower end of the stem portion 26 and is engageable with the marginal portion of the keg 14 surrounding the tapping opening. When the retaining nut 32 is tightly threaded onto the upper end of the stem portion 26, it engages the upper surface of the flange 20, as shown, and securely fixes the body 24 to the keg, the gasket 34 being drawn into tight engagement with the keg to effect an airtight seal preventing a loss of pressure from inside the keg by leakage past the gasket. This location of the gasket is further such as to seal the bore of the sleeve 18 from the interior of the keg which eliminates the necessity of cleaning this difficult to clean area.

To aid in tightening and loosening the retaining nut 32, it preferably includes a number of upwardly opening sockets, such as the socket shown at 36, for receiving the lugs of a spanner wrench. The retaining nut is also preferably tapped and threaded to receive a set screw, such as shown at 38, for use in locking the retaining nut relative to the flange 20 after the retaining nut is fully tightened on the stem portion 26.

To permit the passage of beer or other liquid from the

keg and the passage of air or other pressurized gas into the keg, the body 24 of the keg unit 10 is provided with two side-by-side passageways 40 and 42 which pass through the body 24 in a direction generally parallel to the body axis, which when the unit is attached to a keg, is coincident with the axis of the tapping opening. The passageway 40 includes a smooth cylindrical bore 44 which passes from the upper end of the stem portion 26 into the upper end of the base portion 28, and it also includes another bore 45 passing from the lower end of the cylindrical bore 44 to the lower end of the base portion 28. The passageway 42 similarly includes a smooth cylindrical bore 46, of smaller diameter than the bore 44, passing from the upper end of the stem portion 26 into the upper end of the base portion 28, and it also includes another bore 47 passing from the lower end of the bore 46 to the lower end of base portion 28. As shown, the bore 45 is shaped to define a conical valve seat 48 and a valve chamber 49 located below the valve seat. The bore 47 is likewise shaped to define a conical seat 50 and a valve chamber 52 located below the seat 50.

Flow through the passageways 40 and 42 is controlled by two valve elements 54 and 56 located respectively in the valve chambers 49 and 52. Each of the valve elements 54 and 56 is of a mushroom shape and includes a spherical surface engageable with the associated valve seat 48 or 50, a flat upwardly facing top surface, and a downwardly extending cylindrical stem. Each valve element is biased upwardly toward a closed position relative to its seat 48 or 50 by an associated helical compression spring 58 or 60 which at its upper end surrounds the stem of the associated valve element. The lower end of the spring 58 is received in the bore of a tubular fitting 62 which is threadably connected with the base portion 28 at the lower end portion of the bore 45, and the spring 60 is similarly received in the bore of another fitting 64 threadably received in the bore 47. The bores of the fittings 62 and 64 communicate respectively with the bores 45 and 47 and include radial shoulders which engage the lower ends of the associated springs 58 and 60, the springs being compressed between such radial shoulders and the associated valve elements. When the tavern unit 12 is connected with the keg unit 10, as shown in FIG. 1, the valve elements 54 and 56 are held in their open positions by means hereinafter described in more detail. It will, however be understood that when the tavern unit is removed from the keg unit the springs 58 and 60 hold the valve elements 54 and 56 tightly engaged with their seats 48 and 50 to prevent the passage of gas or liquid from the keg through the passageways 40 and 42.

It should be particularly noted that in most conventional kegs presently in use, the tapping opening 16 is of a relatively small diameter and that many previous attempts to produce a valved device for closing the tapping opening have failed due to the problems involved in attempting to locate two valves within the small space provided by the tapping opening. This problem is overcome in the device illustrated in FIGS. 1, 2 and 3 by laterally outwardly offsetting the valve chamber defining bores 45 and 47 from the cylindrical bores 44 and 46. This provides more room for the valves and allows them to be made of a more simple, long-lasting and efficient construction than has been the case with previously proposed devices.

