(No Model.)

R. SHAY.

BOTTLING MACHINE.

No. 324,494. Patented Aug. 18, 1885.

Fig. 1.

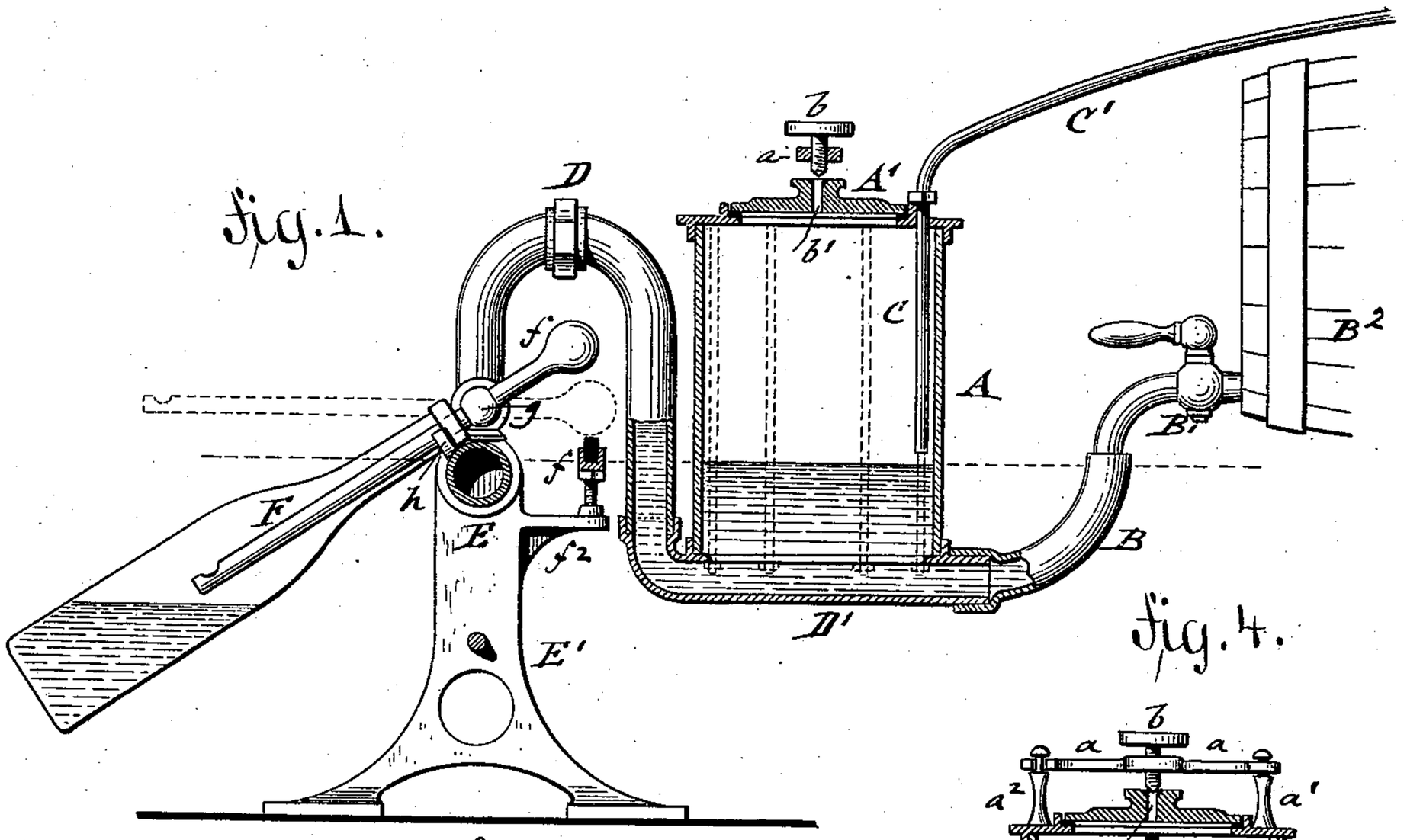


Fig. 4.

