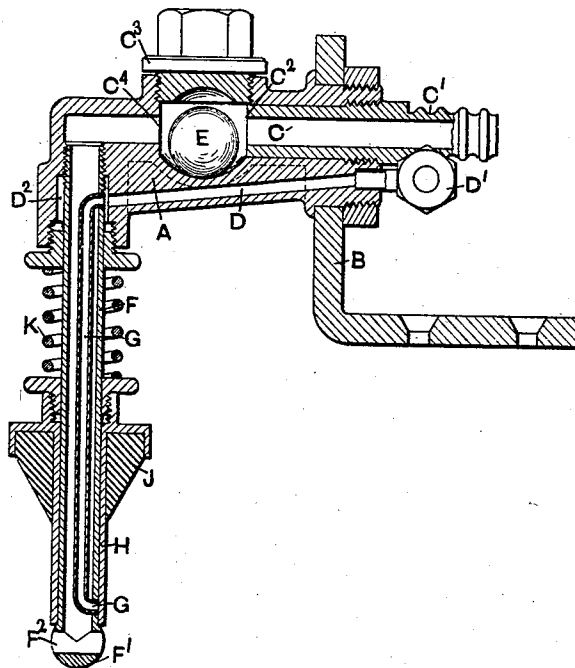


H. L. J. TORPY.
 APPARATUS FOR FILLING BOTTLES WITH AERATED LIQUIDS AND BEVERAGES.
 APPLICATION FILED JUNE 19, 1908.

968,898.

Patented Aug. 30, 1910.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HUBERT LESLIE JOHN TORPY, OF JOLIMONT, MELBOURNE, VICTORIA, AUSTRALIA.

APPARATUS FOR FILLING BOTTLES WITH AERATED LIQUIDS AND BEVERAGES.

968,898.

Specification of Letters Patent.

Patented Aug. 30, 1910.

Application filed June 19, 1908. Serial No. 439,428.

To all whom it may concern:

Be it known that I, HUBERT LESLIE JOHN TORPY, subject of the King of Great Britain, residing at Jolimont Square, Jolimont, Melbourne, in the State of Victoria, Commonwealth of Australia, brewer, have invented certain new and useful Improvements in Apparatus for Filling Bottles with Aerated Liquids and Beverages, of which the following is a specification.

My invention relates to an improved apparatus for filling bottles with aerated liquids, beer, ale, and other beverages under gaseous pressure and particularly beer and other beverages which have been filtered under pressure.

In transferring liquids under pressure from a cistern in which they are contained into bottles it is necessary to maintain what is termed a "counter-pressure"; that is to say, provision is made for an increase of pressure in the bottles approximately equal to the pressure upon the liquid in the cistern before the liquid is allowed to flow to avoid "fobbing" or "frothing" of the liquid. In most of these machines certain mechanical valves are provided by which the gas is first introduced to the bottle and then after the lapse of a certain time the liquid is introduced. The disadvantage of these machines is that the time between the operation of the valves is constant irrespective of the nature of the liquid and the pressure thereon. In some cases it is necessary to employ the operation of "snifting" by which the pressure within the bottles may be slightly reduced to enable the liquids to flow.

The object of my invention is to provide an apparatus applicable to the bottling of either aerated waters or beers or other beverages under pressure of simple and effective construction in which all the parts are easily accessible and in which the simple placing of the bottle in position automatically admits the gas to connect the atmosphere in the bottle with the space above the liquid in the cistern and then automatically admits the liquid as soon as the pressures are equal and further in which means are provided for automatically cutting off both the supply of liquid and gas when the bottle is removed or should it burst or be broken. I accomplish this object by constructing an apparatus for filling bottles in which two separate channels are provided, one for the liquid and one for

the gas, the liquid channel having a ball or other like valve by which the fluid is cut off until the pressures are made equal, the gas channel having a valve which is automatically opened when the bottle is attached thereto and automatically closed when removed therefrom. My invention is applicable to a simple or multiple filling apparatus. As soon as the bottle is placed in position the gas channel is opened and connection is immediately established between the atmosphere in the bottle and the space above the liquid in the cistern while the ball valve in the liquid channel stops the flow of liquid therein so long as the pressure within the cistern is greater than that outside, but when the pressures are equal or approximately so the ball drops and allows the liquid to flow.

