(No Model.)

W. E. GALLAGHER.

BOTTLE FILLING MACHINE.

No. 536,989. Patented Apr. 2, 1895.

Fig. 1.

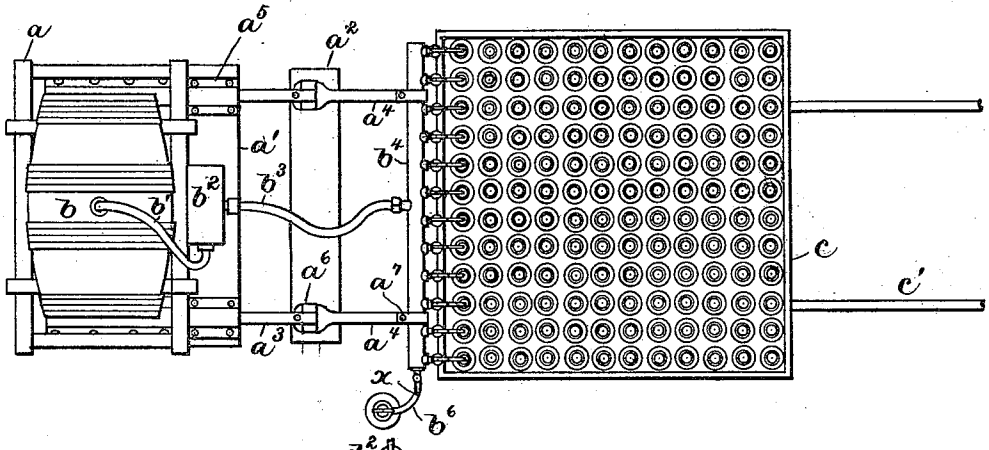


Fig. 2.

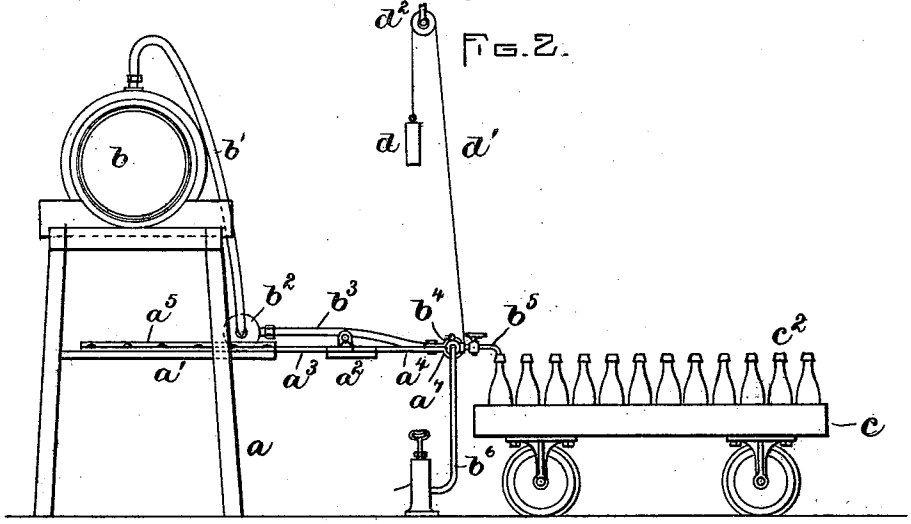


Fig. 3.

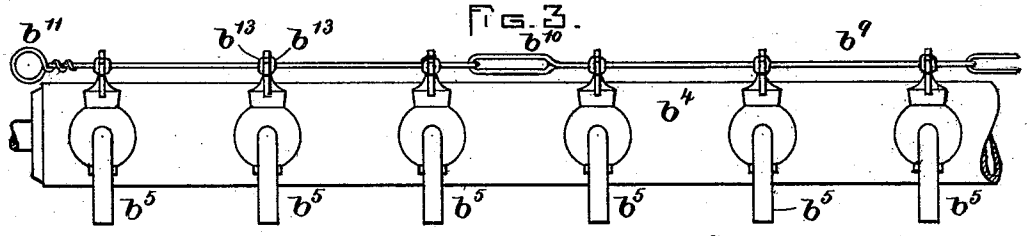
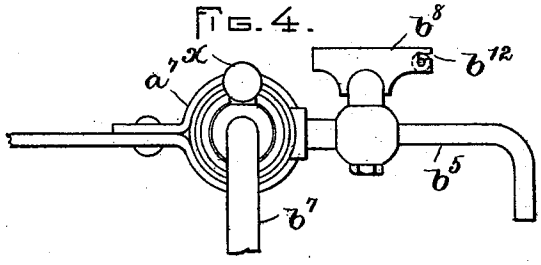


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM E. GALLAGHER, OF SOUTH FRAMINGHAM, MASSACHUSETTS.

BOTTLE-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 536,989, dated April 2, 1895.

Application filed July 5, 1894. Serial No. 516,555. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. GALLAGHER, of South Framingham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Bottle-Filling Machines, of which the following is a specification.

My invention relates to an improvement in bottle-filling machines, and has for its object to provide means whereby a series of rows of bottles may be quickly and economically filled.

My invention consists in certain novel features of construction and arrangement of parts which will be fully hereinafter described and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings and the characters marked thereon, which form a part of this specification, like characters designating like parts or features, as the case may be, wherever they occur.

