

T. J. LEVEY
BOTTLE FILLING APPARATUS.
APPLICATION FILED JULY 15, 1910.

992,721.

Patented May 16, 1911.

2 SHEETS—SHEET 1.

Fig. 1

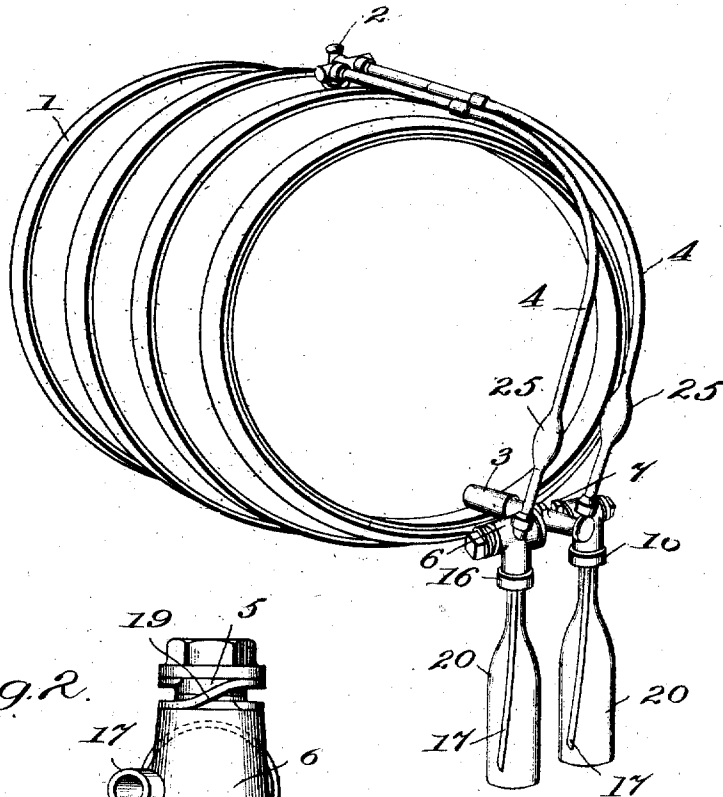
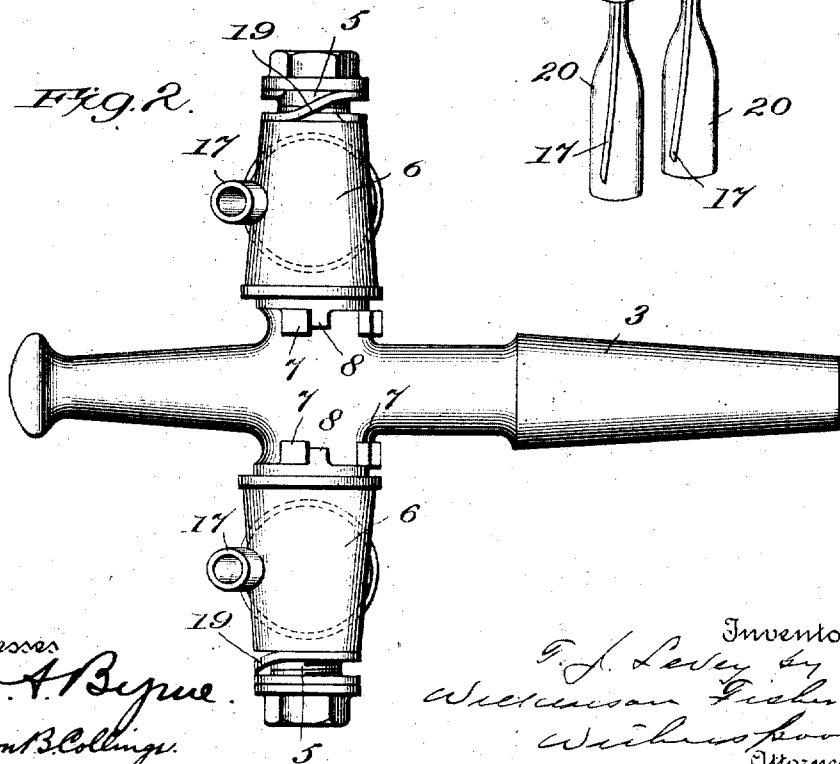


