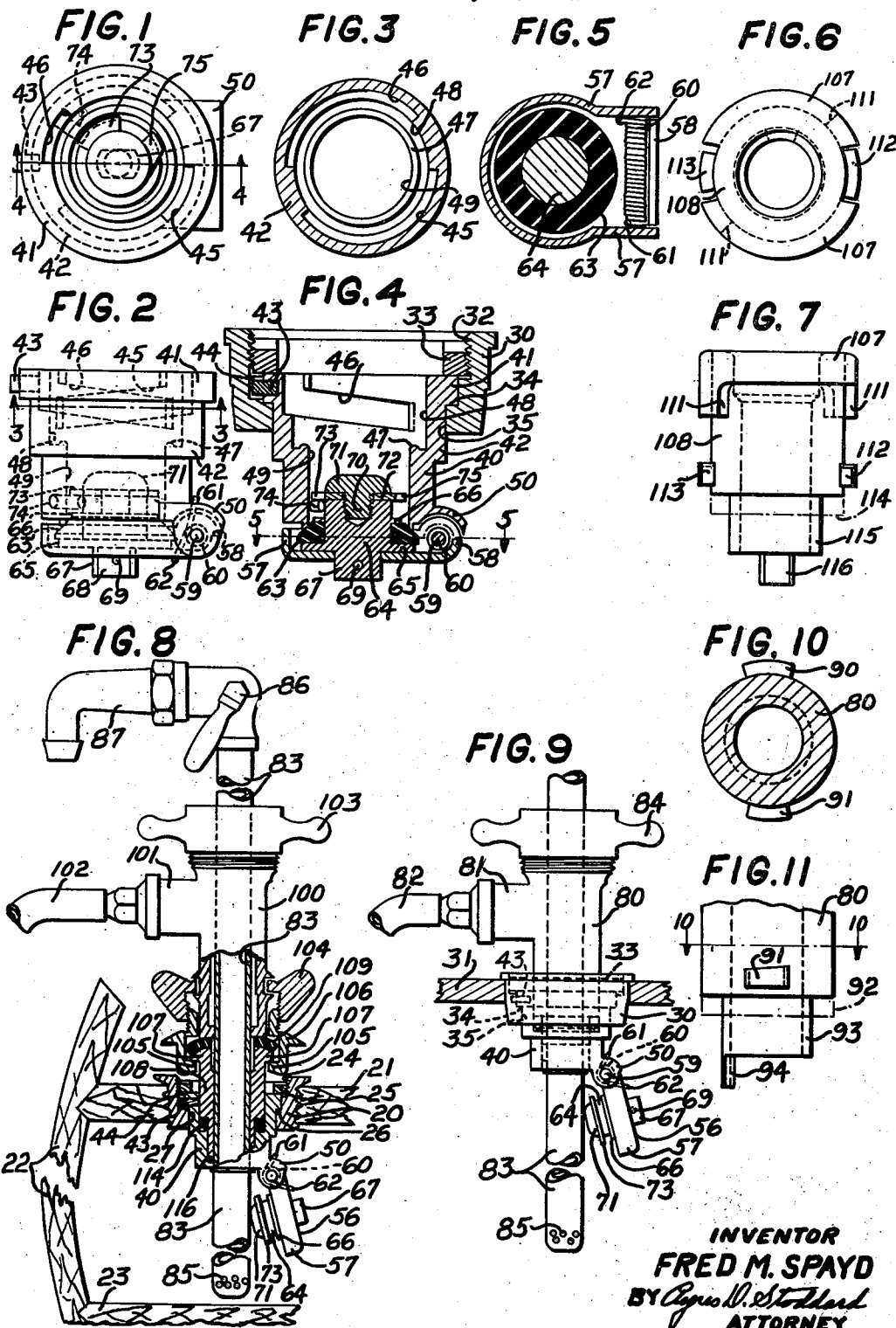


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TAP FITTING FOR LIQUID CONTAINERS AND BARRELS OR KEGS

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TAP FITTING FOR LIQUID CONTAINERS AND
BARRELS OR KEGSFred M. Spayd, Van Wert, Ohio, assignor to F. M.
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This invention relates to tap fittings for barrels, drums, or kegs, and more particularly to tap fittings used in connection with the dispensing of beer and other liquids from such devices.