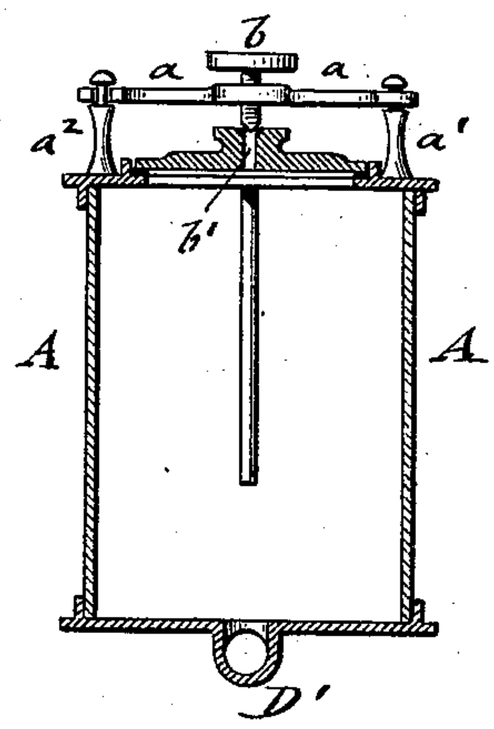


Fig. 2.

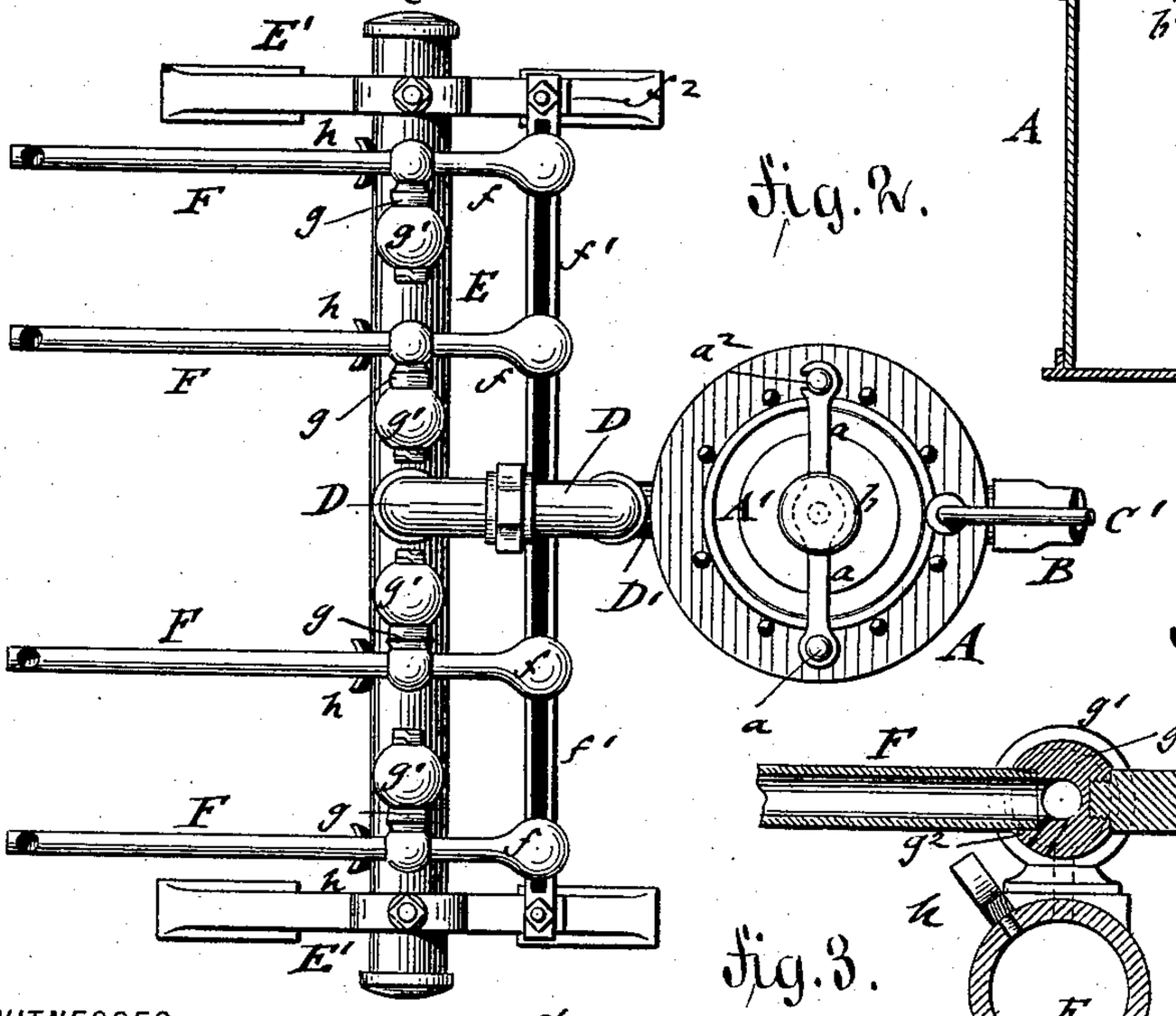
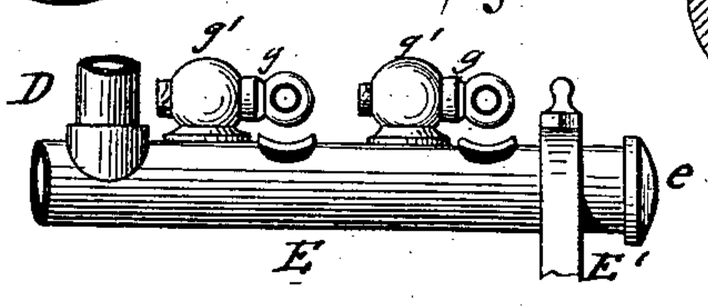