Before leaving the description of the keg unit 10, it should be noted that the passageway 42 is the passageway through which air or other gas is introduced into the interior of the keg 14 and that the bore of the fitting 64 communicates directly with the upper portion of the space enclosed by the keg. The passageway 40 is the passageway through which beer or other liquid is withdrawn from the keg and the fitting 62 includes a stem 66 which receives the upper end of a flexible tube 68, preferably made of nylon or similar plastic material. When the keg

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unit 10 is properly in place, the tube 68 extends to the bottom of the leg 14, as shown by dotted lines in FIG. 3, for conducting beer or other fluid from the bottom of the keg to the keg unit 10. Preferably, as shown in FIG. 1, the stem 66 is bent at an angle to the axis of the body 24 for a purpose hereinafter described in more detail. Also for a purpose hereinafter described, the body 24 further includes an auxiliary port or passageway 70 which provides communication between the valve chamber 52 and a point on the outer surface of the body 24 located above the fitting 64 and near the head of the keg. When the body 24 is provided with an auxiliary port 70, the fitting 64 need not necessarily have its bore extended completely therethrough and the head or lower end of the fitting could be made without an opening if desired.

Turning now to a description of the tavern unit 12, this unit comprises a body 72 having two passageways 74 and 76 therein which are adapted to respectively communicate with the bores 44 and 46 in the keg unit when the tavern unit is connected with the keg unit. The passageway 74 is defined by a cylindrical bore parallel to and offset from the central axis of the body 72 and having an enlarged diameter portion 78 in the lower end of the body and a smaller diameter portion 80 in the upper end of the body. The bore portion 80 does not pass completely through the upper end of the body 72 and at its upper end communicates with a short bore 82 coaxial with the axis of the body 72. The passageway 76 likewise at the lower end of the body includes an enlarged diameter bore portion 84 and above such portion a smaller diameter bore portion 86. At its upper end the bore portion 86 communicates with an opening 88 passing through the wall of a short tube 90 arranged perpendicular to the axis of the body 72 with one end inserted into a short transverse opening formed in the body. The tube 90 is press fitted or welded or otherwise securely fixed to the body.

To provide communication between the passageways in the tavern unit and the passageways in the keg unit and to properly locate the tavern unit relative to the keg unit, the tavern unit further includes two tubular probes 92 and 94. The probe 92 has its upper end portion inserted in the enlarged diameter bore portion 78 of the passageway 74 and the probe 94 similarly has its upper end portion inserted into the enlarged diameter bore portion 84 of the passageway 76, the probes being securely fixed to the body 72 by press fitting or other means. FIG. 2 shows the tavern unit 12 by itself, and from this figure the nature of the probes 92 and 94 will be readily understood. The outside diameters of the probes 92 and 94 are so related to the inside diameters of the bores 44 and 46, respectively, in the keg unit that the probes will fit into the bores 44 and 46 with little or no looseness and yet may be readily slid longitudinally of the bores 44 and 46 with little or no manual force. It will here be noted that due to the difference in the diameters of the two probes and of the two bores in the keg unit which receive the same, it is impossible to improperly connect the tavern unit to its keg unit. When the tavern unit is in its connected position, the probes 92 and 94 form part of the flow paths for beer and air out of and into the keg as will be evident from FIG. 1.

In accordance with the invention, the probe 92 is of such a length that when the tavern unit 12 is in its connected position relative to the keg unit, the lower end of the probe engages the flat top surface of the associated valve element 54 and holds it in an open position relative to its associated valve seat 43. Therefore, in attaching the tavern unit to the keg unit, the valve controlling the flow of beer from the keg is also automatically opened. The probe 94 is also preferably, but not necessarily, of such a length as to hold the associated valve element 56 in an open position when the tavern unit is connected with the keg unit, as shown in FIG. 1. Since the valve element 56 is used to control the flow of pressurized air into the

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keg, the applied air pressure could be used to open the valve instead of the probe 94, the valve in this case becoming a simple check valve. As explained hereinafter, however, it is desirable to have the valve element 56 held in an open condition by the probe 94 in order to permit the bleeding of excess pressure from a keg without the necessity of disconnecting the tavern unit from the keg unit or of removing any other parts. In order to permit the probes 92 and 94 to enter the laterally offset valve chambers 49 and 52, each probe at its lower end and along the side facing the opposite probe is relieved or cut away so that the remaining portions are of small enough size and arrangement to pass through the junction between the bore 44 and the offset bore 45 and the junction between the bore 46 and the offset bore 47.

