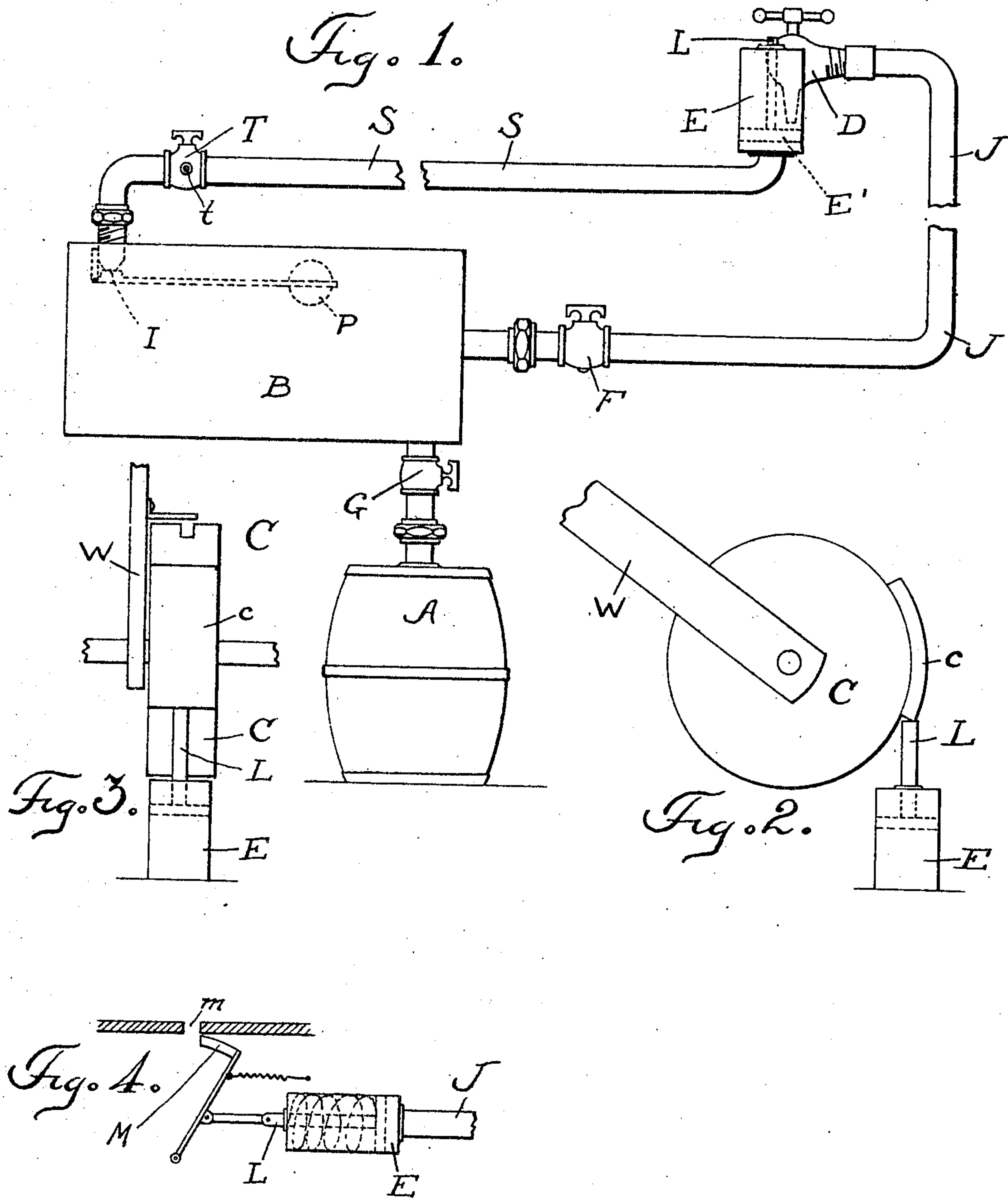


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H. S. CORNISH.
MEANS FOR PREVENTING WASTE IN DISPENSING LIQUIDS.
APPLICATION FILED NOV. 1, 1905.



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UNITED STATES PATENT OFFICE.

HARRY S. CORNISH, OF NEW YORK, N. Y., ASSIGNOR TO NEW YORK LIQUID DISPENSING MACHINE COMPANY, A CORPORATION OF NEW YORK.

MEANS FOR PREVENTING WASTE IN DISPENSING LIQUIDS.

No. 849,462.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed November 1, 1905. Serial No. 285,394.

To all whom it may concern:

Be it known that I, HARRY S. CORNISH, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, (with post-office address 118 West Forty-first street,) have invented certain new and useful Improvements in Means for Preventing Waste in Dispensing Liquids, of which the following is a specification.