Fig. 5.

Fig. 3.



WITNESSES

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BOTTLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 324,494, dated August 18, 1885.

Application filed June 19, 1885. (No model.)

To all whom it may concern:

Be it known that I, RICHARD SHAY, of the city, county, and State of New York, have invented certain new and useful Improvements in Bottling-Machines, of which the following is a specification.

This invention relates to a bottling-machine by which bottles can be filled accurately to a certain level without spilling and without requiring special vent-valves and collecting-troughs; and the invention consists of the combination of a receiving-vessel which is located intermediately between the barrel and the filling-tubes and connected to the barrel by a vent-tube that communicates with the bung-hole or other vent-opening, and by a supply-tube with the discharge-faucet of the barrel. The receiver is provided with a detachable lid having a vent-opening and a screw-plug for opening or closing said vent-opening. The bottom of the tank or receiver is connected by a siphon to a horizontal distributing-tube that is supported at or about the level of the lower end of the vent-tube, said distributing-tube having a series of valved oscillating filling-tubes which are pivoted to valve-casings of the distributing-tube.

In the accompanying drawings, Figure 1 represents a vertical transverse section of my improved bottling-machine on line *x x*, Fig. 2. Fig. 2 is a plan of the same; and Figs. 3, 4, and 5 are details.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents a tank or receiver, which is made of glass or other suitable material and covered by a detachable lid, A′, that may be closed tightly by means of a bail, *a*, having a central screw, *b*. The bail *a* is pivoted to a stud, *a′*, of the ring-shaped support of the lid A′, and adapted to engage a stud, a^2. The screw *b* of the bail has a conically-tapering end and fits on the conically-tapering seat of a vent-hole, *b′*, of the lid A′, so that the vent-hole *b′* may be closed hermetically or opened to admit atmospheric air to the receiver, according as the screw *b* is raised or lowered, as shown in Figs. 1 and 4. The receiver A is connected at its bottom, by a tube or hose, B, with the cock or faucet B′ of the keg or barrel B^2, and also, by a vent-tube, C, and tube or hose C′, with the bung-hole or other vent-opening of the barrel B^2. The vent-tube C extends downward into the tank or receiver A, the lower end of the tube C being on a level with the maximum height to which the bottles are to be filled. A siphon-tube, D, communicates with a diametrical trough or depression, D′, at the bottom of the receiver A, said trough forming a direct connection between the supply-tube B and the siphon D. The opposite end of the siphon-tube D is connected to a horizontal distributing-tube, E, the ends of which are closed by screw-caps *e e*. The horizontal distributing-tube E is supported on standards E′ at or about the level of the lower end of the vent-tube C of the receiver A, and provided with a number of oscillating filling-tubes, F, having weighted upper ends, *f*, which move the filling-tubes F in horizontal position, as shown in dotted lines in Fig. 1, when the bottles are removed. In this position the weighted ends *f* of the filling-tubes F rest on a rubber cushion of a transverse supporting-bar, *f′*, that is supported parallel to the tube E on backwardly-extending brackets f^2 of the standards, as shown in Figs. 1 and 2. The filling-tubes F are applied by lateral plugs *g*, which turn in vertical valve-casings *g′* of the horizontal tube E, said valve-casings communicating with the tube E, and the plugs *g* by bore-holes g^2 with the filling-tubes F. The bore-holes g^2 coincide with the openings of the valve-casings whenever the filling-tubes are moved into inclined position by the weight of the bottles placed thereon, as shown in Fig. 5. When the bottle is removed the filling tube is returned into horizontal position by its weighted end and the communication of the filling-tube with the casing *g′* interrupted. The horizontal distributing-tube E is provided below the filling-tubes F with fixed fork-shaped bottle-rests *h*, which, in connection with the filling-tubes, support the bottles at their necks without requiring any shelf or tray for supporting the bottoms of the bottles. This simplifies the construction of the machine considerably.