To connect the tavern unit 12 to a hose or other means for conducting beer from the tavern unit to the cooling box or other related dispensing equipment at the point of use, the upper end of the body 72 is threaded for connection with a suitable coupling member. The transversely extending stem 90 also on its outer or free end has a reduced diameter portion for receiving a hose, such as indicated at 96 in FIG. 1, for conducting pressurized air or other gas from a suitable source to the tavern unit.

To provide a tight seal between the tavern unit and the keg unit, the lower end face of the body 72 is recessed to accommodate a gasket 98, preferably made of a soft plastic such as a vinyl plastic, which is generally circular in form and includes two apertures for receiving the probes 92 and 94, the gasket surrounding both of the probes and being engageable with the upper end face of the body 24 of the keg unit when the tavern unit is connected to the keg unit. To releasably hold the tavern unit in connected relationship with the keg unit, the body 72 of the tavern unit at its lower end includes a radially outwardly extending flange defining a radial shoulder 100. Cooperating with the shoulder 100 is a union nut 102 having a flange 104 adapted to engage the radial shoulder 100 and also having a cylindrical portion 106 provided with internal threads threadably engageable with the external threads on the retaining nut 32. The outer surface of the union nut 102 is preferably knurled as shown in FIG. 2 to permit the nut to be manually tightened and loosened relative to the retaining nut 32. As the retaining nut is tightened on the union nut, the flange 104 engages the radial shoulder 100 and draws the body 72 downwardly towards the body 24 to cause the gasket 98 to be squeezed between the two bodies, thereby providing an airtight seal. As shown, the union nut 102 may, if desired, be maintained in a position at the lower end of the body 72 by a snap ring 108 received in a shallow circumferential recess formed in the body 72 above the shoulder 100.

With regard to the connection between the tavern unit 12 and the keg unit 10, it should be particularly noted that the location of the retaining nut 32 relative to the stem portion 26 of the body of the keg unit may vary somewhat from keg to keg due to differences in the lengths of the sleeves 13 on the kegs. The union nut 102 is however so designed, with a relatively long cylindrical portion 106, that even when the retaining nut is used with a sleeve 13 of minimum length, the internal threads of the union nut will engage the threads of the retaining nut before the probes displace the valve elements from their seats. This makes it possible for the union nut to be threadably engaged with the retaining nut 32 before the valves in the keg unit are opened. That is, in attaching the tavern unit to the keg unit, the probes 92 and 94 are moved into the associated openings of the keg unit until the lower ends of the probes lightly engage the valve elements 54 and 56 or until the threads of the union nut 106 engage the threads of the retaining nut 32, whichever occurs first. If the snap ring 108 is located so as to permit only a very limited axial movement of the union nut relative to the body 72, the first occurrence will usually be the engagement of the two sets of threads. The union nut

is then rotated to effect a threaded engagement between the two sets of threads and as this is done, the body 72 and the probes 92 and 94 are moved downwardly causing the probes to open the valves. Thus, if there should be any tendency for the pressure in the keg to blow the tavern unit from the keg unit, this will be resisted by engagement of the union nut with the retaining nut, and if there should be any tendency for leakage between the tavern unit and the keg unit, this is quickly stopped by further rotation of the union nut which draws the gasket 98 into tight engagement with the top end face of the keg unit. It should also be noted that the retaining nut 32 is provided with an annular recess 110 to accommodate, if necessary, a portion of the lower end of the tavern unit body 72. This allows the keg unit to be attached to barrels having sleeves 18 of slightly different axial lengths.

