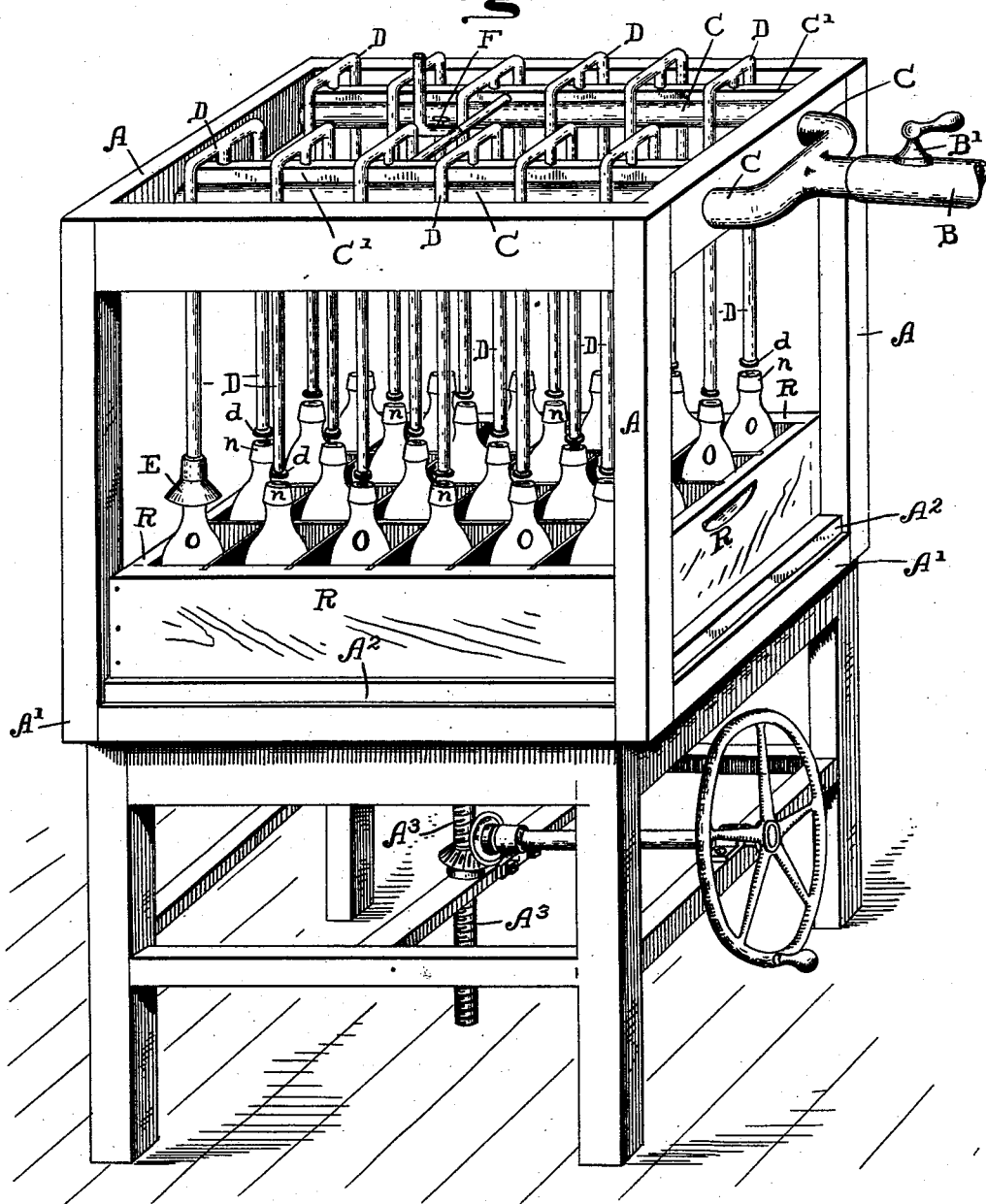


H. WUELFING.
BOTTLING MACHINE.

No. 523,392.

Patented July 24, 1894.

Fig. 1.



WITNESSES:

J. H. Warner
J. A. Walsh

INVENTOR

Hugo Wuefing,

BY

Chester Bradford,
ATTORNEY.

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Fig. 2.

