

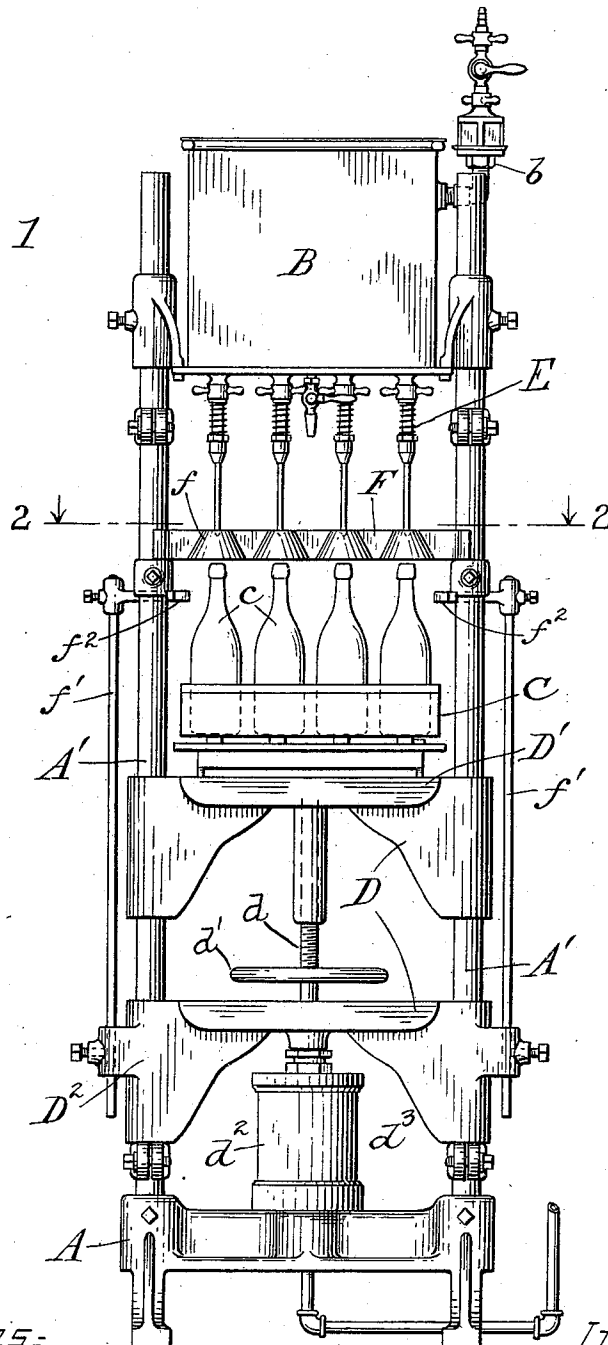
J. H. CHAMP.
BOTTLING MACHINE.
APPLICATION FILED APR. 7, 1909.

979,745.

Patented Dec. 27, 1910.

3 SHEETS—SHEET 1.

Fig. 1



Witnesses:

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Jno. F. Oberlin

Inventor.

