A. CHRISTIN.

BOTTLING MACHINE.

No. 186,798. Patented Jan. 30, 1877.

Fig: 1.

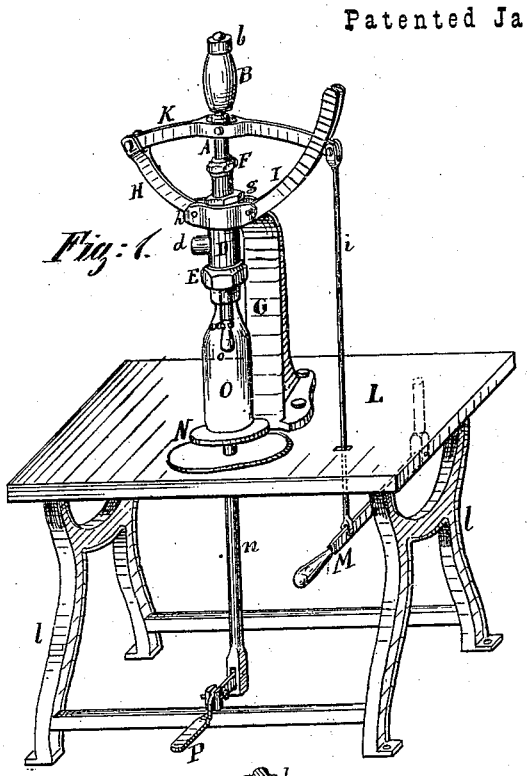


Fig: 2.

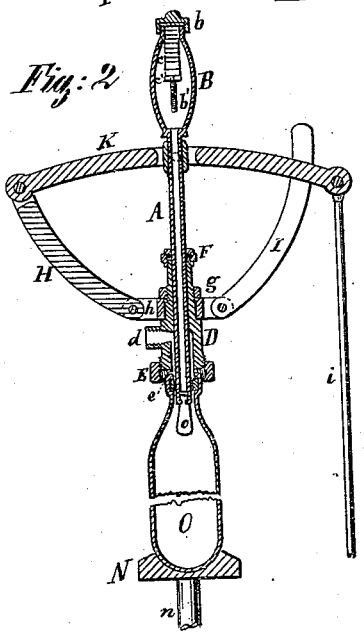
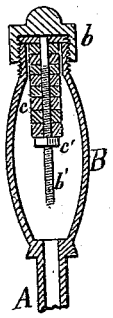


Fig: 3.



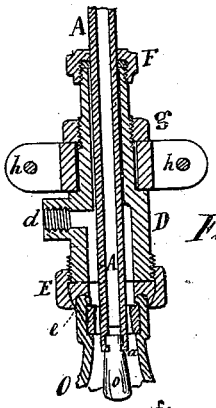


Fig: 4.

Witnesses
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UNITED STATES PATENT OFFICE.

ARTHUR CHRISTIN, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN BOTTLING-MACHINES.

Specification forming part of Letters Patent No. **186,798**, dated January 30, 1877; application filed January 8, 1877.

To all whom it may concern:

Be it known that I, ARTHUR CHRISTIN, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Bottling-Machine, of which the following is a true and accurate description, reference being had to the accompanying drawing, in which—

Figure 1 is a perspective view of the bottling-machine; Fig. 2, a longitudinal section of the same; and Figs. 3 and 4 are detached sectional views on an enlarged scale.

The nature of my invention relates to an improvement in bottling-machines of that class that are more especially to be used in bottling mineral waters and other gaseous fluids under pressure; and it is particularly designed to be used in connection with the bottle-stopper for which Letters Patent of the United States were granted to me on April 13, 1875, No. 161,863; and my improvement consists in a tube provided on its bottom end with a pair of hooks, for grasping the glass stopper at the notches provided therein, and ending on its top with an air-chamber of adjustable capacity, as a receptacle for the air displaced from the bottle while being filled; also, in a stationary barrel, through which said tube has a vertical motion, forming on its bottom a rubber-lined inverted funnel, for receiving the bottle-mouth, and making an air-tight joint therewith, while its top end, by means of a stuffing-box or packing-nut, will make an air-tight joint around the tube; and, furthermore, it consists in the construction and arrangement of the whole machine.

