This invention relates to liquid dispensing apparatus and more particularly to beer dispensers and cleaning apparatus therefor.

One object of the invention is the provision of a beer keg or the like having a fitting through which the draft tube can be inserted and having a bayonet connection with the keg bung, the fitting having a self-closing valve adapted to be held open by the draft tube, but normally closed when the draft tube is withdrawn so that the pressure within the keg may be maintained.

Another object of the invention is the provision of a self-closing valve fitting adapted to be readily attached to and disconnected from a barrel bung, and having attaching means at its opposite ends which are complementary to one another so that the fitting is adapted for use with standard connections.

Other objects and advantages of the invention will be apparent from the following description, the appended claims and the accompanying drawings, in which—

Fig. 1 is a vertical section of a portion of a beer dispensing system, showing a valve fitting embodying the present invention;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a section on the line 3—3 of Fig. 1;

Fig. 4 is a section on the line 4—4 of Fig. 1;

Fig. 5 is a section on the line 5—5 of Fig. 1;

Fig. 6 is a central sectional view of the fitting adapted for detachable connection to the lower end of the draft tube for cleaning purposes.

Referring more particularly to the drawing by reference numerals, 10 represents a beer keg or the like, having the usual bung 11 and containing a quantity of beer as indicated at 12. The beer is withdrawn from the keg through a draft tube 13, the lower end of which is closed as shown in Fig. 6, a series of holes 14, however, being provided a short distance above the bottom of the tube so that the beer may be forced through the draft tube to the control valve 15 which controls the flow through the dispensing pipe 16 which connects to the refrigerated coils leading in turn to the faucet or faucets.

In the usual construction the bung is provided with a coupling 18 having a bayonet type union with the bung 11 so that the inturmed flanges 19 of the coupling may be applied to the slots 20 of the bung and the coupling then rotated for attachment to the bung. Usually the coupling 18 is connected directly to a fitting 22 through which the draft tube extends, the joint between the draft tube and the fitting 22 being sealed by a compressible washer or packing which is tightened after the draft tube is inserted by means of a thumb nut 23. The fitting 22 is also supplied with a projection 26 having connection to a pressure gas supply pipe 25 so that the pressure may be applied to the outside of the draft tube and thus through the space between the draft tube and the fitting to the interior of the keg. It will be understood that the fitting 22 having the coupling 18 attached is applied to the bung 11 and the draft tube 13 then inserted so as to drive the cork, with which the opening 25 of the bung is initially provided, into the keg. However, in the usual construction, the draft tube cannot be withdrawn without losing the pressure prevailing within the keg, since the release of the pressure gas is then possible through the tube receiving passage. This has made it necessary to leave the draft tube in position until the entire contents of the keg have been consumed or withdrawn.

In accordance with the present invention, the coupling 18 is provided at the lower end of a valve fitting 28, the lower end of which is received within the upwardly extending boss 29 of the coupling portion. Rotatably mounted on the lower end of the valve fitting is a thumb nut 30 which is detachably threaded to the boss 29 and which bears against a flange 31 on the valve fitting so that when the nut 30 is screwed down on the coupling 18 the valve fitting 28 is forced down securely, compressing a washer or packing 32 between its lower end and the upper side of the bung 11, thus sealing the connection between these two parts.

The lower end of the valve fitting 28 including the coupling portion 18 is of a form complementary to its upper end, the upper end of the fitting having a bayonet form of connection as indicated at 34 so that it may be readily secured to a coupling 35 which is similar in form to the coupling portion 18. Coupling 35 forms a connection between the valve fitting and the fitting 22, the thumb nut 35 being threaded on the coupling 35 and serving to hold the fitting 22 down securely on the upper part of the valve fitting, a compressible washer or packing 37 being provided between these parts. By reason of the complementary form of the attachment at the top and at the bottom of the valve fitting 28, the latter may be applied between the standard form top fitting 22 and the bung 11 to which the top fitting is ordinarily attached.

The valve fitting is provided with a chamber 38 having a valve seat 39 which is normally en-
gaged by the self-closing valve 40 when the draft tube 13 is removed. Under such conditions the rubber valve seat 41 is held against the valve seat 39 by means of a coil spring 42 which en-
gages the valve shaft 43 at one end and a fixed pin 44 at the other end so as to urge the shaft 43 in a clockwise direction as viewed in Fig. 1, in a yielding manner. Provided centrally on the upper side of the valve face is a rounded knob 45 which is engaged by the lower end of the draft tube when the draft tube is inserted, so that the valve member 40 will then be swung down away from the valve seat without permitting the draft tube to strike against the rubber seat 41.

It will now be apparent that with the fitting 22 applied to the top of the valve fitting 28, and with the latter applied to the bung 11 of a keg of beer, the draft tube 13 may be inserted through the upper end of the upper fitting 22 to drive the cork down out of the bung and into the keg. As the draft tube 13 has a rather snug fit with the upper end of the fitting 22, the initial pressure of the keg is maintained, and as the beer is withdrawn from the keg the pressure gas within the keg may be supplemented by a flow through the pipe 25 to the air space around the draft tube. This arrangement, the draft tube may be withdrawn from the keg without losing the keg pressure, for as soon as the end of the draft tube is moved up past the valve member 40, the latter swings upwardly and entirely closes the passage through the valve fitting before the draft tube is entirely withdrawn through the end of the upper fitting 22. This makes it possible to transport a partly emptied keg of beer after withdrawing the draft tube.