My invention relates to apparatus for dispensing liquids such as lager-beer and birch-beer or any carbonated or other drinks under pressure of air or other gas; and the general object of the invention is to prevent the waste which now takes place when a filled receptacle or package is substituted for an empty one. When a barrel of beer, for instance, (usually located in a cellar and connected through a refrigerating coil-box with the faucet above,) runs empty, the connecting-pipes are allowed to fill with air or gas, which causes foam and considerable waste of material after the full barrel is attached before the liquid begins to run properly from the faucet.

The object of my invention is to prevent waste from such cause, which I accomplish by providing means for automatically stopping or preventing the use of the faucet as soon as the original package runs empty, thus making it possible to retain all the liquid in the pipes between the package and the faucet until another package is substituted, so that when the passages are again opened the flow will go on uninterruptedly.

In carrying out this invention I provide, preferably, some means for locking the faucet from operation, and I control the operation of the locking devices by some means which responds to the fall in the level of the liquid within the receptacle. For the sake of convenience I utilize in this operation the pressure of air or other gas which is released from the receptacle or package containing the liquid as soon as the same becomes empty. Preferably, also, I employ a float in the receptacle for positively actuating a valve which controls an outlet communicating with the pipe or passage leading to a cylinder and piston to which the locking device or other means for preventing the operation of the faucet is connected. In addition I may provide means for ringing an electric bell or op-

erating an indicator to give notice to the person using the faucet that it is necessary to substitute another package. Instead of locking the faucet against use any other means may be provided for preventing the use of the same, an example of which would be in the case of a check or coin-controlled dispensing apparatus some means for preventing the insertion of the releasing check or coin into the machine. It will therefore be understood that my invention consists, broadly, in the provision of some means for preventing the use of the dispensing faucet or cock and the actuation or control of such means by devices operated or controlled by change in the level of the liquid, such change being made effective, preferably, through the release of the gas in the receptacle containing the carbonated or other liquid which is kept under pressure.

The invention consists also in the special combinations of apparatus and details of construction for facilitating the operation of substituting one package for another, as hereinafter more particularly described and then specified in the claims.

Referring to the accompanying drawings, Figure 1 is a general elevation of a liquid-dispensing apparatus embodying my invention. Fig. 2 illustrates a modification in which the lock is applied to the coupling-disk of a check or coin controlled liquid-dispensing apparatus. Fig. 3 is an edge view of the same devices. Fig. 4 shows means for closing the slot of a coin or check controlled apparatus to prevent the use of the dispensing devices when the contents of the package or receptacle are used up.

A indicates the barrel or other receptacle containing liquids, such as beer, which is dispensed under the pressure of air or carbonated gas through a faucet or other dispensing device, (indicated at D,) the latter being connected with the receptacle or package A through a suitable pipe J. To facilitate the substitution of full for empty packages without disconnecting the automatic appliances forming my invention, I prefer to employ a supplemental liquid-containing chamber B, with which the receptacles A may be coupled in the same way that they are ordinarily coupled direct to the pipe leading to the faucet.

G indicates the usual stop-cock in the con-

nection to chamber B, by opening which the liquid is allowed to flow after the receptacle A has been coupled up to the chamber B.

L indicates a lock or stop which is normally out of the path of the moving parts of the faucet D, but which may be thrown into the path of the same to lock the faucet against use. The stop is operated by any form of liquid-pressure device adapted to be actuated by pressure of air or gas—as, for instance, by means of piston E', working in a cylinder E and carrying the lock or stop L on its piston-rod. In the chamber B is a suitable float-operated valve, the float of which is indicated at P, while the valve operated by said float is indicated at I. Said valve when opened permits the air or gas under pressure to flow from chamber B into and through the pipe S, which is connected with the cylinder E. So long as there is liquid coming from the package float P is raised and the valve I is closed; but when the float falls the air or gas under pressure is permitted to pass through pipe S to operate the lock or stop L and throw the dispensing devices into inoperative condition. In the connection S is a stop and vent cock T of usual construction, the vent of which is indicated at *t*, and which cock is adapted in one position to vent the pipe S, but in the other condition or position closes the vent and establishes the connection from the chamber B to the cylinder E. The use of this device will be described in setting forth the general operation.