This invention is an improvement over the tap fitting shown in my United States Patent No. 2,083,281 dated June 8, 1937.

My present invention is much more economical to manufacture and has many advantages over the taps and fittings now being used by dispensers of liquids from barrels and kegs. It also permits of the use of standard taps now on the market, but in case a dispenser does not have a standard tap, my novel tap is used which can be made at a very much lower cost than the standard tap or the tap shown in my above mentioned patent.

My self-closing valve permits removal of the draft tube for cleaning at any time without any appreciable amount of pressure in the barrel, and my locking means in the valve is particularly useful as it prevents any one from opening the valve when the tap has been removed, either for use on another barrel or after the barrel has been emptied and is ready for shipment back to the brewery.

This locking of the valve is a great advantage because no one during shipment of the empty barrel can get the valve open, and therefore no foreign matter can get into the barrel. Or if a barrel is only partially full and the dispenser wishes to tap another barrel he can immediately change his tap to said other barrel and the first barrel will not only be sealed air-tight by the valve but the valve will be locked as the tap or adapter effects a locking of the valve at the time of removal thereof.

The above advantages amount to a great saving in time and labor when the barrels are cleaned before refilling, and also amount to a great saving in money to the dispenser, because with the barrel sealed and locked, no foreign matter can get into the beer or other liquid and there will be no escaping of the pressure in the barrel and consequently no loss of material due to spoilage by such foreign matter or loss of pressure, which latter causes beer to go "flat," and "flat" beer will not sell.

Therefore, one object of my invention is the provision of a novel tap fitting through which a draft tube can be inserted, said fitting having a self-closing valve adapted to be opened by the draft tube upon its insertion into the barrel, said valve being normally closed and locked, but being adapted to be unlocked by the tap when it is inserted therein and turned, said valve automati-

cally closing and seating itself in position to be again locked when the draft tube is withdrawn, so that when the tap is turned back into a position to be withdrawn, the valve will again be locked in closed position, by such turning of the tap, thus preventing any loss of pressure in the barrel or keg.

Another object is the provision of a novel locking means for the valve for the purpose of preventing loss of pressure in the barrel and also for preventing any foreign matter from getting into the barrel.

Another object is the provision of a novel tap to operate the locking means for the valve.

Another object is to provide a novel adapter which also can be used to operate the locking means of the valve so that standard taps may be used if necessary, where the dispenser has such taps on hand.

Another object is the provision of a novel fitting to support said self-closing valve and to receive the novel tap or the novel adapter, whereby the valve may be unlocked.

A further object is to provide a novel bush, to be inserted into a wooden barrel or keg, to receive said novel fitting, said bush being provided with a threaded portion to receive a threaded retaining ring to retain the novel fitting in proper position in the bush ready to receive the tap.

A further object is to provide a novel bush to be inserted into a metal barrel or keg in lieu of a wooden barrel or keg, said bush also having a threaded retaining ring to hold said fitting in its proper position ready to receive the tap.

Another object is the provision of a novel valve carrying a latch or locking device and a keeper in the novel fitting to cooperate with the locking device.

A still further object of my novel invention is the provision of means carried by the novel tap for operating the latch or locking device of the valve.

With these and other incidental objects in view my invention includes certain novel features of construction and combinations of parts, the essential elements of which are set forth in appended claims, and a preferred form of embodiment of which is hereinafter described with reference to the drawing which accompanies and forms part of this specification.

Of said drawing:

Fig. 1 is a plan view of my novel tap fitting, showing the valve in locked position.

Fig. 2 is a side elevation of the tap fitting and the valve assembled therein.

Fig. 3 is a section on line 3—3 of Fig. 2, looking in the direction of the arrows, showing the bayonet slots for the tap connections and for the adapted connections.

Fig. 4 is a section on line 4—4 of Fig. 1, looking in the direction of the arrows, showing the valve and locking means, and also the bush for metal barrels, and the retaining ring for the tap fitting.

Fig. 5 is a section on line 5—5 of Fig. 2, looking in the direction of the arrows, showing the valve base construction and the spring for closing the valve, and also holding the valve in a position to be closed when the draft tube has been withdrawn.

Fig. 6 is a top view of the adapter to be used in the tap fitting so that a standard tap can be used, said adapter being the means by which the locking device of the valve is operated.