In order that my invention may be better understood I will now proceed to describe the same with reference to the accompanying drawings, in which is shown a vertical sectional view of the improved apparatus.

Referring to the drawing, A is a tap casing which is mounted upon a bracket B or other convenient support. Within this casing A are formed two separate and independent channels C and D. The channel C is for the liquid and is provided with a nozzle C' by which it is connected by a hose to the supply cistern below the level of the liquid. The channel D is for the gas and is provided with a nozzle D' by which it is also connected by a hose to the supply cistern above the level of the liquid. The channel C is formed with a recess C² having a cap or plug C³. Within the recess C² is provided a ball E and the exit of the channel C from the recess, as at C⁴, is turned to form a seat for the ball E and thereby close the same and prevent the flow of the liquid. The recess C² is made of such a depth and the ball E of such a size and weight that the ball E will only close the exit C⁴ of the channel C when the pressure on the inside of the cistern is greater than that without while the ordinary flow of liquid does not influence the ball E sufficiently to close the channel C. At the outer end of the channel C is provided a downwardly extending tube F having a knob F' at the bottom and outlets F² for the flow of liquid. The gas channel D delivers at its outer end into an annular space D² surrounding the upper end of the tube F. Communicating from this annular

space D² is a downwardly extending smaller tube G leading to the bottom of the tube F and within the same and discharging through a small hole G' just above the knob F'. Surrounding the tube F is a sleeve H carrying a rubber or other cap J adapted to fit the head of the bottle and held in place by a spring K. The bottom of the sleeve H bears upon the knob F' and thereby closes the gas outlet C' when the same is down.

In practice when the knob F' of the tube F is inserted within the head of the bottle and the same is pressed upward the cap J and sleeve H are raised against the pressure of the spring K and the outlet G' of the gas tube G is uncovered. Communication is thus established through the tube G and the channel D between the interior of the bottle and the space above the liquid within the cistern and the pressures therein are equalized. At the same time while the pressure within the cistern is greater than that within the bottle the ball E within the recess C² of the liquid channel C prevents the flow of the liquid. As soon as the pressures are balanced and a "counter pressure" is established the ball E drops and allows of the liquid flowing into the bottle the gas escaping back into the cistern through the channel D as the same is displaced by liquid. As soon as the bottle is filled and removed the pressure of the spring K causes the sleeve H to move back on its seat on the knob F' and thereby close the gas outlet G' when the pressure being then greater within the cistern the ball E immediately closes the channel C and stops the flow of liquid.

I claim:—

1. An apparatus for filling bottles, comprising a casing having a channel therein for the liquid, said channel being provided with a recessed portion, the bottom of which

extends below the bottom of the channel, said casing being provided with a second channel for the gas, a ball movably positioned within the recessed portion of the first named channel, said first named channel being provided with a seat adapted to be engaged by said ball, and tubes for conducting the liquid and gas from said channels to the vessel to be filled, said parts being so positioned and arranged that the ball will engage its seat and prevent the flow of liquid through the channel when the pressure within the cistern is greater than the pressure in the vessel.

2. An apparatus for filling bottles, comprising a casing having a channel therein for the liquid, said channel being provided with a recessed portion, the bottom of which extends below the bottom of the channel, said casing being provided with a second channel for the gas, a ball movably positioned within the recessed portion of the first named channel, said first named channel being provided with a seat adapted to be engaged by said ball, said casing being provided with an opening registering with said recessed portion, and a closure for said opening, and tubes for conducting the liquid and gas from said channels to the vessel to be filled, said parts being so positioned and arranged that the ball will engage its seat and prevent the flow of liquid through the channel when the pressure within the cistern is greater than the pressure in the vessel.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HUBERT LESLIE JOHN TORPY.

Witnesses:

CLEM. A. HACK,
EDGAR LEMUEL ROSMAN.