Sometimes through accident or inadvertence, excess air pressure is introduced to the keg 14, as for example, by improper manipulation of the regulator valve at the source of air pressure. This excess air pressure may cause the beer withdrawn from the keg to foam and in conventional tapping systems is overcome either by withdrawing beer, which is thrown away because of its foamy nature, or by bleeding the excess air from the keg which can usually only be done by disconnecting parts of the tapping device and with some danger of parts being blown from the keg. One of the features of the illustrated tapping device is, however, that it includes a means for readily eliminating the excess pressure which may be built up in the keg.

Referring to FIG. 1, this means comprises a safety valve associated with the tavern unit for venting excess pressure from the air supply passageway to the atmosphere. This safety valve may be connected with the air supply passageway in various different ways, but in the illustrated case is shown to consist of a small tubular housing 112 connected with the tube 90. Located in the bore of the housing 112 is a valve element 114 having a conical head 116 and a stem 118 provided with a radial shoulder at the end opposite the head 116. A helical compression spring 120 surrounds the stem and is compressed between the shoulder on the stem and a shoulder in the bore of the housing 112 so as to normally hold the conical seat 116 in a closed position relative to the bore of the housing as shown in FIG. 1. The spring 120 is so designed that when the pressure inside the tube exceeds a predetermined value, the seat 116 will be displaced from the housing by the pressure existing in the air passageway to vent excess pressures to the atmosphere. In this regard, it should also be noted that since the probe 94 holds the valve element 56 in an open position, the safety valve 112 also controls the pressure inside the keg 14, and because of the auxiliary port 70 which communicates with a point very close to the top of the keg 14 the likelihood of any beer or other liquid being blown from a full or nearly full keg during a bleeding process is minimized. It should also be noted that the seat 116 on the safety valve element also extends a slight distance beyond the housing 112 by an extent sufficient to permit it to be grasped by the fingers or fingernails of a user to manually manipulate the valve element to bleed pressure from the keg and air passageways should it ever be desired to reduce the keg pressure to value even lower than the pressure at which the safety valve normally operates. This manual operation is relatively simple and is quickly performed.

In some cases, it may be desirable in the keg unit to use valve seat inserts made of nylon or Teflon or some other material having a resiliency greater than the material of the main body 24. FIG. 4 shows one manner in which a valve may be made with such an insert. Referring to this figure, which shows the associated probe 92 raised to a position out of contact with the associated valve element 54, the construction of the valve is similar to that of the left-hand valve of FIG. 1 except that the fitting 62a includes a cylindrical portion 121 which extends upwardly beyond the threads of the fitting and engages and holds

in place an annular valve seat 122 made of Teflon or other desired material, the bore 45a being properly shaped with a radial shoulder to receive the valve seat insert as shown. The valve element 54 is similar to the valve element 54 of FIG. 1 and includes a spherical surface which when the valve is closed engages the corner defined by the cylindrical bore of the valve seat insert and the lower face thereof.

As mentioned above, the keg unit shown in FIGS. 1, 2, and 3 is adapted for connection with a keg having a conventional tapping opening defined by a sleeve such as the sleeve 18. FIG. 5 shows a modified keg unit, indicated generally at 10b which is adapted for attachment to keg having a tapping opening consisting of a simple opening passing through the head of the keg indicated at 14b. This keg unit is or may be identical with the unit shown in FIG. 1 except for the stem portion 26b being considerably shorter than the stem portion 26 of FIG. 1. When a keg unit with such a shortened stem portion is used the probes of the tavern unit should, of course, be accordingly shortened.