Fig. 7 is a side elevation of the adapter for the standard tap and to operate the valve lock, and also shows the bayonet connections thereon whereby said adapter may be connected to the tap fitting.

Fig. 8 is a view, partly in section showing how a standard tap may be used and connected to the adapter in the tap fitting which is mounted in a bush in a wooden barrel or keg.

Fig. 9 is a view showing the novel tap in the tap fitting which is mounted in a bush in a metal barrel or keg, a part of which is here shown in section.

Fig. 10 is a section on line 10—10 of Fig. 11, looking in the direction of the arrows, of the novel tap showing the bayonet connections to connect the tap to the tap fitting before inserting the draft tube.

Fig. 11 is a fragmentary view of the lower part of my novel tap of Fig. 8, showing one of the bayonet connections and the means for operating the locking device of the valve.

GENERAL DESCRIPTION

In general my invention includes means for use in connection with the dispensing of liquids from barrels or kegs which have a pressure therein for the purpose of forcing the liquids out of said barrels or kegs when the same have been properly tapped, said means comprising a novel tap, tap fitting, bush for either wooden or metal barrels, a self-closing valve for the fitting, and a novel locking device for the valve adapted to be operated by the tap or the adapter for a standard tap.

Thus, my invention provides a novel quickly attachable and detachable means whereby a barrel may be tapped to dispense the liquid therein, and furthermore provides a novel and highly desirable locking device in connection with the valve for the purposes broadly stated above.

DETAILED DESCRIPTION

Bush

In Fig. 8 there is shown a screw type of bush 20 in a wooden barrel head 21. The barrel staves are indicated as 22 and the barrel bottom is shown as 23.

The bush 20 has a threaded counterbore 24 to receive a threaded retaining ring 25 to retain a tap fitting, later described, in proper position against a shoulder 26 of the bush 20. The bush 20 has a bore or hole 27 through which said fitting projects into the barrel.

In Figs. 4 and 9 there is shown a bush 30 for use in a metal barrel, the head 31 of which is

shown in section in Fig. 9. This bush 30 has a threaded counterbore 32 to receive a threaded retaining ring 33 to retain the above mentioned fitting in proper position against a shoulder 34 of the bush 30. The bush 30 has a bore or hole 35 through which said tap fitting projects into the barrel.

Tap fitting

A tap fitting 40 is shown in Figs. 1, 2, 4, 8 and 9 and has shoulder 41 which rests against the shoulder 26 of the bush 20 or the shoulder 34 of the bush 30 depending upon the kind of barrel being tapped, that is, whether it is wooden barrel or a metal barrel. A shoulder 42 fits the bores 27 and 35 of the bushes 20 and 30, respectively. A pin 43 driven into the shoulder 41 slides in a slot 44 of the bushes 20 and 30 to prevent the tap fitting 40 from turning when the retaining ring 25 or 33 is screwed down on the top of the fitting 40 to properly hold it in position in either of the bushes 20 or 30.

The tap fitting 40 has bayonet slots 45 and 46, the top, or vertical entrance to the slot 45 being larger than the vertical entrance to the slot 46. These slots are to receive connections, on an adapter for a standard tap, and also connections on a special tap, which adapter and taps will be later described.

The tap fitting 40 has a ring shoulder 47 between an upper bore 48 and a lower bore 49. The fitting 40 also has a ledge 50 which is formed to house and support a self-closing valve, to be later described.

Self-closing valve and locking device therefor

A self-closing valve and locking device therefor and for the tap fitting 40 is shown in Figs. 1, 2, 4, 8 and 9, and includes a valve base 56 having a flange 57 and a lip 58. The flange 57 is shown in section in Fig. 5 and pivots on a rod 59 carried by the sides of the ledge 50. A coil torsion spring 60 wrapped around the rod 59 has one end 61 projecting through the ledge 50 and its other end 62 projecting through the base 56. This spring 60 holds the valve in the position shown in Figs. 2 and 4 to keep the barrel sealed.

In such position a washer 63 completely closes the bore 49 of the tap fitting 40. This washer 63 is mounted on a stud 64 between flanges 65 and 66 thereof and the stud 64 also has a tenon 67 with flat sides 68, which tenon projects through a hole of the same shape, in the base 56.