The provision of a valve fitting 28 on a beer keg is particularly advantageous as a means of providing access to the lower end of the draft tube for cleaning purposes. The inside of the draft tube, and the walls of the beer coils to which the draft tube is attached become fouled and coated even though in use only a comparatively short time, and ordinarily access to the lower end of the draft tube is impossible for cleaning purposes until the contents of the keg to which the draft tube happens to be applied are exhausted. When a valve fitting is used having a valve adapted to close the passage opened by the removal of the draft tube and before the end of the draft tube is taken from the upper end of the fitting, the draft tube 13 may be withdrawn whenever desired, and the lower end of the draft tube can then be connected to a cleaning fluid supply apparatus so that the entire length of the beer dispensing line can be cleaned by a flow of fluid under pressure.

A special fitting 47 is provided as a means for attachment of the cleaning apparatus to the lower end of the draft tube so that the cleaning fluid can enter the tube 13 through the holes 14. This fitting 47, as shown in Fig. 6, comprises a body member 48 in threaded engagement with a connection 49. The cap portion has an opening 50 which telescopically receives an end of the draft tube 13, and after the latter is applied, the cap portion 49 may be screwed down on the body 48, compressing packing member 51 and thus sealing the connection between the draft tube and the fitting 47. The chamber within the fitting 47 is of substantially larger size than the opening 50 so that the walls of the fitting are spaced a substantial distance from the walls 75 of the draft tube 13. This permits a flow of cleaning fluid through the openings 14. The cleaning fluid is supplied through a flexible hose or pipe 52 which is detachably connected by a hose coupling 53 to a projection 54 extending from one side of the fitting 47.

While the form of apparatus herein described constitutes a preferred embodiment of the invention, it is to be understood that the invention is not limited to this precise form of apparatus, and that changes may be made therein without departing from the scope of the invention which is defined in the appended claims.

What is claimed is:

1. In combination, a liquid dispensing pressure tank, a quickly detachable connection on said tank having a passage therethrough, said connection having a bayonet attachment at its lower end providing for quick fastening to the tank and having an opposed complementary bayonet attachment at its other end, a liquid withdrawal tube removably inserted in said passage and communicating with a low point in the tank, said connection having a valve adapted for closing said passage but held open when said tube is in place, and a fitting having a bayonet attachment adapted for connection with the second mentioned bayonet attachment of said connection, said fitting having means provided beyond said valve for sealing the joint between said tube and connection.

2. In combination, a liquid dispensing pressure tank, a quickly detachable connection on said tank having a passage therethrough, said connection having a bayonet attachment at its lower end providing for quick fastening to the tank and having an opposed complementary bayonet attachment at its other end, a liquid withdrawal tube removably inserted in said passage and communicating with a low point in the tank, a self-closing valve in said connection adapted to close said passage and to be opened by the end of said tube and to be held open by said tube, means provided beyond said valve for sealing the joint between said tube and connection, and means for supplying gas under pressure to said connection on the outer side of said tube, whereby the liquid withdrawal tube can be removed and the pressure in the tank maintained.

3. In combination, a liquid dispensing tank having a bung provided with an opening and having a bayonet portion, a quickly detachable fitting having a bayonet portion adapted for quick attachment to said bung, said fitting having a second bayonet portion which is similar in size and shape to the bayonet portion on the bung, a tap rod, said fitting having a passage receiv-
ing the tap rod and having a self-closing valve adapted to close said passage and to be opened by the end of said tap rod and to be held open by said tap rod, and a second fitting having a bayo-
et portion connected to the said second bayonet portion of said first fitting, said second fitting having means supplying gas under pressure to said first fitting on the outer side of the tap rod and having means for sealing the joint between it and the tap rod.

4. A valve fitting of the character described having a bayonet lower end adapted for quick attachment to a keg bung and having a bayonet upper end of complementary form adapted for quick attachment to a tap rod holder, said fitting comprising a housing and a valve in said housing normally closed against its seat to prevent outflow of fluid, said valve being adapted to be pushed open by the end of a tap rod.
5. A valve fitting of the character described having a lower bayonet end adapted for quick attachment to a keg bung and having an upper bayonet end of the same size but of complementary form and adapted for quick attachment to a tap rod holder, said fitting comprising a housing having a passage extending from end to end thereof and between said bayonet ends, and a valve in said housing having spring means normally holding it against its seat and thereby preventing any outflow from the opening of the fitting which is attachable to the bung, said valve being adapted to be pushed open by the end of the tap rod as the tap rod is inserted.

6. A valve fitting for kegs of the character described comprising a housing having a passage therethrough from one end to the other through which a tap rod can be moved and having a self-closing valve for normally sealing said passage but adapted to be pushed open by the end of the tap rod and held open by the tap rod, said housing having a bayonet lower end adapted for quick attachment to a keg bung, means to supply gas under pressure to said fitting outwardly of said valve, and means located outwardly of the valve and operable to seal the joint between the tap rod and the fitting.

7. A valve fitting of the character described, adapted for use with kegs and the like, comprising a housing having a passage therethrough from one end to the other through which a tap rod can be moved and having a pivotally mounted self-closing valve for normally sealing said passage and provided between the ends of said passage, said valve having an annular seat surface of yielding material and having a central projection for engagement with the end of the tap rod for opening of the valve when the tap rod is inserted and adapted for entry in a portion of said passage when the tap rod is removed, said housing having a bayonet lower end below said valve adapted for quick attachment to a keg bung, and a connection at the opposite end of said housing and outwardly of said valve for supplying pressure gas.