The operation of the machine is as follows: For starting the machine the bottles are placed on the filling-tubes, after which the screw-plug *b* is screwed down on the lid, so as to tightly close the vent-opening of the same and press the lid hermetically on the receiver. The

liquid is then allowed to enter into the receiver by opening the faucet B′, the liquid rising in the receiver and compressing the air at the upper part of the same, so as to cause the liquid to pass through the siphon D, distributing-tube E, and filling-tubes F, and force out the air contained therein. As soon as the liquid spurts from the openings of the filling-tubes F the vent-hole *b′* is opened, so that the liquid in the receiver is exposed to atmospheric pressure while the siphon begins to act. By the siphoning action of the column of liquid in the siphon-tube the bottles are filled until the liquid rises in the necks of the same to the same level as the liquid in the receiver, beyond which level the liquid in the bottle-neck can never rise. When the liquid in the receiver rises to such a height that it closes the vent-tube C, the supply of liquid from the barrel is interrupted. When the level of liquid in the receiver falls by the filling of the bottles, a new quantity of liquor is supplied from the barrel to the receiver. When the bottles are filled up to the level of the liquid in the receiver, they are removed from the filling-tubes by disengaging their necks from the forked bottle-rests, after which the filling-tubes are returned by their weighted ends into horizontal position, so as to close by the plugs *g* the valve-casings *g′*. As long as the bottles are not entirely filled the liquid flows from the barrel into the tank or receiver, while, when all the bottles are filled, the level of liquid rises in the receiver until the mouth of the vent-tube C is closed and the flow of liquid from the barrel is stopped. In this manner the bottles are filled and the flow of liquid automatically interrupted or continued, without any spilling of liquid; by the joint action of the siphon and the vent-tube connection of the receiver with the barrel.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a receiver, a pipe connecting the bottom of the same with the faucet of the barrel, a vent-tube connecting the receiver with the bung-hole or vent of the barrel, a tightly-closing lid having a vent-hole and a screw-plug for opening or closing said vent-hole, a horizontal distributing-tube arranged at or about the level of the lower end of the vent-tube, a siphon connecting the bottom of the receiver with the distributing-tube, and a number of valved filling-tubes communicating with said distributing-tube, substantially as set forth.

2. The combination of a receiving-vessel having a bottom with a diametrical trough or depression, a tightly-closing lid, having a vent-hole and a screw-plug for opening or closing said vent-hole, a pipe for connecting the bottom of the receiver with the faucet of the barrel, a vent-tube connecting the receiver with the vent of the barrel, a horizontal distributing-tube arranged at or about the level of the lower end of the vent-tube, a siphon connecting the bottom of the receiver with said distributing-tube, and a series of oscillating filling-tubes pivoted to valve-casings of the distributing-tube, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

RICHARD SHAY.

Witnesses:

PAUL GOEPEL,

SIDNEY MANN.