S. B. GOFF.

BOTTLE FILLING AND CLOSURE DEVICE.

APPLICATION FILED OCT. 30, 1907.

898,458.

Patented Sept. 15, 1908.

2 SHEETS—SHEET 1.

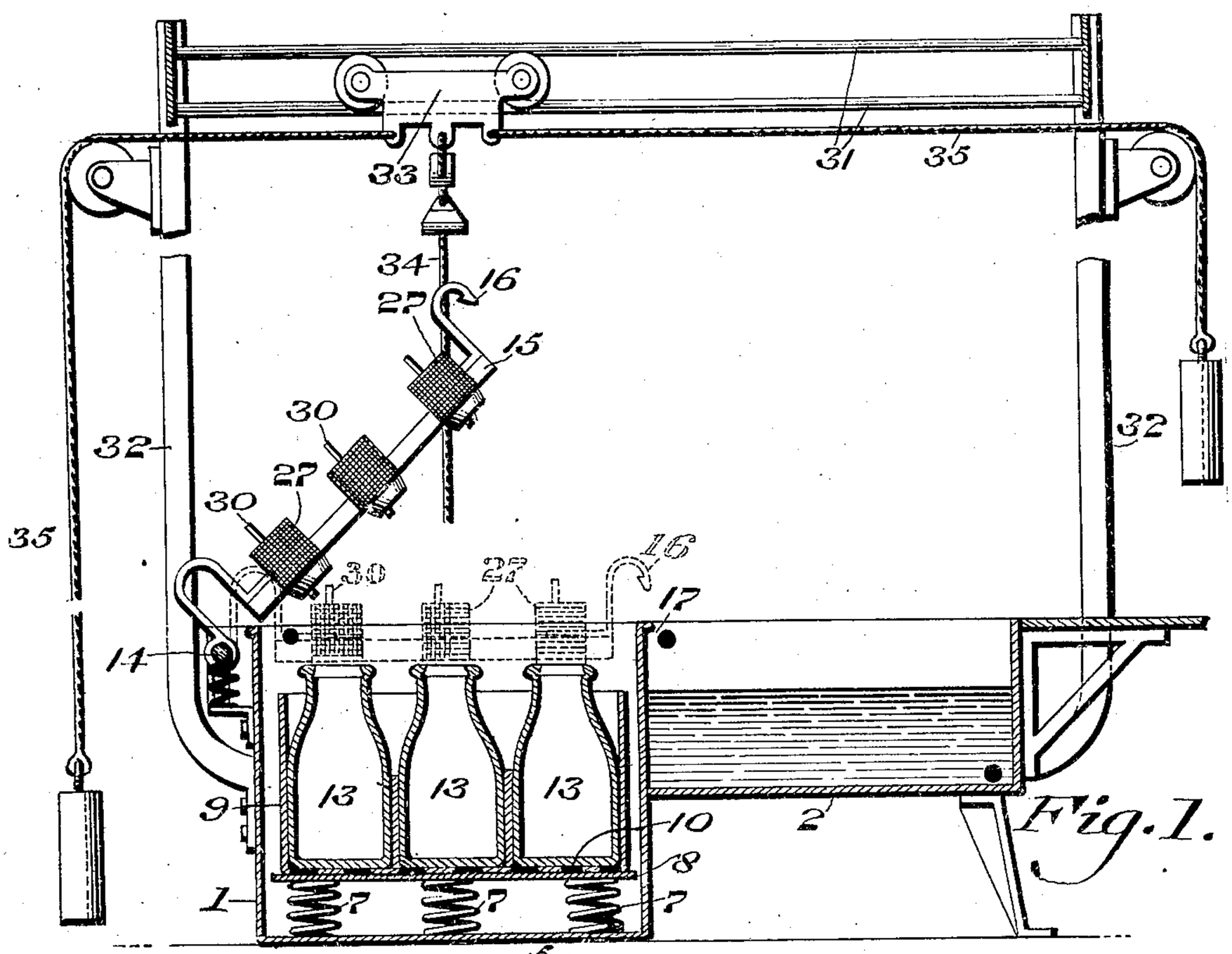


Fig. 1.