Fig. 2



Witnesses
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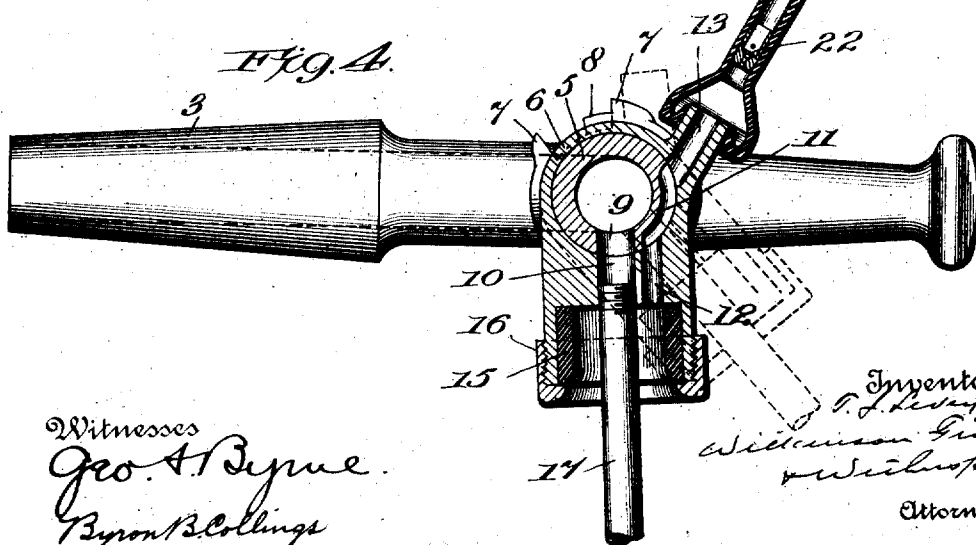
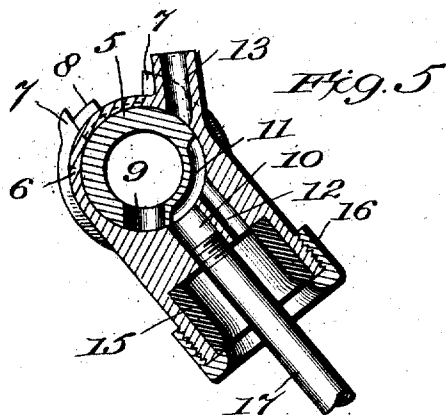
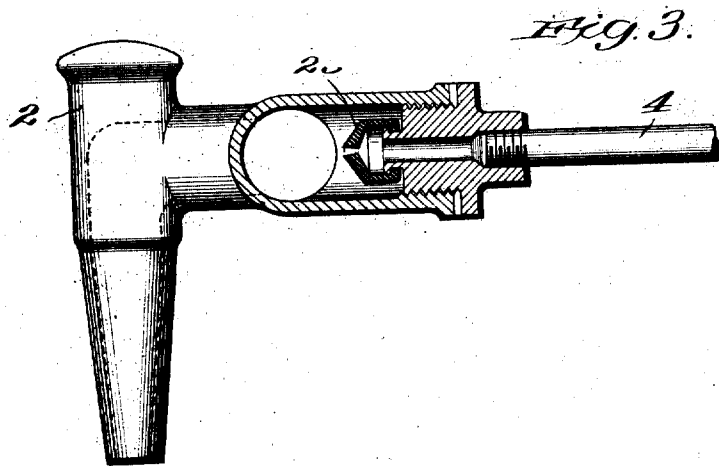
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UNITED STATES PATENT OFFICE.

THOMAS J. LEVEY, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO THE INTERNATIONAL CAP AND SEALING-MACHINE COMPANY, OF HIGHLANDTOWN, MARYLAND, A CORPORATION OF MARYLAND.

BOTTLE-FILLING APPARATUS.

992,721.

Specification of Letters Patent.

Patented May 16, 1911.

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To all whom it may concern:

Be it known that I, THOMAS J. LEVEY, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Bottle-Filling Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to bottle filling apparatus, and is especially adapted for filling bottles with beer or other gas bearing liquids which have a sufficiently high surface tension to render the air vents liable to be clogged during the filling operation.

The object of the invention is to produce a device of this nature which will be simple and inexpensive to construct, and one which will be more efficient in action than those heretofore produced.

To these ends the invention consists in the novel combinations of parts and in the details of construction more fully hereinafter disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification in which like numerals refer to like parts in all the views:—Figure 1 is a perspective view of a beer keg with my improvement applied thereto; Fig. 2 is a plan view of the bottle filling faucet detached from the keg; Fig. 3 is a sectional detail view of the vent plug; Fig. 4 is a view of the faucet and of the vent clearing device partly in section; and Fig. 5 is a sectional detail view of the bottle filling head.

1 represents any suitable beer supply, 2 a vent plug, 3 a bottle filling faucet and 4 pipes connecting the vent plug and faucet. The faucet 3 is provided with the T shaped extensions 5 preferably conical in shape, over which fit the valve sleeves 6 as best shown in Figs. 4 and 5. The extensions 5 are provided with the lugs 7, between which play the lugs 8, one on each sleeve 6, and therefore said lugs 7 serve to limit the movement of the said sleeves 6 around the extensions 5. The said extensions 5 are provided with the beer ports 9 which are in one position of the sleeves adapted to register with the bottle filling ports 10, as shown in

Fig. 4. When, however, the said sleeves 6 are thrown over into their other extreme position, as shown in dotted lines in Fig. 4 and in full lines in Fig. 5, the said ports 9 and 10 are out of register as indicated. The said extensions 5 are also provided with cut away places on their exterior, constituting vent passages 11, and when the parts are in the position shown in full lines in Fig. 4, said vent passages register with the vent passages 12 and 13 carried by the sleeves 6, as will be readily understood. The sleeves are also provided with a packing 15 adapted to fit snugly around the bottle head, and with a suitable means 16 for holding said packing in position. A filling pipe 17 also extends from the port 10 down to near the bottom of the bottle. The parts 10, 15, 16 and 17 constitute my filling head. In order to hold the conical sleeves 6 liquid tight on the conical extensions 5, I preferably provide springs 19 which normally force said sleeves 6 to their seats, as will be readily understood.