As also mentioned above, one of the features of the present invention is that the valve chambers of the keg unit may be laterally offset from the passageways passing through the stem portion of the keg unit body in order to provide more space for the valves. This lateral offsetting of the valve chambers may, however, not always be necessary and in some instances, it may be desirable to locate the valve chambers directly in line with the passageways passing through the stem portion. FIG. 6 shows a keg unit wherein the valve chambers are so in line with the stem passageways, and in which construction also includes the valve seat inserts such as shown in FIG. 4. Where the valve chambers are in line with the passageways through the stem, it may be desirable to use ball valve elements, such as shown at 124 and 126 in place of mushroom shaped valve elements. In this figure, the probes 92c and 94c are shown in positions slightly raised from the valve elements 124 and 126. Due to the in-line relationship between the valve chambers and their associated passageways, the probes 92c and 94c need not be relieved at their lower ends as are the probes 92 and 94 of FIG. 1, but in order to provide communication between the valve chambers and the bores of the probes when the valves are opened, each probe at its lower end is provided with one or more openings in its side wall as shown at 128 and 130.

At this point, it should be noted that one of the features of the present invention is that because the base portion 28 of the keg unit is of a larger diameter than the tapping opening 16, it is impossible for the keg unit to be blown from the keg by the pressure contained therein. This is made possible by a novel method of attaching the keg unit to the keg. Referring to FIG. 3, which shows the keg unit 10 in the process of being attached to the keg, the novel process of attachment involves providing a keg unit 10 with a stem portion 26 which fits through the tapping opening 16 and with a base portion 28 which is of a diameter falling between that of the tapping opening 16 and that of the filling opening 22 so that the base portion will fit through the filling opening 22 but not through the tapping opening 16. The keg unit is then passed through the filling opening 22 into the interior of the keg and manipulated to cause the stem 26 to enter and pass through the tapping opening 16. After this is accomplished, the retaining nut 32 is applied to the threaded portion of the stem 26 and tightened to firmly seat the gasket 34 against the inner surface of the keg. Preferably, to aid in locating the opening 16 with the stem portion 28, the keg is turned upside down during this part of the attachment process. Also during this step, the tube 68 may be used as a convenient handle for maneuvering the keg unit into the opening 16. In this regard, it should be noted that the angular bend of the stem 66 of the fitting 62 aids in properly orienting the keg unit 10 inside the keg to facilitate finding the opening 16. It has been found that by

using only the tube 68, the tapping opening 16 can usually be found with little difficulty, but if desired fish wires or other aids may be used to facilitate the operation.

After the keg unit is secured to the keg by the retaining nut 32, the tube 68 may be pushed entirely into the keg. Preferably this is done before the retaining nut is fully tightened, and after the tube is pushed into the keg the keg unit 10 is rotated about a quarter of a turn relative to the keg to cause the tube 68 to move out of the plane of the filling opening 62. The retaining nut may then be fully tightened. This is cooperation with the bend of the stem 66 causes the tube 68 to assume a bowed condition causing it to pass from the center of the keg at the top of the tube to the side of the keg at the bottom of the tube. This is desirable insofar as it removes the tube 68 from a position directly in line with the filling opening 22 and thereby eliminates any possibility of interference between the tube 68 and a filling nozzle used for filling the keg. During the tightening of the retaining nut, the keg unit body may be held against rotation, if necessary, by a tool including two prongs insertable in the passageways of the body.

In again reviewing the drawing, it will be noted that the device illustrated is free from parts and surfaces difficult to clean. Also it is preferred and possible to make all of the parts, except for the gaskets and valve seat inserts and the tube 68 from stainless steel which is desirable for sanitary reasons. The keg unit is also readily cleaned by providing a cleaning implement which includes a nozzle generally similar to the tavern unit and including two probes through which hot water or steam may be introduced to the passageways in the keg unit, the probes also serving to open the valves as the nozzle is pushed into the keg unit.

It will further be understood that as used in this description and in the claims which follow, relative terms such as "upper," "lower," "above" and "below" have been used with reference to the device oriented as shown in the drawing.