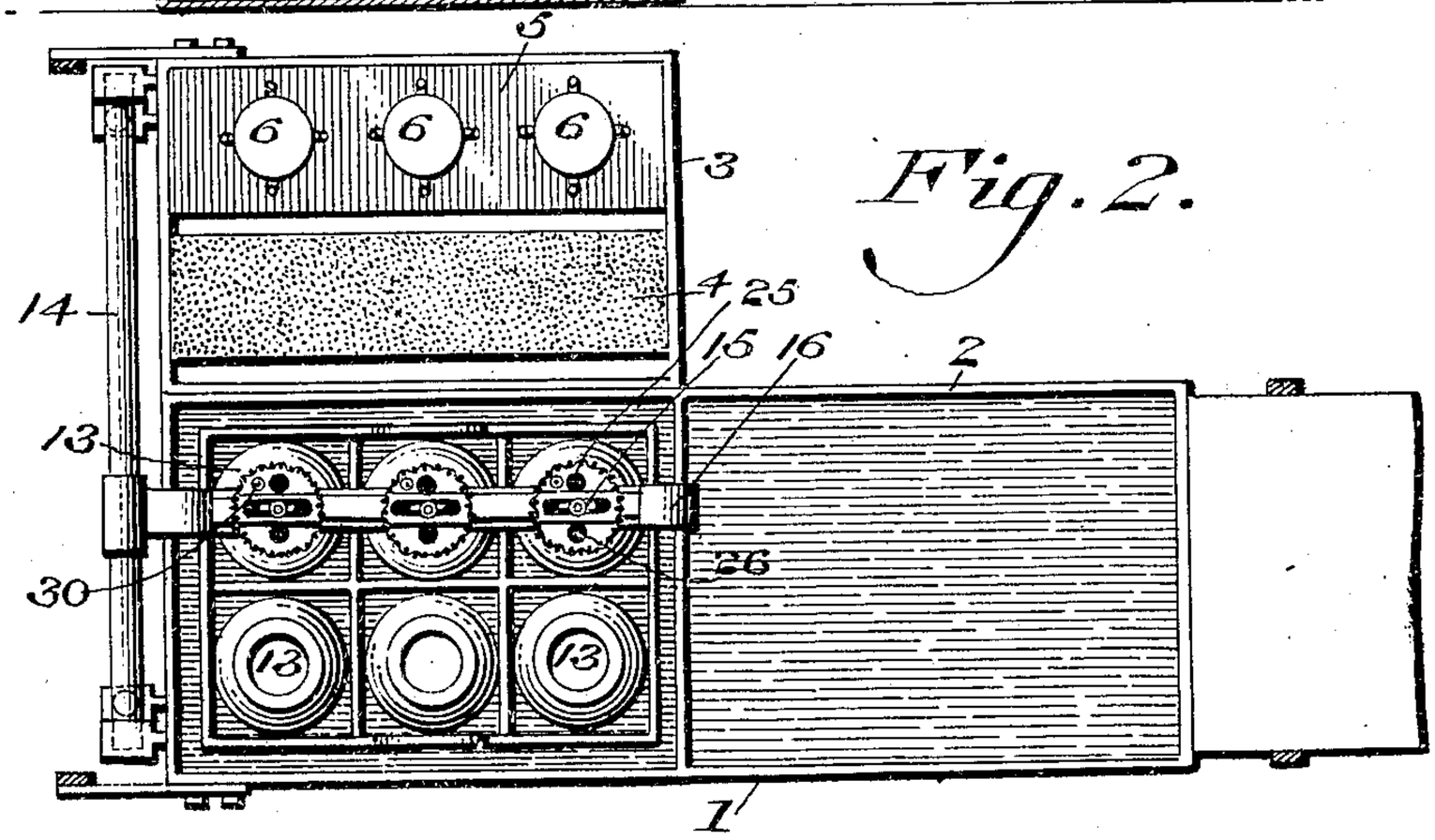


Fig. 2.

Witnesses

P. F. Nagle.

H. G. Dietrich

Inventor

Samuel B. Goff.

By Wiedersheim & Fairbank

Attorneys

S. B. GOFF.

BOTTLE FILLING AND CLOSURE DEVICE.

APPLICATION FILED OCT. 30, 1907.

898,458. **Patented Sept. 15, 1908.**

2 SHEETS—SHEET 2.

Fig. 5.

