June 26, 1923.

1,460,208

J. MOHN

PUMP

Filed Oct. 6, 1919

Fig. 1.

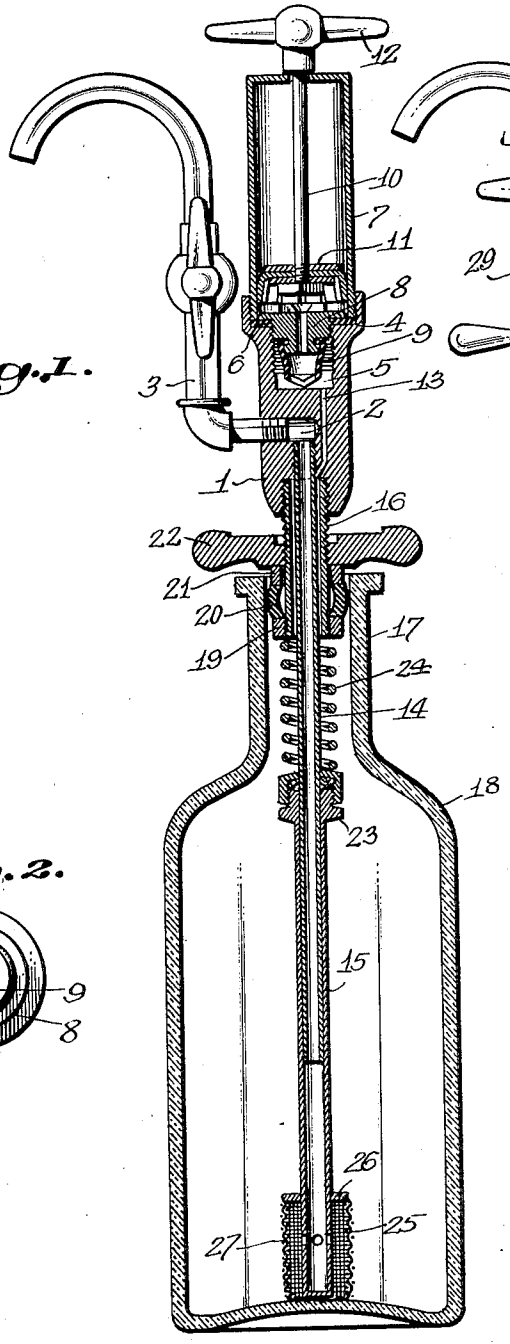


Fig. 4.

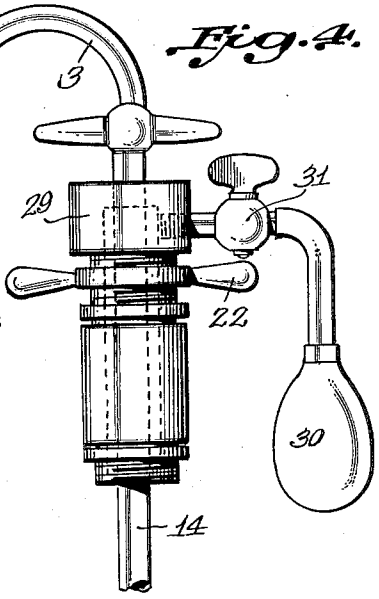
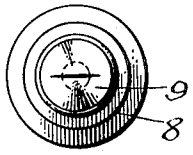


Fig. 2.



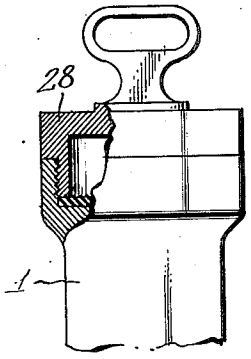


Fig. 3.

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Patented June 26, 1923. 1,460,208

UNITED STATES PATENT OFFICE.

JOHN MOHN, OF DETROIT, MICHIGAN.

PUMP.

Application filed October 6, 1919. Serial No. 328,802.

To all whom it may concern:

Be it known that I, JOHN MOHN, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Pumps, of which the following is a specification, reference being had therein to the accompanying drawings.

In Patent 674,510, granted May 21, 1901, there is disclosed a combined tap and pump, and the present invention aims to provide a more compact, simple and inexpensive construction than what is disclosed in the drawing of the above mentioned patent.

This invention also aims to furnish a tap and pump with a novel discharge tube and packing for sealing the tube in the neck of a bottle or other receptacle so as to establish a very tight connection at the mouth of the bottle during the operation of the pump.

The packing is of such construction that it may be expanded or distended to fit in the necks of bottles of various sizes.

My invention further aims to provide a pump body which may be closed when not utilized as a pump, and this pump body, as as well as other parts of the tapping device, are constructed so as to be collapsed and occupy a comparatively small space when not in use.

The invention is further characterized by certain structural features which are very important from a manufacturing standpoint, and reference will now be had to the drawing wherein—

Figure 1 is a vertical sectional view of the combined tap and pump;

Fig. 2 is a bottom plan of a pump cylinder showing the check valve thereof;

Fig. 3 is a side elevation of a portion of the pump body, partly broken away and partly in section, showing a closure therefor; and

Fig. 4 is a side elevation of a modified form of pump.