The top of the stud 64 has a tapped hole to receive a screw 70 with a large head 71 which holds a turnable locking disk 72 against the top of the stud 64. This locking disk 72 has a locking lip 73 cooperating with a pin 74 projecting into the bore 49 from the fitting 40. Another lip 75 extends from the disk 72. The lips 73 and 75 (Fig. 1) are arranged so that a finger, to be later described, can be inserted between them to turn the disk 72 and move the locking lip 73 above the pin 74 to positively lock the valve in closed position as the tap or the tap adapter, as the case may be, is turned back before removing the same from the fitting 40. Also this finger, referred to, is used to turn the disk 72 to unlock the valve prior to the insertion of the draft tube, later described.

Tap

A tap 80 is shown in Figs. 9, 10 and 11 and has the usual arm 81 for a pressure gas supply tube 82 so that air pressure may be applied to the outside of the draft tube 83 and the inside of the tap 80, that is between the draft tube and the tap,

to the interior of the barrel. The space between the draft tube 83 and the tap 80 is sealed at the top by the usual compressible washer (not shown) which is pressed into a sealing position by a thumb nut 84. The draft tube 83 has a series of holes 85 near the bottom thereof and at its top (Fig. 8) has the usual control valve 86 and dispensing tube 87.

The lower part of the tap 80 has lugs 90 and 91 to fit the vertical sections of the bayonet slots 45 and 46 respectively of Figs. 1 and 4, of the fitting 40 whereby the tap 80 may be inserted into the fitting 40 and turned to lock it therein by means of the bayonet slots 45 and 46 and the lugs 90 and 91. The tap 80 turnably fits in the bore 48 of the fitting 40 and a compressible washer 92 rests on, and is pressed against the ring shoulder 47 when the tap 80 is inserted into the fitting 40 and turned to locking position.

The tap 80 has a smaller section 93 which properly fits the bore 49 and this section has a finger 94 which is inserted between the lips 73 and 75 of the locking disk 72 when the tap 80 is inserted in the fitting 40. Therefore, after such insertion of the tap 80, the turning thereof to lock the tap in the fitting 40, simultaneously unlocks the valve by removing the locking lip 73 from the top of the pin 74.

The draft tube 83 may now be inserted into the barrel by first inserting it into the top of the tap 80. As the draft tube 83 is so moved, it contacts the head 71 of the valve and rocks the valve counterclockwise to the position shown in Fig. 9, and the pressure may then be applied to the inside of the barrel and the liquid therein dispensed through the tube 83 and the tube 82. Such movement of the valve puts extra tension on the spring 60 and when the draft tube 83 is withdrawn, the valve, under the influence of said spring 60, immediately closes and seals the bore 49 of the fitting 40 thus preventing any loss of pressure in the barrel, and also preventing any foreign matter from getting into the barrel.

Now when the tap 80 is turned back so that it can be removed, the finger 94 contacts the lip 73 and turns the locking disk 72 to again force the lip 73 over the pin 74 to positively lock the valve in closed position. The tap 80 is now in such position that the lugs 90 and 91 register with the bottom parts of the vertical sections of the bayonet slots 45 and 46 and therefore, the tap 80 may be withdrawn from the fitting 40, at the same time leaving the valve in closed and locked position.

Standard tap and adapter

In order that a standard tap may be used in connection with my novel tap fitting 40 to unlock and lock the valve in a manner similar to the operation of my novel tap 80, I have provided a special adapter to be interposed between the standard tap and the fitting 40.

In Fig. 8 I have shown a standard tap 100 with its usual pressure gas supply arm 101 and tube 102, and also the regular thumb nut 103 to seal the top of the tap 100 around the draft tube 83. The usual coupling nut 104 is used to draw lugs 105 of a coupling 106 tightly against the undersides of shoulders 107 of an adapter 108 (Figs. 6, 7 and 8), thus squeezing a compressible washer 109 tightly between the adapter 108 and the bottom 110 of the standard tap 100. The shoulders 107 have stop lugs 111 against which the lugs 105 of the coupling 106 stop so that the latter will be

drawn upwardly by the turning of the coupling nut 104.