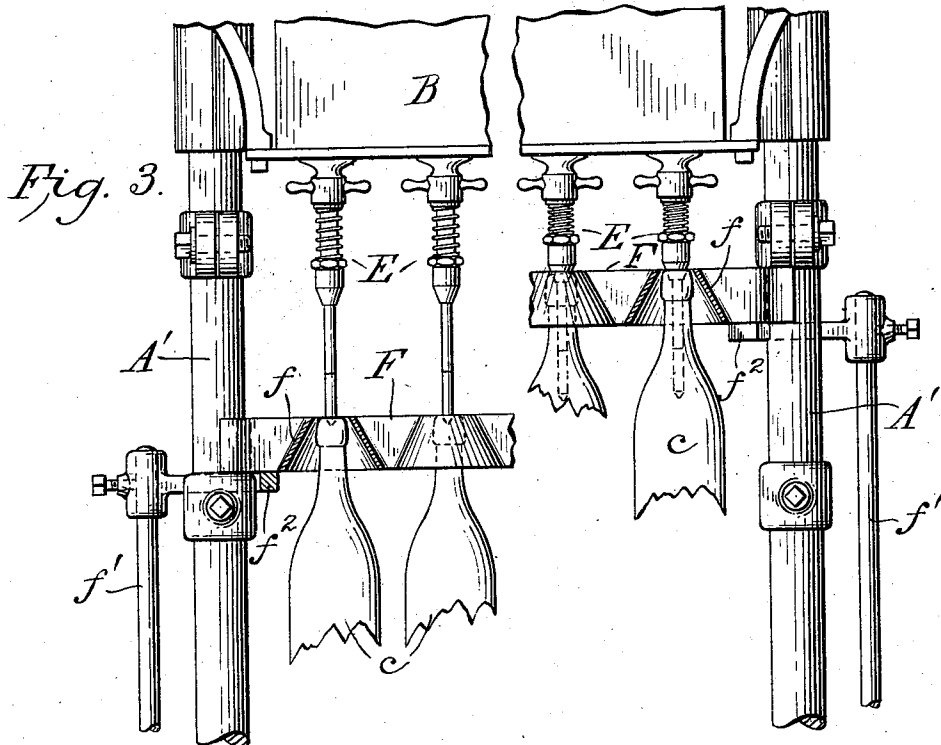
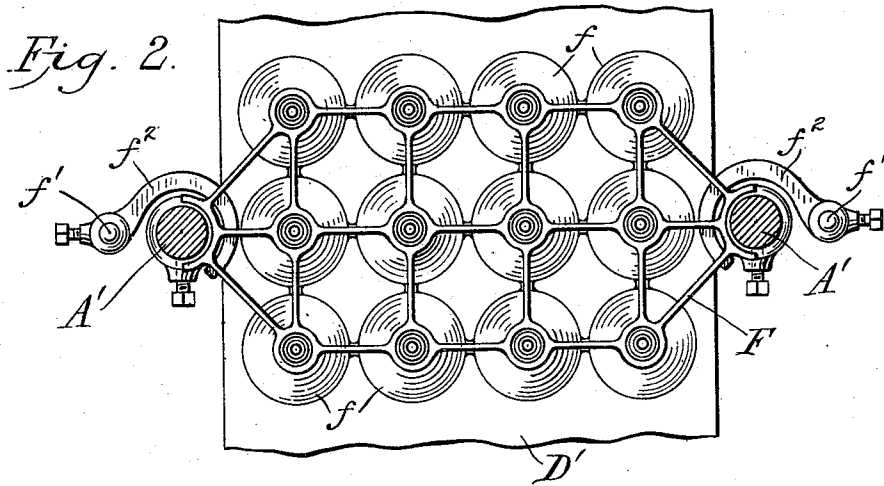
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3 SHEETS—SHEET 2.