The reference numeral 1 denotes a cylindrical pump body having a lateral port 2 in which is mounted the inner end of a gooseneck faucet 3 which, for packing purposes, may be removed. The upper end of the pump body 1 is formed to provide a seat 4 and a recess 5. On the seat 4 is a gasket 6 and screwed into the upper end of the pump body 1, against the gasket 6, is a pump cylinder 7. In the inner end of the pump cylinder 7 is a check valve body 8 supporting a slitted flexible check valve 9 and with the check valve body 8 screwed into the recess 5 the check valve 9 is supported therein.

Reciprocable in the cylinder 7 is a piston rod 10 which has the inner end thereof provided with a conventional form of piston 11 and the outer end thereof with a handle 12 so that the piston may be reciprocated and co-operate with the check valve 9 in forcing air into the bottle and onto the contents thereof, so that the contents of the bottle will be forced through the telescopic discharge to and through the faucet 3.

The port 2 of the pump body 1 communicates with a telescopic discharge tube composed of a fixed section 14 and a slidable section 15, the latter telescoping the former. The telescopic discharge tube extends through a tubular section 16 attached to the lower end of the pump body 1 where said connection communicates with the recess 5 of the pump body through a port 13, so that the air from the recess 5 may enter the connection 16. On the lower end of the connection is an adjustable packing device for sealing bottle necks or mouths 17 of various sizes of bottles; that illustrated being designated 18.

The adjustable packing device comprises a nut 19 on the lower end of the connection 16 and seated on said nut about the connection 16 is a resilient packing member 20 preferably in the form of a tubular washer or gasket which may be bulged or distended by endwise pressure. On the upper end of the packing member 20 is a washer 21 and engaging said washer is a hand wheel or large nut 22 in screw-threaded engagement with the connection 16 and adapted to be adjusted to produce an endwise pressure on the packing member 20 so that said member may be bulged or distended to engage the inner walls of a bottle neck 17 and seal the bottle 18. The packing device will render the bottle 18 air tight during the operation of the pump and firmly support the tapping device relative to the bottle or receptacle.

On the upper end of the slidable section 15 of the discharge tube is a conventional form of stuffing box 23 and surrounding the fixed section 14 of the telescopic discharge tube, between the stuffing box 23 and the nut 19, is a coiled expansion spring 24 whose expansive force maintains the slidable sec-

tion 15 of the telescopic discharge tube normally extended, but permits of the section 15 being shifted towards the packing device when pressure is brought to bear against the lower end of the tube section 15.

In order that pressure may be brought to bear on the lower end of the tube section 15 said tube has its lower end closed and above the closed end is a series of openings 25. Above these openings is a fixed head 26 supporting a strainer screen, or foraminous body 27 which incloses the lower closed end of the tube 15. It is therefore possible to place the telescopic discharge tube in the bottle 18, against the bottom thereof and bring pressure to bear on the tapping device until the tube section 14 slides in the section 15 and the packing device enters the neck 17 of the bottle 18.

The telescopic discharge tube will become adjusted for bottles of various depths and its length over all will be sufficient for the maximum depth of bottles and when said tube is collapsed it will fit in bottles of minimum depth. Then the packing device may be adjusted to seal the bottle and hold the tapping device in engagement therewith. The lower end of the tube section 15 being closed prevents said tube section from being injured by contacting with the bottle and the strainer 27 prevents sediment and floating or suspended particles from entering the discharge tube, clogging the same, and interfering with the operation of the pump.

When the pump is not in use the cylinder 7 may be removed and a closure 28 connected to the pump body 1, as shown in Fig. 3, thus preventing carbonated or effervescent contents of the bottle 18 from becoming "flat".

In lieu of the pump body 1 and its cylinder 7 I may provide a pump body 29 with a compressible bulb 30, similar to a syringe bulb, and install a valve 31 between the bulb 30 and the pump body 29.

The purpose of the valve 31 is to provide a gas-tight closure for the tube leading from the compressible bulb to the pump body, it thus having the same function as the closure 28 used with the other form of pump.

After a bottle containing a carbonated beverage is opened and a part of the contents withdrawn, the remainder will become "flat" unless the closure is kept absolutely tight and pressure maintained on the liquid. Gas will leak past such a check valve as 9, in Fig. 1, and past the piston, or, in Fig. 2, it will leak through the bulb connections or through the valves usually placed in such pump bulbs. The closure 28 in the first form and the valve 31 in the second form will prevent such leakage and thus the beverage will remain "sparkling".

In some other beverages, such as grape juice, which are not carbonated, unless the closures are kept gas-tight, air will enter and deterioration will occur. This has prevented the general use of large containers for grape juice. By the use of my device, maintaining an air-tight seal, grape juice may be kept without loss of quality for extended periods after the first portion has been withdrawn.

It is thought that the operation and utility of a combined tap and pump will be apparent without further description, and while in the drawing there are illlustrated the preferred embodiments of my invention it is to be understood that the structural elements are susceptible to such variations and modifications as fall within the scope of the appended claim.

What I claim is:

The combination with a pump and a connection carried thereby of a packing device carried by said connection and a telescopic discharge tube extending through said connection and in operative communication with said pump, the tube consisting of two sections, one having a stuffing box connection with the other, and a coiled expansion spring engaging the stuffing box to maintain one section of the tube normally extended relatively to the other.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN MOHN.

Witnesses:
ELMER J. MOHN,
KARL H. BUTLER.