B. SCHMELZER.

LIQUID TAPPING DEVICE.

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1,077,943.

Patented Nov. 4, 1913.

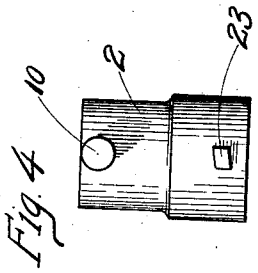


Fig. 4

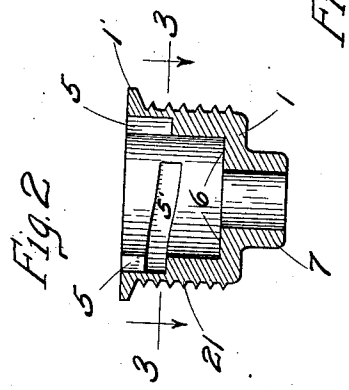


Fig. 2

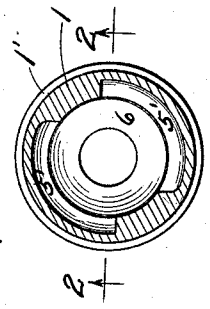


Fig. 3

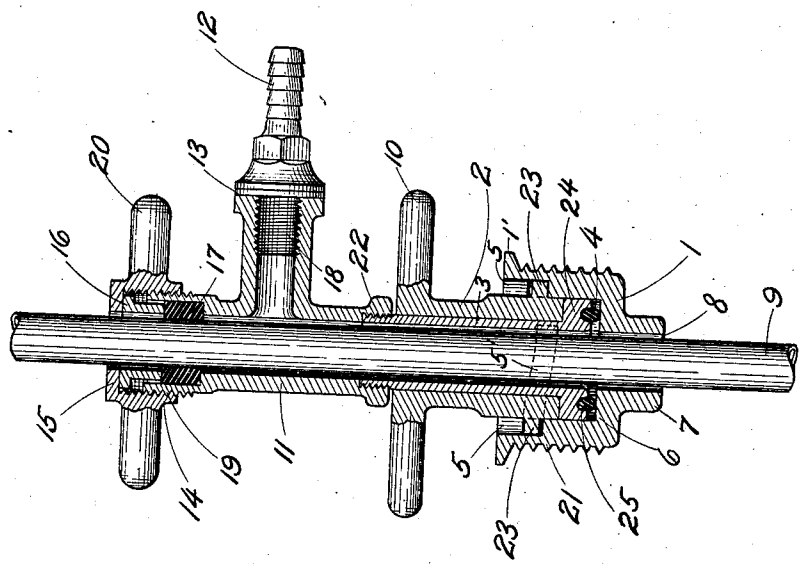


Fig. 1

WITNESSES

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LIQUID-TAPPING DEVICE.

1,077,943. Specification of Letters Patent. Patented Nov. 4, 1913.

Application filed January 24, 1911. Serial No. 604,372.

To all whom it may concern:

Be it known that I, BERNARD SCHMELZER, a citizen of the United States, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Liquid-Tapping Devices, of which the following is a specification.

The invention which I disclose herewith relates to improvements in liquid tapping devices, such as beer taps, particularly of that class in which the device comprises an interchangeable bushing adapted to be screwed or otherwise fitted into the liquid containing receptacle and a main tap element which may be readily connected to and disconnected from the bushing and thereby enable its removal from one receptacle to another, said bushing being provided with a detachable plug which may readily be removed therefrom, as by a thrust from the outside, when it is desired to attach the main tap element for drawing off the liquid.

My improvement also relates to those taps in which provision is made for supplying air or other gas under pressure through another part of the tap, the liquid being forced under pressure of said gas, it being provided, however, that when the liquid contains or generates gases of its own sufficient to produce the necessary drawing pressure the artificial pressure may be discontinued.