The adapter 108 has a large lug 112 (Figs. 6 and 7) and a smaller lug 113 to fit the bayonet slots 45 and 46 respectively of the tap fitting 40 to lock the adapter in the fitting and compress a flexible washer 114 tightly against the ring shoulder 47 in the same manner as the tap 80 presses its washer 92 against this shoulder 47.

The main body of the adapter 108 turnably fits in the bore 48 and a smaller section 115 of the adapter fits the bore 49. A finger 116 of said section 115 is inserted between the lips 73 and 75 of the valve locking disk 72 to unlock and lock the valve by turning the adapter 108 in the same manner as the turning of the special tap 80 unlocks and locks said valve by the finger 94 of said tap 80.

After the coupling 106 has been tightly secured to the tap 100 by the nut 104, the whole unit, including the tap 100 and the adapter 108, is used in the same manner as the tap 80 so that the draft tube 83 can be inserted through the tap 100 and the adapter 108 to dispense the liquid in the barrel.

OPERATION

A detailed operation of the devices described above is believed to be unnecessary as their operations and functions have been clearly stated along with the detailed descriptions of the same. However, it may be well to state here that my novel devices provide for the quick tapping of any barrel or keg, whether it be wooden or metal, to dispense the liquids therein. And furthermore, when either the special tap 80 or the standard tap 100 is inserted in the tap fitting 40 and then turned to lock itself, the act of locking itself automatically unlocks the valve in the bottom of the tap fitting 40 so that the draft tube 83 can be inserted through the tap and into the barrel or keg.

Moreover after the draft tube 83 has been withdrawn from either the tap 80 or the standard tap 100 and said tap is turned back to unlocked position ready to be removed, such turning back automatically and simultaneously locks the valve in the bottom of the tap fitting 40 to positively seal the barrel or keg, to prevent loss of pressure from the barrel or keg and also to prevent any foreign matter from getting into said barrel or keg.

Due to my novel valve and locking means therefore, air cannot get into the barrel or other container and therefore, there will be no souring or fermentation of any small amount of beer or other liquid that might be left in said container. Nor will mold grow on the top of the leavings in a container, and also mold will not grow on the sides of the barrel or container due to the airtight condition in which the container is left after the tap has been withdrawn, because as has already been pointed out, the withdrawal of the tap causes an automatic locking of the valve.

While the form of device herein illustrated and described is admirably adapted to fulfil the objects primarily stated, it is to be understood that I do not wish to limit my invention to the specific device shown, as it is susceptible of embodiment in other forms, all coming within the scope of the claims which follow.

What is claimed is:

1. In a device of the class described for dispensing liquid from a container by the pressure and/or gravity method said container having a bush, the combination of a tap fitting mounted

in said bush; a self-closing valve carried by the tap fitting; locking means on the valve for locking the same closed; a tap adapted to be inserted into said tap fitting and then turned; means carried by the tap to lock said tap in the tap fitting when said tap is turned; and means connected to said tap and moved into cooperative relation with said locking means for the valve upon insertion of the tap into said tap fitting to automatically operate said locking means for the valve when the tap is turned to lock itself in the tap fitting.

2. In a device of the class described for dispensing liquid from a container by the pressure and/or gravity method said container having a bush, the combination of a tap fitting mounted in said bush and having bayonet slots therein; a self-closing valve carried by said fitting; means carried by the valve for normally locking the valve closed; a tap adapted to be inserted into the tap fitting and then turned; means connected to said tap for cooperating with said bayonet slots to guide the tap in its insertion into said fitting and to lock the tap in the fitting when turned in said bayonet slots; and a device connected to said tap to automatically unlock said valve when the tap is turned to locking position in said tap fitting and to automatically lock said valve when said tap is turned back to its unlocked position prior to its removal from said tap fitting.

3. In a device of the class described, for dispensing liquids from a container, the combination of a bush for the container; a tap fitting mounted in said bush; retaining means to hold the tap fitting firmly in said bush; means to prevent said fitting from turning in said bush; a self-closing valve carried by said fitting, said valve including a pivoted base supporting a stud carrying a compressible sealing means; and a locking member turnably mounted on said stud and normally in a position to lock the valve closed, said member adapted to be turned relatively to said stud to unlock the valve so that it may be opened.