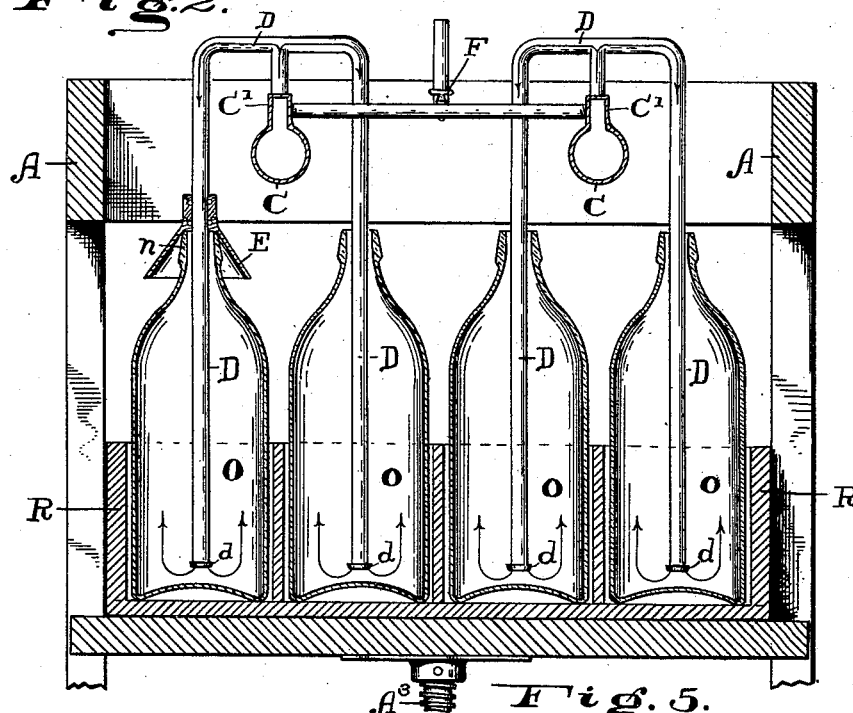
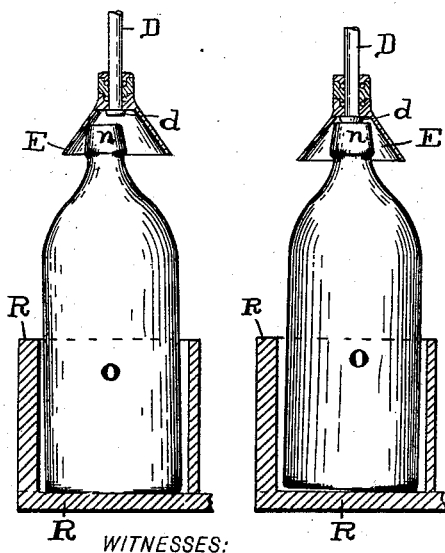


Fig. 3. Fig. 4.



WITNESSES:

J. M. Warner.
J. A. Walsh.

Fig. 5.

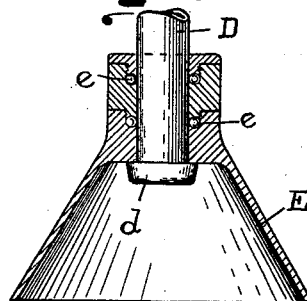
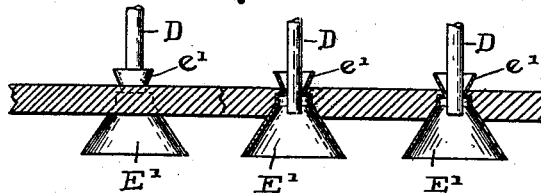


Fig. 6.



INVENTOR

Hugo Wuefing,

BY

Chester Bradford,
ATTORNEY.

UNITED STATES PATENT OFFICE.

HUGO WUELFING, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-FOURTH
TO PAUL WUELFING, OF SAME PLACE.

BOTTLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 523,392, dated July 24, 1894.

Application filed May 4, 1894. Serial No. 510,041. (No model.)

To all whom it may concern:

Be it known that I, HUGO WUELFING, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Bottling-Machines, of which the following is a specification.

The object of my said invention is to produce a machine for bottling liquids by means of which a number of bottles may be filled equally and uniformly, and the liquid at the same time kept from contact with the outer air.

A machine embodying said invention will be first fully described and the novel features thereof then pointed out in the claims.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view illustrating a machine embodying my said invention in condition for use; Fig. 2 a transverse sectional view showing the machine and bottles as they are arranged while the filling is going on; Figs. 3 and 4 detail views showing two positions of an uneven bottle; Fig. 5 a detail sectional view of the bottle-neck guide on an enlarged scale, and Fig. 6 a sectional view illustrating an alternative construction of the bottle-neck guide.

In said drawings the portions marked A represent the frame-work in which my machine is mounted; B the tube leading from a tank, barrel, or any other suitable source of supply (not shown); C liquid-distributing tubes connected to the tube B; D bottle filling nozzles connected to the tubes C; E bottle-neck guides upon the nozzles D, and F an air vent or valve.

The frame A is, in the construction shown, mounted upon the table A', and supports the bottle-filling mechanism. Said table A' carries a vertically movable platform A² which may be operated by a screw-rod A³ and appropriate gearing, as illustrated in Fig. 1. Upon this platform may be placed a case or receptacle R for the bottles, in which said bottles are usually placed while being filled, and which may, if properly constructed, be the same case used in subsequently handling the bottles. While being filled, said bottles

are raised, by means of the platform and the operating gearing, to the position shown in Fig. 2.