The principal object of my invention is to provide means for detachably fastening the tap securely in the bushing and to cause it to operate in such a way that there can be no leakage, and, moreover, so as to avoid any friction or substantial wear on the packing material, which is usually provided on the end adjacent the plug. I also aim to provide a bayonet catch on a freely rotatable sleeve adapted to engage said bushing in such a way that when turned into place a purely longitudinal pressure will be exerted on a rubber packing between the receptacle engaging bushing and the tap, the catch slots being adapted to permit varying degrees of tightness and to provide for wear in such a way as always insures a tight joint. These and other objects I will more fully set forth in the following specification and claim.

I am aware that various taps have already been used embodying the principle of using a detachable bushing fitted into the liquid holding receptacle and provided with means for attaching a discharge tap thereto by means of suitable threads or catches, and also embodying the use of a draft tube and means for supplying an artificial gas pressure to the receptacle. There are certain features of my invention, however, which I believe to be novel and useful, as more fully hereinafter set forth and particularly pointed out in the claim.

Referring to the drawings—Figure 1 represents a vertical middle section of my improved tap showing the draft tube in perspective. Fig. 2 is a vertical middle section of the receptacle engaging bushing. Fig. 3 is a horizontal cross section along the line 3 of Fig. 2. Fig. 4 is a vertical perspective view of the bayonet catch locking cylinder which coacts with the said bushing.

In all the drawings like numerals refer to like parts.

Generally speaking, my improved tap in its preferred embodiment comprises five separate and freely detachable parts beside the bushing 1, viz: the catch bearing cylinder 2, the gasket bearing cylinder 3, the gas pressure T-connector 11, the draft packing pressure cap 16, and the main screw cap 15 for locking the draft tube.

The receptacle bushing 1 is of a general cup shape, having its outside threaded or otherwise adapted to securely engage the wall of a liquid containing receptacle, as when it is screwed into a bung-hole. The lower end of the bushing is substantially flat, with a central opening through a depending annular flange 7 for the admission of a draft tube 9, with ample clearance for air space 8. The substantially cylindrical inner surface of this bushing 1 is provided with slots each comprising preferably a short, longitudinal portion 5 extending from the edge and merging into a laterally extending, downwardly inclined portion 5′ extending partly around the inside of the bushing. The bottom of this bushing constitutes an annular shoulder 6 about the draft tube opening, adapted to serve as a seat for the tapping device. The opening in the flanged part 7 may be closed by an ordinary stopper, such as a cork or the like, inserted from the lower end. This bushing 1 is intended to be placed in the receptacle when filled and may remain attached thereto at all times, the taps being interchangeable with respect thereto.

The gas pressure T-connector 11 comprises preferably a T-shaped casting threaded at each of the three openings. It has a nipple 12 screwed permanently to the main gas entrance opening on one side, as shown in the drawing, and a suitable packing gasket 13 between the connector and the nipple. The lower end of the main body of this T-connector is threaded at 22 preferably on the inside, and adapted to engage a downwardly extending hollow cylindrical element 3 having a horizontally and outwardly extending flange 24 on its lower end. This element 3 is also provided on said lower end with a slot 25 for attaching an annular rubber gasket 4 or the like adapted to insure a perfectly tight fit when pressed closely against a suitable coacting element, as bushing 1. Surrounding this downwardly extending element 3 and bearing downwardly against the said flange is a catch bearing cylinder 2 adapted to rotate freely about 3, suitable arms 10 being provided on the upper end by means of which one may turn the same forcibly when desired, as in locking. The lower end of this locking cylinder 2 is fitted with oppositely extending lugs 23 adapted to engage the corresponding slots 5—5′ in the receptacle engaging bushing 1.

The upper end of the T-element is preferably expanded, thereby providing a shoulder on the inside, not far from the top, adapted to serve as a seat for a cylindrical rubber gasket 17. A small plain bushing 16 is provided to fit loosely in the upper end of this T-element and rest upon said rubber gasket. Threads are provided at 19 on the outside on the upper end of T-element adapted to engage corresponding threads on the inside of a cylindrical cap element 15. This cap has a perforated top forming a bearing shoulder at the upper end adapted to exert a pressure against the said bushing and force it downwardly against the rubber gasket 17 when said cap 15 is screwed tightly down as enabled by the arms 20.