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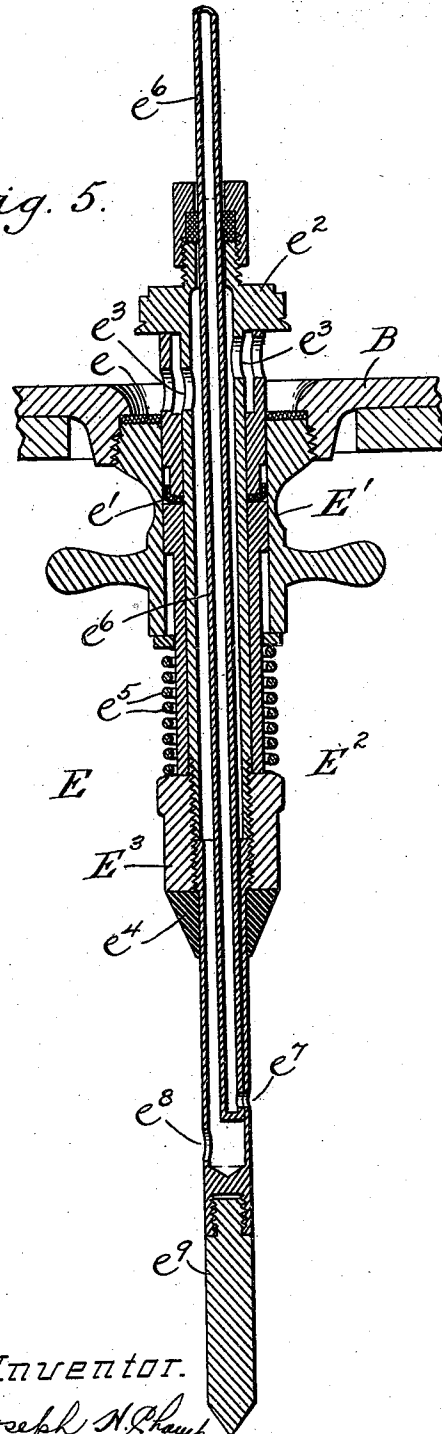
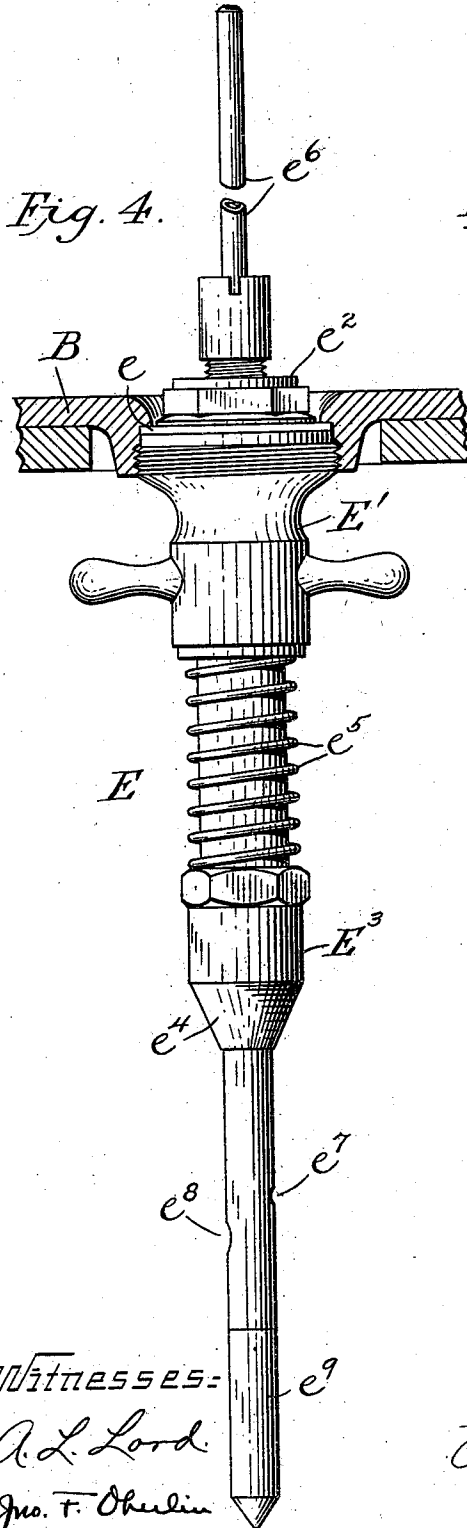
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3 SHEETS-SHEET 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH H. CHAMP, OF CLEVELAND, OHIO.

BOTTLING-MACHINE.

979,745.

Specification of Letters Patent.

Patented Dec. 27, 1910.

Application filed April 7, 1909. Serial No. 488,493.

