(No Model.)

J. K. NYE.

BOTTLING MACHINE.

No. 339,111. Patented Mar. 30, 1886.

Fig. 1.

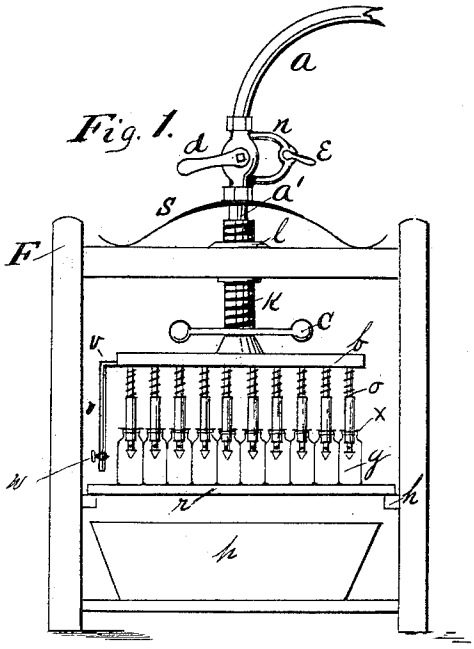


Fig. 2.

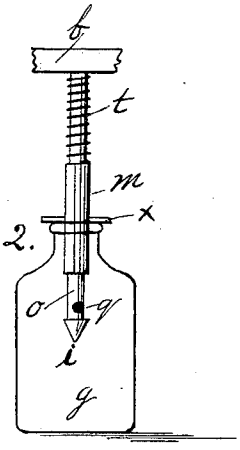
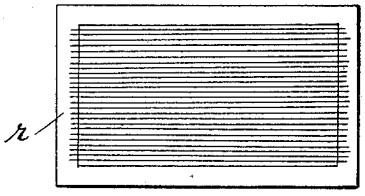


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

JOSEPH K. NYE, OF FAIRHAVEN, MASSACHUSETTS.

BOTTLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 339,111, dated March 30, 1886.

Application filed December 7, 1885. Serial No. 184,902. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH K. NYE, a citizen of the United States, residing at Fairhaven, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Bottling-Machines, of which the following is a specification.

Heretofore in bottling-machines which are designed to fill a number of bottles at the same time there have been no means provided to fill the bottles to the same uniform level when the bottles vary in capacity, which they always do in a greater or less degree.

The object of my improvement is to provide a machine by means of which a number of bottles can be filled at the same time and to the same uniform level, although varying somewhat in capacity. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the machine, and Fig. 2 is an enlarged view of a portion of the filling-chamber with one of the filling-tubes attached and entering the mouth of a bottle in the position it occupies when in operation.

In Fig. 1 the frame F is provided with the nut *l*, in which works the hollow screw *k*. The screw is provided with the handles *c*, by means of which it is revolved.

Through the hollow screw *k* passes loosely the pipe *a'*, the upper end of which is provided with the cock *d*, which is connected with the supply-pipe *a*. The supply-pipe *a* is either flexible or is so arranged that it may have a vertical motion. The pipe *a'* is suspended by means of the spring *s*. To the lower end of the pipe *a'* is attached the chamber *b*, which is furnished with a number of filling-tubes, *o*, equal to the number of bottles it is desired to fill at one time. The filling-tubes consist of the tubes *o*, having the orifices *q* and provided with the heads *i*, springs *t*, and sleeves *m*, with projections *x*. The cock *d* is provided with a small pipe, *n*, connecting the space above and below its valve, which pipe is provided with a cock, *e*.

The operation of the machine is as follows: A number of bottles corresponding with the number of filling-tubes are placed on the rack *r*, which is then moved on the slides *h* until the mouths of the bottles are just under the ends of the filling-tubes. The chamber *b*, to which the filling-tubes are attached, is then depressed by the hand until the ends of the tubes enter the mouths of the bottles, when the hollow screw *k* is brought into requisition to still further depress the chamber *b* until the projections *x* on the sleeves *m* bring up on the mouths of the bottles, and the sleeves *m* are forced upward on the tubes *o* sufficiently to expose the orifices *q*. The cock *d* is then opened, when the liquid flows from the supply-pipe through the pipe *a'* into the chamber *b*, and from the chamber *b* into each of the filling-tubes, and through the orifices *q* into the bottles *g*. The filling-tubes are projected into the bottles far enough so that the orifices *q* shall be below the level to which it is desired to fill the same. When the bottles are nearly full, the cock *d* is closed and the cock *e* opened, by means of which the flow of liquid is more finely graduated, and the bottles are filled to the required level without danger of running them over or getting too large a quantity in them. When the bottles are filled to the desired level, the cock *e* is closed. Now, if the bottles were all of exactly the same capacity, the liquid would be at the same uniform level in each; but they are not. They always vary in capacity more or less, and consequently when the cock *e* is closed some of the bottles will be nearer full than others; but as soon as the flow ceases the liquid in the bottles begins to seek a uniform level, for each one of the filling-tubes acts as one leg of a siphon with reference to every other filling-tube, and the liquid in the bottles is brought to the same uniform level in a moment. The hollow screw *k* is then revolved by means of the handles *c* in an opposite direction, when the tubes and chamber are raised by the action of the spring *s*. The bottles are then removed to be corked, and a supply of empty ones substituted in their place to be filled. A receptacle, *p*, is placed under the rack *r*, to catch any drip which might take place from accident or carelessness.

Instead of the spring *s* for raising the chamber and tubes clear from the bottles, a lever and weight, or a cord, pulley, and weight, might be used without departing from my invention; also, instead of using the hollow screw

k for depressing the chamber and tubes, a lever might be used without altering materially my invention.

The chamber *b* is provided with a draw-off tube, *v*, which tube is furnished with a stop-cock at its lower end. When, from the inattention of the operative, the bottles are filled to a higher level than is desired, the surplus can be drawn off by opening the stop-cock in the tube *v*, the tube *v* acting as the long leg of a siphon with reference to the tubes *o*.

In Fig. 3 is shown the construction of the rack *r*, which is composed of wires stretched on a frame. The wires are placed sufficiently close together to steadily support the bottom of a bottle. The rack *r* is constructed in this manner in order that when, as frequently happens, a bottle is cracked and leaks the liquid may drop immediately to the pan below without wetting the adjoining bottles.

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

1. In a bottling-machine, the combination of the supply-pipe *a*, cock *d*, having pipe *n* with cock *e*, pipe *a'*, chamber *b*, provided with tubes *o*, with means to adjustably suspend the same, substantially as and for the purpose described.

2. In a bottling-machine, the combination of the supply-pipe *a*, cock *d*, pipe *a'*, chamber *b*, tubes *o*, having orifices *q* and heads *i* and provided with springs *t*, and sleeve *m*, having projections *x*, and means to adjustably suspend the same, with hollow screw *k* and nut *l*, substantially as and for the purpose described.

3. In a bottling-machine, the combination of the supply-pipe *a*, cock *d*, pipe *a'*, chamber *b*, provided with tubes *o*, the draw-off tube *v*, having stop-cock *w*, with means to adjustably suspend the same, substantially as and for the purpose described.

4. In a bottling-machine, the combination of the supply-pipe *a*, cock *d*, pipe *a'*, chamber *b*, provided with tubes *o* and draw-off tube *v*, and means to adjustably suspend the same, with rack *r*, substantially as and for the purpose shown and described.

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Witnesses:
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