The various elements aforesaid, when assembled, present a cylindrical passage of substantially uniform diameter, except that when pressure is applied on the gasket 17 in the upper end of the T-element it expands transversely of the passage so as to tightly engage the draft tube inserted within the tap. This tube at all other points is of less diameter than the cylindrical opening in the tap and fits loosely therein. This looseness permits air or other gas to be introduced under pressure through the nipple 12 and thence downwardly through the tap outside of the draft tube and into the liquid receptacle. None of this gas can escape upward because of the expanded condition of the gasket 17. Hence, when the gas or air pressure is applied the liquid will be forced outward through the tube 9 whenever the faucet connected to the draft tube is opened.

The operation of my device is as follows: Each liquid containing receptacle, such as barrels or the like, adapted for storage and transportation purposes, is fitted with one of the interchangeable receptacle bushings, which is screwed tightly into the bung-hole and closed by means of a suitable removable stopper which can be knocked out by a sudden thrust inwardly, as by the draft tube. When it is desired to draw liquid from a receptacle fitted with one of these bushings, it is first necessary to insert the gasket-equipped end of the tap into the open cup-like mouth of the bushing with the gasket on the end of the tap engaging the bottom of the cup, and with the lock lugs registering with the lock slots. Then the bayonet catch cylinder which surrounds the lower end of the tap is given a sharp turn in the proper direction, preferably in the standard right-hand direction. This thrusts the tap well into the cup of the bushing and tightly closes the packing connection between the bushing and the tap, the closeness of fit depending on the degree of force applied to the catch cylinder 2. The T-connector is preferably already attached to the gasket cylinder 3, but if it is not already in place it is next to be attached by means of the threaded connection 22. The draft tube 9, gasket 17, bushing 16, and cap 15 are preferably already in place, with the cap screwed loosely in position. The draft tube, one end of which is connected by suitable piping to the liquid drawing faucet, is inserted with its open end foremost into my improved tap and given a quick thrust inward, which thus removes the plug in the main bushing. Immediately upon thrusting this draft-tube downward the cap at the top of the tap is given a quick turn in the proper direction to tighten it, which act compresses the rubber gasket adjacent thereto and expands it horizontally so as to fit tightly around the draft-tube and prevent any leakage either of air or liquid around the outside of the said tube. In the meantime the artificial pressure nipple having been connected to a suitable source of air or other gas pressure is adapted to conduct such gas into the receptacle, whereby it will cause the liquid to flow outward through the draft-tube under corresponding pressure when the drawing faucet is opened.

Although I have confined my description to a single preferred embodiment, I wish it to be understood that such modifications as the terms of my claims will permit may be made by one skilled in the art without departing from the spirit of my invention.

Having thus described my invention, I claim:

In a device of the class described, a hollow bushing provided with a reduced aperture through the bottom, said aperture forming a shoulder in said bushing and adapted to be closed by a cork or plug, said bushing being further provided with downwardly inclined slots in the interior lateral surface thereof said inclined slots having entrance slots leading upwardly from the upper end thereof, a tapping member comprising a sleeve having a flange at its lower extremity closely fitting the interior of said bushing and provided with a groove in its under surface, a connector member secured to the upper end of said sleeve and having an external flange around its lower extremity, a packing ring carried in said groove in the sleeve flange and resting on the shoulder in said bushing when in assembled relation, and a locking sleeve closely fitting around said first-named sleeve and extending between the lower end of the connector member and the flange on said first named sleeve, said locking sleeve being provided with outwardly extending lugs adapted to co-act with the slots in said bushing, and being further provided with operating handles located a relatively considerable distance above the upper end of said bushing, whereby said sleeve may be partially rotated to press said packing ring against said bushing shoulder without said handles closely approaching the chimes of a barrel in which said bushing may be carried.

In testimony whereof, I have subscribed my name.

BERNARD SCHMELZER.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."