To all whom it may concern:

Be it known that I, JOSEPH H. CHAMP, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Bottling-Machines, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

The liquids, for the handling of which the present machine is designed, belong to the class generally termed "still" liquids, in contra-distinction to effervescent liquids, that is, liquids more or less charged with gas, usually carbonic acid gas, under pressure.

The object of the invention is the provision of a machine for the bottling of still liquids that will fill the bottles uniformly to a given height, irrespective of slight variations in their actual capacity, such as are apt to be encountered in glass ware, as also a machine that will accurately and securely seal the bottles against the filling valve during the filling operation. The means constituting these and the other associated improvements comprehended in the invention will be hereinafter fully described and particularly pointed out in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:—Figure 1 is a front elevational view of a machine embodying my several improvements; Fig. 2 is a transverse sectional view of the same on the line 2—2, Fig. 1, showing in plan a feature of construction characterizing such machine; Fig. 3 is partly a side elevation and partly a vertical section of the portion of the machine directly connected with the handling of the bottles, and illustrating the latter in two different positions in relation to the machine; Fig. 4 is a side elevational view of the filling valve, proper, in its normal inoperative position; and Fig. 5 is a central section of such valve showing the same in its raised, or filling, position.

The general machine structure appearing in Fig. 1 aside from the special features characteristic of the present invention, embodies certain features that form the subject matter

of a co-pending application filed February 8, 1909, Serial No. 476,669. Such machine frame, then, will be seen to comprise a suitable base A from which rise two vertical standards or posts A'. Adjustably mounted upon the upper portion of these posts is the reservoir or tank B, wherein the material being handled is contained. As in the co-pending application just referred to, this reservoir is not necessarily a primary reservoir, but is preferably utilized simply as a secondary reservoir, to which the material is transferred from any more general source of supply through a connecting pipe b.

Reciprocably mounted upon the intermediate portions of the standards, is a platform or table D that constitutes the support upon which the bottles c to be filled are placed. As usual in apparatus of the class in hand, such bottles will be ordinarily held in trays or crates C', and the upper member D' of the reciprocable platform is hence adapted for the reception of the trays in question, although if desired, provision may be made for the placing of the bottles directly thereon instead. Such upper member D' is adjustable relatively to the lower member D², being held in desired position with respect thereto by means of a screw bearing a hand-wheel d' for convenience in operation. Reciprocation of the platform is secured in the case in hand, by means of a hydraulic or other fluid-pressure cylinder d² vertically disposed below the lower platform member D², to the under side of which latter the plunger d² within the cylinder is directly attached. Obviously, any suitable actuating means may be employed in place of the pressure cylinder, if desired. Despite the predetermined or limited throw of the actuating means, thus provided, it will be evident that the relative adjustability of the two members of the platform and of the filling tank permits the bottles resting on the upper platform member to be brought into proper coöperative relation with said tank irrespective of the size of the bottles.

The filling mechanism proper includes a series of similar devices E mounted in the bottom of the reservoir B, Figs. 1 and 3, so as to be located one above each bottle in tray C', when the platform is raised. Each such filling device comprises, Figs. 4 and 5, an outer bushing or sleeve E' fixedly mounted in the reservoir bottom, on the upper face of which is disposed an annular ring of pack-