The invention claimed is:

1. In a keg tapping device the combination comprising a first unit adapted to be mounted in the tapping opening of a keg and having two passageways passing therethrough, said first unit including an upper stem portion adapted to be received at least in part in said tapping opening and a lower base portion of larger transverse extent than said stem portion adapted to extend inwardly of said keg from said tapping opening, a valve associated with each of said passageways including a valve seat and a valve element movable between open and closed positions relative to said seat, at least one of said valves being located below the upper end of said base portion and being laterally outwardly offset from that part of its associated passageway which passes through said stem portion, means associated with each valve element for urging the same towards its closed position relative to its associated valve seat, a second unit movable between connected and disconnected positions relative to said first unit and having two passageways passing therethrough and arranged to communicate respectively with the two passageways in said first unit when said second unit is in its connected position relative to said first unit, and a tubular probe carried by said second unit and communicating with one of said passageways therein, said probe being of such a size and shape and being so arranged on said second unit as to be insertable in and longitudinally slidable relative to one of said passageways of said first unit as said second unit is moved to its connected position relative to said first unit, said probe further being of such length as to be engageable with the associated valve element to move the latter from its seat as said second unit is moved to said connected position.

2. The combination defined in claim 1 further characterized by a flexible tube fixed to said first unit and communicating with one of said passageways therein for conducting liquid from the bottom of the associated keg

to said latter passageway, and said first unit including a tubular stem for connecting said tube to said first unit, said stem being so disposed on said first unit that when said first unit is mounted in the tapping opening of a keg said stem is at an angle to the axis of said opening and said tube having its upper end portion fitted over said stem so that in passing inwardly of said keg from said first unit said tube is directed by said stem away from the axis of said tapping opening.

3. In a keg tapping device the combination comprising a first unit adapted to be mounted in the tapping opening of a keg and having two side-by-side passageways passing therethrough, each of said passageways including a valve chamber having a valve seat at one end thereof, a valve element in each of said valve chambers, means associated with each valve element for urging the same towards a closed position relative to the associated valve seat, a second unit movable between connected and disconnected positions relative to said first unit and having two passageways passing therethrough and arranged to communicate respectively with the two passageways in said first unit when said second unit is in its connected position relative to said first unit, and a tubular probe carried by said second unit and communicating with one of said passageways therein, said probe being of such a size and shape and being so arranged on said second unit as to be insertable in and longitudinally slidable relative to one of said passageways of said first unit as said second unit is moved to its connected position relative to said first unit, said probe further being of such length as to be engageable with the associated valve element to move the latter from its seat as said second unit is moved to said connected position, said first unit including a body having a stem portion adapted to pass through said tapping opening and a base portion which resides inside of the associated keg when said unit is mounted in said tapping opening and which is of greater transverse extent than said stem portion, and at least one of said valve chambers being laterally and outwardly offset from the portion of the passageway extending through said stem portion and of which it is a part.

4. In a keg tapping device the combination comprising a first unit adapted to be mounted in the tapping opening of a keg and having two side-by-side passageways passing therethrough, each of said passageways including a valve chamber having a valve seat at one end thereof, a valve element in each of said valve chambers, means associated with each valve element for urging the same towards a closed position relative to the associated valve seat, a second unit movable between connected and disconnected positions relative to said first unit and having two passageways passing therethrough and arranged to communicate respectively with the two passageways in said first unit when said second unit is in its connected position relative to said first unit, and a tubular probe carried by said second unit and communicating with one of said passageways therein, said probe being of such a size and shape and being so arranged on said second unit as to be insertable in and longitudinally slidable relative to one of said passageways of said first unit as said second unit is moved to its connected position relative to said first unit, said probe further being of such length as to be engageable with the associated valve element to move the latter from its seat as said second unit is moved to said connected position, said first unit including a body having a stem portion adapted to pass through said tapping opening and a base portion which resides inside of the associated keg when said unit is mounted in said tapping opening and which is of greater transverse extent than said stem portion, and said body having a central axis which is generally parallel to the axis of said tapping opening when said body is mounted in the latter, and each of said passageways passing through said first unit comprising a first bore parallel to said central axis passing from the upper end of said stem portion into the upper end of said base portion and a second bore

parallel to said central axis and passing from the lower end of said base portion upwardly into communication with said first bore, said second bore having its axis located further from said central axis than the axis of said first bore.