The tube or pipe B is a simple conduit for the liquid from the source of supply to my improved apparatus. At a convenient point it is provided with the cock B', by which the flow of liquid can be shut off, or regulated, as desired.

The tubes C are, in one sense, branches of the tube B, and extend the required distance across the machine, their length being dependent upon the size of the machine, as will be readily understood. The machine illustrated is of a size or capacity sufficient to receive and fill twenty-four bottles at one operation. These tubes C preferably have a hollow fin C' upon the upper side which extends up some distance, thus giving free communication at its upper level between all the nozzles or branches leading therefrom, and conducting to equal flow and pressure throughout the machine.

The nozzles D are simply pipes, preferably of a double-siphon form, secured to the upper side of the tube C (or its fin when the latter is used), which branch each way, and extend down a sufficient distance so that when the bottles are in proper position said nozzles will nearly reach the bottom of said bottles, as illustrated in Fig. 2. As these nozzles are all of the same size and connected to the tubes C at the same level, which tubes are of considerably greater capacity than the nozzles separately, it will be readily seen that the flow to each bottle will be equal, and that the bottles will all be filled at practically the same instant of time. Should, however, there be some slight variation, the operator, by watching the filling, and shutting off the flow of liquid at the proper time, and then permitting the bottles to remain a moment, the pressure inside the apparatus being equal at all points, the bottle or bottles that are completely filled will at once be equalized with the others, by reason of the tendency of connected bodies of liquid to settle at a common level. When the flow is shut off, the air pressure will hold the liquid inside the pipes suspended, and prevent it from running out.

The bottle-neck guides E are mounted upon

the nozzles D, which are provided with collars *d* at the lower ends to support said bottle-neck guides as shown. Said guides are in the form of an inverted funnel, and are arranged to travel easily up and down the nozzles. At the point where the neck *n* of one of the bottles O finally rests they are of sufficient size to receive the neck of said bottle, and taper therefrom in all directions. If in the raising of the bottles, after they have been placed in the machine, some of the necks do not of themselves exactly register with the filling nozzles, these guides will cause them to move sidewise until they do register, (as illustrated by Figs. 3 and 4,) said guides being of considerable weight. When the bottle-necks are exactly registered with the filling nozzles, of course the continued upward movement carries the guides with them to the position shown in Fig. 2. Said bottle-neck guides may be provided with anti-friction rollers or balls *e* to facilitate their travel up and down the nozzle-tubes D. Instead of these separate bottle-neck guides, as shown in the principal drawings, I may provide a board in which a number of guide-flanges E' are secured equal to the number of bottles, and arranged with their centers the same distance apart as the centers of the filling nozzles, and such a board so provided with guide flanges may be placed upon the tray of bottles before it is placed in the machine.

Small funnel-shaped extensions *e'* upon the upper side of the board will serve (as the tray carrying the bottles is raised) to guide the nozzles down through into the bottles, with the same result as where the separate bottle neck guides are used, as above described.

The air vent or valve F is connected in any suitable manner to the tube C, and serves the ordinary purpose of such a device. Manifestly, when it is desired to fully empty the tubes and nozzles, the admission of air from the top is necessary, which is readily effected by means of this vent valve. Said valve F should be close to the connecting pipe, so as to prevent air from accumulating in the pipes.

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

1. The combination, in a bottle-filling ma-

chine, of supply tubes arranged at a level for receiving and distributing the liquid, branches extending upwardly from the top of said tubes and thence each way and down to form bottle-filling nozzles, means for shutting off or regulating the flow of liquid, a vertically movable platform or case spaced to receive the bottles and maintain them at distances between centers corresponding to distances between centers of the filling nozzles, and mechanism for raising and lowering said platform, substantially as shown and described, and for the purposes specified.

2. The combination, in a bottle-filling machine, of the liquid distributing tube C having hollow fins C' upon the upper side, bottle-filling nozzles of siphon-like form communicating with the upper side of said fin and extending over and down and thus adapted to enter the bottles, a vertically moving platform or case for the bottles, and mechanism for raising and lowering the same, substantially as set forth.

3. The combination, with the nozzles of a bottle-filling machine, of a set of bottle-neck guides mounted in a board and consisting of guide flanges E' extending below said board and adapted to come in contact with the necks of the bottles, and funnel-shaped extensions *e'* extending above the board and adapted to guide the nozzles down through said guides, substantially as shown and described.

4. The combination, in a bottle-filling machine, of supply tubes for receiving the liquid arranged at a level, numerous bottle-filling nozzles branching from said tubes and adapted to extend into said bottles, a common source of supply to which said tubes are connected, and a single cock or valve adapted to open and close, or regulate, said source of supply, whereby numerous bottles can be filled at a single operation, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 30th day of April, A. D. 1894.

HUGO WUELFING. [L. S.]

Witnesses:

CHESTER BRADFORD,
PAUL WUELFING.