ing material e . Slidably mounted in such bushing, is a filling tube E^2 that projects downwardly a sufficient distance to enter within the mouth of the bottle. A washer e' ,
 5 carried by said tube is adapted to form a close fit within the bushing E' and a head e^2 mounted on the tube's upper end is adapted to seat on the packing ring e on the upper
 10 end of the bushing. The lateral walls of said filling tube are provided with perforations e^3 , which are located just below the head, but which may be at different elevations, so that in the raised position of the tube the liquid within the tank or reservoir
 15 is permitted to freely flow down the tube and into the bottle. To enable the latter to thus raise the tube, as also to form a seal for the bottle mouth, a plug E^3 , constituting a bottle mouth-piece, is mounted upon the
 20 portion of the tube projecting below the bushing, such plug including a rubber gasket e^4 adapted to effect the desired closure. A compression spring e^5 is interposed between the sleeve and such plug to normally depress
 25 the tube and determine the degree of pressure exerted to effect the closure of the bottle. Lying centrally within the filling tube and extending above the same a distance sufficient to expose its upper end above the
 30 level of liquid maintained in the tank is a vent tube or duct e^6 , the lower end of which is adapted to communicate with the bottle's interior by opening e^7 distinct from the opening e^8 of the filling tube, proper.
 35 As has been indicated, it is desirable in the filling of bottles to have the line of the liquid rise to a substantially uniform height in their necks that the bottled product may have a proper appearance. With the construction of filling device just described, the flow of the liquid into the bottle will cease
 40 when its level therein rises to a height sufficient to shut off the opening e^7 of the vent tube. Since it may not always be desired, however, to have the liquid stand at exactly
 45 this height, and since the portion of the tube depending into the liquid when withdrawn obviously, allows the level to lower, somewhat, I propose in the present connection to
 50 provide a separable section e^9 forming the extremity of the filling tube, the purpose of which is to determine the amount of space thus taken up by the latter, and thus to accurately gage the level of the liquid within
 55 the bottle neck, not only when the flow of the liquid ceases, but also after the bottle has been removed from the filling device entirely. By rendering this section detachable, I am enabled to utilize various sizes to
 60 produce any desired result in the respect noted in bottles of different capacity and forms, as will be readily understood.

To properly guide the bottle mouth onto the filling tube E^2 , and thereupon to accurately center the same with respect to the

plug, or mouth-piece E^3 that forms the closure therefor in the filling operation, guide means in the form of a series of flaring or funnel-like, open cups f are provided, these being carried by a frame F reciprocally secured to the standards A' of the machine above the platform upon which the bottles are placed preparatory to their being raised into contact with the filling devices, the normal height of the frame above the platform being sufficient to permit this without interference. Side bars f'' carried by the lower platform member D^2 are provided at their upper ends with members f^2 adapted to engage with this frame, the adjustment of the latter being such, however, as to require a preliminary upward movement of the platform as a whole, along with the bottles carried thereby, before such engagement takes place. During such initial movement, accordingly, the frame carrying the flaring guide cups remains stationary so that the bottles are raised into the position illustrated in Fig. 3, whereby they are accurately centered for the entrance therein of the filling tubes of the several filling devices before the latter are encountered. Any further upward movement, however, of the platform and bottles, now carries along with it the frame, so that the bottles are maintained in their centered positions, just referred to, throughout the remainder of their upward movement, and as a result are carefully centered against the closing plugs of the filling devices, which might not otherwise be the case were they allowed to slide along the filling tubes. A thorough and effective sealing of the bottles is thus insured.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. In mechanism of the class described, the combination of a bottle-filling device; a vertically reciprocable bottle support; a guide member for centering a bottle with respect to said filling device; and means adjustably connected with said support adapted to engage and raise said guide member after said support has been raised a predetermined distance.

2. In mechanism of the class described, the combination of a bottle-filling device; a vertically reciprocable bottle support; guide means for centering a bottle with respect to said filling device, said means including an open cone-shaped cup reciprocably mounted over said support and normally held higher than the bottles on the latter; and means adjustably connected with said support adapted

to engage and raise said guide means after said support has raised such bottles into contact therewith.

3. In mechanism of the class described, the
5 combination of a bottle-filling device; a vertically reciprocable bottle support; and guide means for centering a bottle with respect to said filling device, said means including an open cone-shaped cup reciprocably mounted over said support, and means
10

adjustably connected with the latter adapted to engage and raise said cup after said support has been raised a predetermined distance.

Signed by me this 5th day of April, 1909. 15

JOSEPH H. CHAMP.

Attested by—

D. T. DAVIES,
MARY GLADWELL.