In the drawings,—Figure 1 is a top plan view of my device. Fig. 2 is a side elevation thereof. Fig. 3 represents faucet handles provided with my improved locking mechanism. Fig. 4 is a detail view.

a represents a beer-rack of ordinary form and construction. It is provided at a suitable distance from the top with a board or frame, a', rigidly secured to the rack in a horizontal position, as shown in Fig. 2. This frame is provided upon its upper side with retaining guide-ways, a^5. In these guide-ways sliding arms, a^3, are mounted. At their outer ends the sliding arms, a^3, are secured to a strip, a^2, of wood or other suitable material. Preferably the outer ends of the sliding arms, a^3, form one of the parts of a hinge joint, a^6, and are rigidly secured to the strip, a^2.

a^4 represents hinged arms, one of their ends forming a part of the hinge joint, a^6, while to their other end by straps, a^7, is secured the delivery pipe, b^4.

b is the barrel or main reservoir containing beer or other liquid to be bottled; b', the pipe leading from the bottom of the barrel to an auxiliary reservoir, b^2, resting on the frame, a', or any other suitable support. From this reservoir, b^2, a pipe, b^3, leads to the delivery pipe, b^4. The auxiliary reservoir, b^2, is provided to keep a constant flow in the delivery pipe in case of momentary chokage or disturbance in the pipe, b'.

It will be seen that the arrangement of the pipes, b', b^3 and the delivery pipe, b^4, is that of a siphon. In order to start the liquid, I provide the end of the delivery pipe, b^4, with a pipe connection, b^6, controlled by a faucet, x. This pipe, b^6, is connected with an ordinary air-pump for starting the flow of the liquid, as will be understood. When the delivery pipe is filled and the siphon in operation, the faucet, x, is turned, closing the pipe, b^6.

The delivery pipe, b^4, is provided at suitable points with filling faucets, b^5. In the arrangement shown in the drawings the faucets leave the pipe on a horizontal line and are provided at the extremity with a downwardly projecting snout to enter the bottles.

The handles, b^8, of the faucet plugs are provided with an L shaped groove, b^{12}, in which a wire, b^9, is placed. These handles are secured to the wire by means of nuts or washers, b^{13}.

In my machine as illustrated, I have shown twelve filling faucets, although any other number might be used. It will be seen that by means of the wire, b^9, secured to the handles of the faucet plugs, I am enabled to open and close all of the plugs simultaneously by pulling upon a loop or other finger piece, b^{11}, at either end of the wire.

It is sometimes convenient to operate less than the whole number of faucets, as for instance, where the faucets are employed for filling bottles of different capacity. In such a case, it becomes necessary to close part of the faucets independently of the others. To accomplish this, I have provided the mechanism shown in Fig. 3, which illustrates faucets arranged in sets of three, although a different number could conveniently be used. Each set of faucets is provided with a separate wire, the wires of the two sets being joined together by loops, b^{10}.

The faucets in Fig. 3 are represented as closed. Now, by pulling the wire by means of the finger-piece b^{11}, all of the faucets will be opened. The play in the loops, b^{10}, will be sufficient for the left-hand set of three faucets to be closed by pulling on its wire without affecting the right hand set.

In practice, I employ twelve faucets, joined together as shown in Fig. 3, in a series of six each, each series being separate from the other; that is,—the wire, b^9, of one series not being connected with the wire b^9, of the other series. This permits me to operate the two series independently of each other.

d is a weight connected by a cord, d', passing over a pulley, d^2, with the delivery pipe, b^4. This is designed as a counter-poise for the pipe so as to retain it in any position in which it may be turned on its hinged connection, a^6.

From the foregoing it will be seen that by means of the sliding arms, a^3, and the other connecting parts the delivery pipe may be moved out and in over a series of bottles, c^2, contained in the frame, c, mounted on suitable trucks or rollers, and by means of its hinged connection can be lowered and raised into and out of each series of bottles. The pipe, b^3, is made of sufficient length to permit the delivery pipe, b^4, to be extended over the series of bottles.

The cask being full of beer and the siphon charged, as hereinbefore described, the operation of my bottle filling machine is as follows: In normal position the arms, a^4, are kept nearly vertical for convenience. The tray, c, is rolled up to the machine, the delivery pipe is pulled down, the filling nozzles entering the mouths of the bottles. Now, by pulling upon the wire, b^9, all of the faucets will be opened, and the bottles filled simultaneously. When the bottles are filled all of the faucets are closed simultaneously by pulling the wire, b^9. The arms, a^4, and the pipe, b^4, are then raised out of the bottles, when by means of the sliding arms, a^3, the strap, a^2, the pipe, a^4, and its filling faucets, b^5, are pulled out over the next series of bottles. This operation is continued until all of the bottles are filled.

Having thus explained the nature of my invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim, and desire to secure by Letters Patent, is—

1. In a bottle-filling machine, in combination, a main reservoir, a siphon, a delivery pipe provided with filling faucets, a frame, a', provided with ways, a^5, the strip, a^2, provided with arms slidable in said ways and also provided with hinged arms, a^4, the outer ends of which support said faucet-provided delivery pipe, substantially as and for the purpose described.

2. In a bottle-filling machine, in combination, a main reservoir, a siphon, a delivery pipe provided with filling faucets, a frame, a', provided with ways, a^5, the strip, a^2, provided with arms slidable in said ways and also provided with hinged arms, a^4, the outer ends of which support said faucet-provided delivery pipe, and means for operating said faucets in series, substantially as and for the purpose described.

3. In a bottle filling machine, in combination, a main reservoir, a delivery pipe, a siphon connection between the reservoir and the pipe, means to give the delivery pipe a sliding and a hinged movement, filling faucets connected with said delivery pipe, and means for operating said faucets in series, substantially as and for the purpose described.

4. An improved means for operating faucets in series comprising in its construction the handles of the faucets composing said series provided with L-shaped slots, and a wire secured in said slots by nuts or washers, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 23d day of June, A. D. 1894.

WILLIAM E. GALLAGHER.

Witnesses:
C. F. BROWN,
WILLIAM QUINBY.