4. In a device of the class described for dispensing liquids from a container, the combination of a bush for said container; a tap fitting mounted in said bush; retaining means to hold the tap fitting firmly in said bush; means to prevent said fitting from turning in said bush; a self-closing valve carried by said fitting, said valve including a pivoted base supporting a stud carrying a compressible sealing means; a locking member carried by said stud and normally locking said valve in closed position; a tap insertable into said tap fitting and turnable therein after insertion thereof; means on said tap to lock the same in said fitting as the tap is turned; and means on said tap to cooperate with said locking member to unlock and lock said valve.

5. In a device of the class described for dispensing liquids from a container, the combination of a bush for said container; a tap fitting mounted in said bush; retaining means to hold the tap fitting firmly in said bush; means to prevent said fitting from turning in said bush; a self-closing valve carried by said fitting, said valve including a pivoted base supporting a stud carrying a compressible sealing means; a locking member carried by said stud and normally locking said valve in closed position; and tapping means to cooperate with said locking member to operate the latter to unlock and lock said valve.

6. In a device of the class described, for dispensing liquids from a container having a bush, the combination of; a tap fitting mounted in said bush; a valve carried by said tap fitting and adapted to close the bottom thereof; a locking member carried by said valve and normally locking said valve in closed position, said member having two lips, one cooperating with means on said tap fitting to normally lock the valve in closed position; and rotatable tapping means having a finger projecting between said two lips and adapted to contact one of them to operate said locking member to move the other lip out of cooperating relation with said means on the tap fitting to unlock said valve and adapted to contact said other lip to operate the locking member to move the last mentioned lip into cooperative relation with said means on the tap fitting to lock said valve.

7. In a device of the class described, for dispensing liquids from a container having a bush, the combination of; a tap fitting mounted in said bush; a valve carried by said tap fitting and adapted to close the bottom thereof; a locking member carried by said valve and normally locking said valve in closed position, said member having a notched lip cooperating with means on said tap fitting to normally lock said valve in closed position; and turnable tapping means having a finger projecting into said notched lip to operate said locking member to unlock and lock the valve when said tapping means is turned.

8. In a device of the class described for dispensing liquids from a container having a bush, the combination of a tap fitting mounted in said bush; a valve having an extension projecting into said tap fitting to close the bottom of said tap fitting; turnable tapping means projecting into the tap fitting opposite said extension and adapted to receive a draft tube; rotatable means on said valve extension to prevent insertion of the draft tube into the container before the tapping means is turned to properly locate it in said tap fitting; and means carried by the tapping means to engage and operate said rotatable means when the tapping means is turned in the fitting to render the rotatable preventing means ineffective, to permit insertion of the draft tube.

9. In a device of the class described for dispensing liquids from a container by the pressure and/or gravity method, said container having a bush, the combination of a tap fitting supported by said bush; a self-closing valve carried by the fitting to close the bottom thereof; locking means for the valve to lock said valve closed; a tap insertable into the tap fitting and turnable therein; and means connected to said tap and cooperating with said locking means to operate the same by turning the tap.

10. In a device of the class described, for dispensing liquids from a container, the combination of a bush for the container; a tap fitting mounted in said bush, said tap fitting having an internal annular shoulder; a compressible sealing member supported by said shoulder; retaining means to hold the tap fitting firmly in said bush; a self-closing valve carried by said fitting and having a compressible sealing means; a locking member carried by the valve and normally locking said valve in closed position; a tap insertable into said tap fitting and turnable therein after insertion thereof, said tap having

an external annular shoulder engaging said compressible member; means on said tap to lock the same in said fitting and to cause the external annular shoulder to compress said sealing member to form a seal between the tap and the tap fitting as the tap is turned; and means on said tap to cooperate with said locking member to unlock and lock said valve.

11. In a device of the class described, for dispensing liquids from a container, the combination of a bush for the container; a tap; a fitting mounted in said bush; retaining means to hold the fitting firmly in said bush; means to pre-

vent said fitting from turning in said bush; a self-closing valve carried by said fitting, said valve including a pivoted base supporting a stud carrying a compressible sealing means; a locking member turnably mounted on said stud and normally in a position to lock the valve closed, said member adapted to be turned relatively to said stud to unlock the valve so that it may be opened; and means insertable into said fitting and connected to said tap and turnable in said fitting to operate said locking member.

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