At F is located a stop-cock in the supply-pipe leading to the faucet, which cock may be closed to retain the liquid therein during the change from an empty to a full package. While the apparatus is in use for drawing liquid from receptacle A, the cocks F and T are turned to establish recommunication through the pipes in which they are located. So long as there is liquid coming from the package A the float-valve will be raised and gas under pressure cannot pass to the pipe S. When the package empties, however, the float-valve immediately drops, and then gas can pass to the cylinder E, thus forcing the dog or lock L into position to lock the faucet D, so that the same cannot be opened to draw any more liquid from the pipe J. As will be presently described and indicated, an indicator may be operated, a bell rung, or other operations performed to give notice at the same time. By now closing the cock F the liquid in the pipe J will be retained and by closing the cock G all of the devices operated by the gas-pressure released through the action of the float-valve will be retained in position. A new package or receptacle A may be now substituted and the cocks F and G opened. Then by turning the valve T to vent the gas-pressure in pipe S the valve I will be permitted to close and

the piston E' will be permitted to drop by gravity or spring-pressure, so as to release the faucet D or other dispensing device. The flow of liquid may be then resumed without the usual waste. After venting the pipe S the stop-cock T is turned back to its normal position, establishing communication between valve I and the cylinder E, ready for the automatic operation when the fluid contents of the receptacle becomes spent.

In Figs. 2 and 3 I show one of the ways in which my invention may be applied to a coin or check controlled apparatus. In these figures, C indicates a coin-receiving coupling-disk for coupling a manual actuating-lever with the dispensing-faucet after a coin has been inserted and in the manner set forth in patent to J. P. Muth, dated June 14, 1904, No. 762,429. W indicates the operating-handle. Upon the edge of the disk C is fixed a shoulder or stop *c*. In normal operation of the apparatus the dog or lock L is withdrawn out of the way of the stop *c*, so that the coupling-disk may be turned for the purpose of operating the faucet to which it is connected. The dog or lock L is, however, moved up into position to lock the disk C from movement as soon as the package becomes empty and the air or gas pressure is permitted to act upon the piston carrying the dog L, as already described.

As indicated in Fig. 4, a guard or blocking plate M might be arranged beneath the coin-slot *m* and actuated through suitable connections with the piston in the cylinder E for the purpose of preventing the insertion of the controlling check or coin. The manner of operation and result would be substantially as already described, the said blocking-plate M preventing the use of the faucet as soon as the emptying of the receptacle permits the air or gas pressure to act on the piston E.

I do not limit myself to any particular form of valve or means for engaging the same, nor do I confine myself to any particular way of releasing air or gas-pressure from the liquid-containing receptacle or package for the purpose of throwing the dispensing apparatus out of operative condition as soon as the liquid in the receptacle is used up.

What I claim as my invention is—

1. The combination of a receptacle containing a liquid under gas-pressure, a faucet for dispensing the liquid, a lock for preventing use of the faucet and means for operating the lock by the gas-pressure when the level of the liquid falls, as and for the purpose described.

2. The combination of a receptacle containing a liquid under gas-pressure, a faucet for dispensing the liquid, means actuated by the gas-pressure for preventing use of the faucet and a stop-cock in the faucet-supply pipe, as and for the purpose described.

3. The combination of a receptacle containing a liquid under gas-pressure, a faucet, means actuated by the gas-pressure for preventing use of the faucet, and a gas stop and vent in the pipe through which the gas-pressure acts.

4. In an apparatus for dispensing liquids under pressure from original packages, the combination of a faucet through which the liquid is discharged, a liquid-containing chamber with which the packages may be coupled, a float-valve in said chamber and means actuated by the gas-pressure freed by said valve for preventing use of the faucet.

5. In an apparatus for dispensing liquids from original packages, a liquid-containing chamber with which said packages may be coupled at will, a faucet connected to said chamber, a float-valve in said chamber and means controlled by said valve for preventing use of the faucet.

6. In an apparatus for dispensing liquids, a receptacle and faucet, a liquid-containing chamber located between the receptacle and liquid-faucet, a float-valve in said chamber, a cylinder and piston actuated by gas-pressure

released by said float-valve and a lock actuated by said piston, as and for the purpose described.

7. The combination of a package containing a liquid under gas-pressure, a faucet through which the liquid is dispensed and means actuated by the gas-pressure released through emptying of the package for preventing use of the faucet.

8. The combination of a liquid-containing receptacle, a faucet for dispensing the liquid, and means responsive to a fall in the liquid-level for preventing the use of the faucet.

9. The combination of a receptacle containing a liquid under pressure, a faucet for dispensing the liquid, a lock for preventing the use of the faucet and means responsive to change in the level of the liquid for operating the lock.

Signed at New York, in the county of New York and State of New York, this 12th day of October, A. D. 1905.

HARRY S. CORNISH.

Witnesses:

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LILLIAN BLOND.