So far as now disclosed, it is evident that if a bottle 20 is brought into position for filling, as indicated in Fig. 1, and if the sleeve 6 is thereupon turned from the dotted line position, shown in Fig. 4, to the full line position shown in said figure, that liquid will flow through the faucet 3, the ports 9 and 10, and the pipe 17 to the bottom of the bottle, and will fill the same, while the air contained in the bottle will escape through the passages 12, 11 and 13 through the pipe 4 to the vent plug 2 and back into the keg. It often happens, however, in dealing with gummy, gelatinous liquids, such as beer, that the vent ports such as 11, 12 and 13 become gummed up or closed with foam and other substances which are more or less oxidizable, and that although the bottle filling head may work satisfactorily for a time, yet eventually the vents refuse to act and the bottles cannot be filled with the desired facility. In order to obviate this difficulty, I provide the pipes 4 with the valves 22 at one end, and at the other end of the pipes, preferably inside the vent plug, I provide the valves 23, as shown. I also provide said pipes 4 with the compression bulbs 25. If now, the vent passages should become clogged for any cause, pressure upon a bulb 25 will seat the valve 22 and force any air

or gas that may exist in said bulb back into the keg through the valve 23. Upon releasing the bulb 25, the pressure in the keg will close the valve 23, and therefore a partial vacuum will exist in the bulb 25. If now the ports 9 and 10 are brought into register, it is evident since the pressure in the keg is not counterbalanced by any pressure in the bulb 25, that the said keg pressure will force an opening through the vent passages 11, 12 and 13, and again fill the bulb 25 with air or gas. After the vent passages have once been cleared, the filling action will then go on uninterruptedly until the passages become clogged again, when a pressure upon the bulb 25 will again clear said passages. When the bottles are to be disengaged from the filling heads, the latter are turned to the dotted line position shown in Fig. 4, whereupon the ports 9 and 10 being out of register the flow of fluid is cut off.

It is obvious that those skilled in the art may vary the details of construction and the arrangement of parts without departing from the spirit of my invention, and therefore I do not wish to be limited to such features except as may be required by the claims.

What I claim is:

1. In a bottle filling machine, the combination of a faucet adapted to communicate with a barrel; a filling head communicating with said faucet; a vent carried by said filling head and faucet; a connection with said vent adapted to lead into said barrel; a check valve associated with each end of said connection; and a bulb in said connection adapted to create a partial vacuum therein, and to force foam back into said barrel, substantially as described.

2. In a bottle filling machine, the combination of a faucet adapted to be connected with a barrel and provided with an extension; a filling head provided with a sleeve fitting said extension; a vent passage carried by said extension and filling head; a vent plug adapted to connect with said barrel; a pipe connecting said vent plug and vent

passage; a valve associated with each end of said pipe; and a bulb adapted to create a partial vacuum in said pipe and to force foam into said barrel, substantially as described.

3. In a bottle filling machine, the combination of a barrel; a faucet connected with said barrel and provided with an extension; a filling head provided with a sleeve fitting said extension and adapted to oscillate around the same; lugs carried by said extension; a lug carried by said sleeve and adapted to be limited in its motion by said first mentioned lugs; a vent passage carried by said extension and filling head adapted to be controlled by said lugs; a vent plug connected to said barrel; a pipe connecting said vent plug and vent passage; a valve associated with each end of said pipe; and a bulb adapted to create a partial vacuum in said pipe, substantially as described.

4. In a bottle filling machine, the combination of a barrel; a faucet connected with said barrel and provided with a plurality of conical extensions; filling heads provided with oscillating tapered sleeves fitting said extensions; said extensions provided with cut away vent passages and said sleeves provided with passages adapted to move into and out of register with said cut away passages; springs carried by said extensions adapted to normally hold said sleeves to their seats; stops carried by said extensions and sleeves adapted to limit the oscillations of said sleeves; a vent plug connected with said barrel; valved pipes connecting said vent passages and said vent plug; and bulbs carried by said pipes adapted to create partial vacuums in said pipes in order that the pressure in the barrel may be permitted to clear said vents when clogged, substantially as described.

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

THOMAS J. LEVEY.

Witnesses:

T. A. WITHERSPOON,
R. M. PARKER.