A is a tube, having on its bottom end two inward hooks, *a*, of such dimensions as to correspond with the notches in the glass stopper *o*. To the top of said tube is secured an egg-shaped air-chamber, B, with an open top, closed by a nut, *b*, having a pending screw-stem, *b'*, upon which a series of washers, *c*, are secured by a nut, *c'*. By putting on more or less washers the capacity of the air-chamber is diminished or increased, as may be necessary for bottles of different size. The tube A passes through a metal barrel, D, which is bored out to correspond with the exterior diameter of the tube, except its lower part, which has a larger bore, so as to form a ring-chamber around said tube, which communicates with a rectangular branch, *d*, screw-threaded for a hose or pipe connection with the generator. The lower end of the barrel is lined with a funnel-shaped rubber ring, *e*, secured in its place by nut E, to form a tight joint with the bottle-mouth, and the upper end is closed air-tight around the tube A by a packing-nut, F. Said barrel D is supported by an iron standard, G, the upper end of which is overhanging, and forms an eye, into which the barrel is inserted and secured against a shoulder by a nut, *g*. To both sides of said eye are cast bifurcated flanges *h*, one to form the pivot for a link, H, and the opposite one for securing therein two guide-bars, I. To the upper end of the link H is pivoted the end of a lever, K, the other end of which, passing through the guide-bars I, is pivoted to the connecting-rod *i*, while the center of said lever forms a loop, which surrounds the tube A, and, by means of two set-screws, is pivoted thereto. The foot-plate of the standard G is bolted upon a table, L, resting upon legs *l*. Underneath this table is pivoted the rear end of lever M, the front end of which is shaped as a handle, and projects from under the table. The connecting-rod *i* passes through a hole in the table, where its lower end is connected to the lever M, by means of which the tube A can be raised and lowered. A round plate, N, the top face of which is shaped in conformity with the bottom end of a bottle, O, and which is secured to the top of a standard-bar, *n*, passed through a hole in the table and guided therein, is central in line with the tube A. The lower end of the bar *n* is connected to the end of a foot-lever, P, which, in its center, is pivoted upon a beam between the table-legs *l*. By means of this arrangement the bottle O is lifted and its mouth pressed into the funnel-shaped end of the barrel D.

The *modus operandi* for charging bottles with my machine is as follows, viz: The bottle is turned upside down, so as to get a hold of the stopper, the recesses in which are placed in between the hooks *a* on tube A, and the bottom of the bottle is placed upon the plate N. Now, by setting the foot upon the lever P the bottle is raised, and its mouth is pressed against the funnel-shaped rubber ring *e* of

barrel D, when the stopper becomes suspended in the neck of the bottle. A sufficient quantity of gaseous liquid now being admitted through branch *d*, it will flow into the bottles around the outer surface of the tube A, while the air displaced from the bottle will rise into the tube A and chamber B, which is to be adjusted to such a capacity that the displaced air will compress therein to the same density as the gases have which come from the generator, so that no carbonic-acid gases will escape, since the specific gravity of these gases is larger than the specific gravity of the atmospheric air. After the bottle is so filled the hand-lever M is raised, which motion will draw the glass stopper to its seat in the bottle-neck. Now, by releasing the lever P for removing the bottle, the compressed air will discharge, when the same operation may be repeated with the next bottle. By the easy escape of the air from the bottle during the charging of the same, the filling of bottles is accomplished by the operator at such a speed that one man can fill twenty-four bottles in one minute and a half, and without any waste of gas or liquid.

The air-chamber B can be successfully applied also with bottling-machines in which the common cork stopper or any other patent stopper is used.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The tube A, with hooks *a*, and air-chamber B, constructed substantially as described, and for the purpose specified.

2. In combination with the tube A and chamber B, a barrel, D, having a packing-nut or stuffing-box, F, substantially as described and shown.

3. In combination with the tube A, hooks *a*, and air-chamber B, the barrel D, rubber ring *e*, packing-nut F, and branch *d*, substantially as described and shown.

4. The tube A, in combination with the barrel D, standard G, link H, lever K, rod *i*, and lever M, to operate substantially as described and specified.

ARTHUR CHRISTIN.

Witnesses:
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