5. The combination defined in claim 4 further characterized by the valve element associated with said one passageway having a spherical sealing surface engageable with its associated valve seat and a flat surface facing said first bore of said one passageway, and the outer end of said probe being cut away to allow the remaining portion thereof to pass into the associated valve chamber to engage said flat surface of said latter valve element.

6. In a keg tapping device the combination comprising a first unit adapted to be mounted in the tapping opening of a keg and having two passageways passing therethrough, said first unit including an upper stem portion adapted to be received at least in part in said tapping opening and a lower base portion of larger transverse extent than said stem portion adapted to extend inwardly of said keg from said tapping opening, a valve associated with each of said passageways including a valve seat and a valve element movable between open and closed positions relative to said seat, said first unit having a central axis which is generally parallel to the axis of said tapping opening when said first unit is mounted in said tapping opening and one of said passageways comprising a first bore generally parallel to said central axis passing from the upper end of said stem portion into the upper end of said base portion and a second bore passing from the lower end of said base portion upwardly into communication with said first bore, said second bore having its axis located further from said central axis than the axis of said first bore, two valves each associated with a respective one of said passageways and each including a valve seat and a valve element movable between open and closed positions relative to its associated seat, the valve associated with said one passageway being located below the upper end of said base portion in alignment with said second bore so as to be laterally outwardly offset from said first bore, means associated with each valve element for urging the same towards its closed position relative to its associated seat, a second unit movable between connected and disconnected positions relative to said first unit and having two passageways passing therethrough and arranged to communicate respectively with the two passageways in said first unit when said second unit is in its connected position relative to said first unit, and a tubular probe carried by said second unit and communicating with one of said passageways therein, said probe being of such a size and shape and being so arranged on said second unit as to be insertable in and longitudinally slidable relative to one of said passageways of said first unit as said second unit is moved to its connected position relative to said first unit, said probe further being of such length as to be engageable with the associated valve element to move the latter from its seat as said second unit is moved to said connected position.

7. A keg unit for use in tapping a keg having a tapping opening, said keg unit comprising a body having two passageways extending therethrough and including an upper stem portion adapted to be received at least in part in said tapping opening and a lower base portion of larger transverse extent than said stem portion adapted to extend inwardly of said keg from said tapping opening, and a valve associated with each of said passageways including a valve seat and a valve element movable between open and closed positions relative to said seat, at least one of said valves being located below the upper end of said base portion and being laterally outwardly offset from that part of its associated passageway which passes through said stem portion.

8. A keg unit for use in tapping a keg having a tapping opening, said keg unit comprising a body having two passageways extending therethrough and including an upper stem portion adapted to be received at least in part in said tapping opening and a lower base portion of larger transverse extent than said stem portion adapted to extend inwardly of said keg from said tapping opening, a valve associated with each of said passageways including a valve seat and a valve element movable between open and closed positions relative to said seat, said body having a central axis which is generally parallel to the axis of said tapping opening when said body is mounted in said tapping opening and one of said passageways passing through said first unit comprising a first bore generally parallel to said central axis passing from the upper end of said stem portion into the upper end of said base portion and a second bore passing from the lower end of said base portion upwardly into communication with said first bore, said second bore having its axis located further from said central axis than the axis of said first bore, and two valves each associated with a respective one of said passageways and each including a valve seat and a valve element movable between open and closed positions relative to said seat, the one of said valves associated with said one passageway being located below the upper end of said base portion in alignment with said second bore so as to be laterally outwardly offset from said first bore.

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