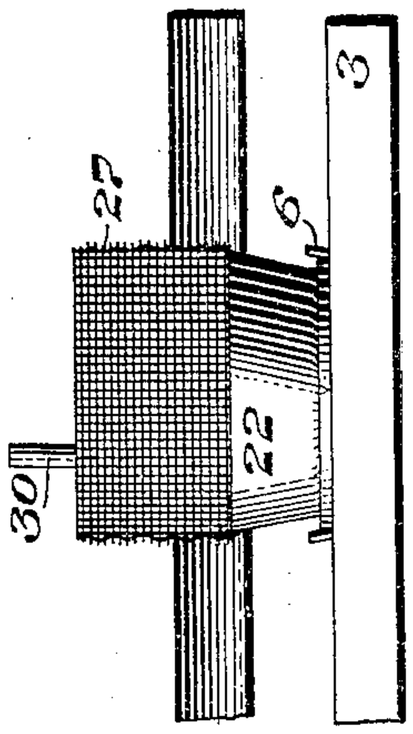
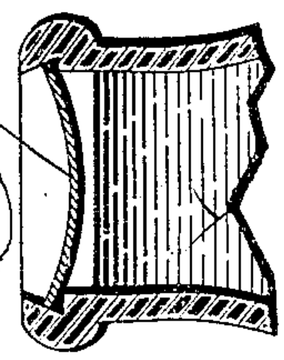


Fig. 7.



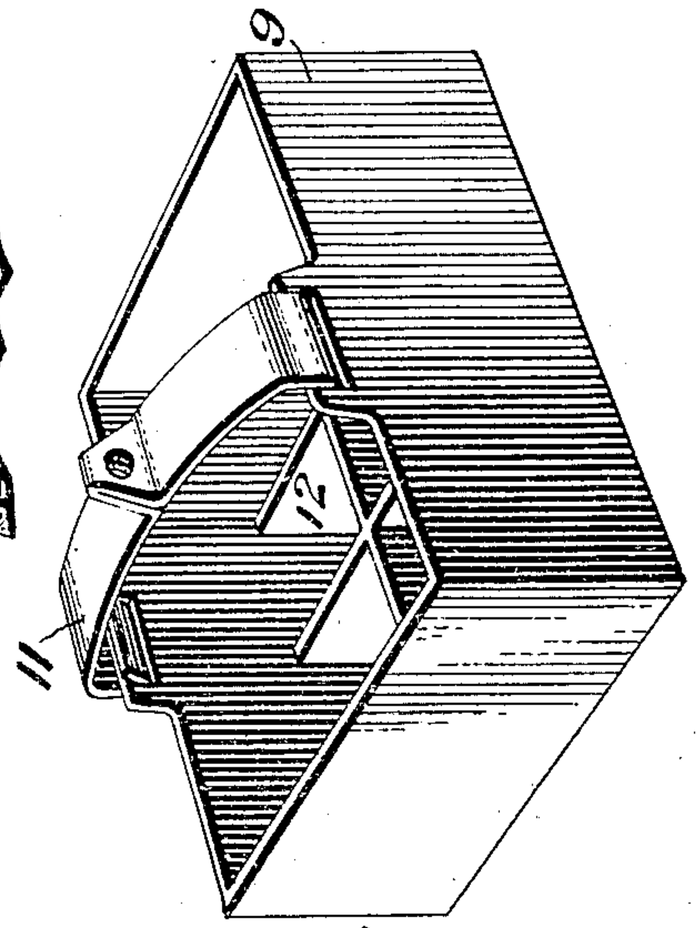


Fig. 8.

Fig. 4.

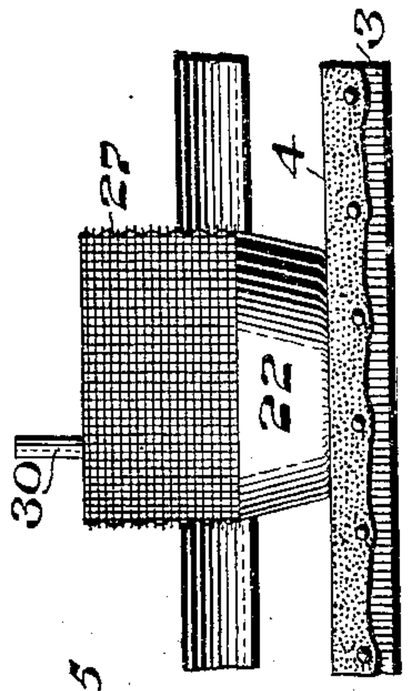


Fig. 6.

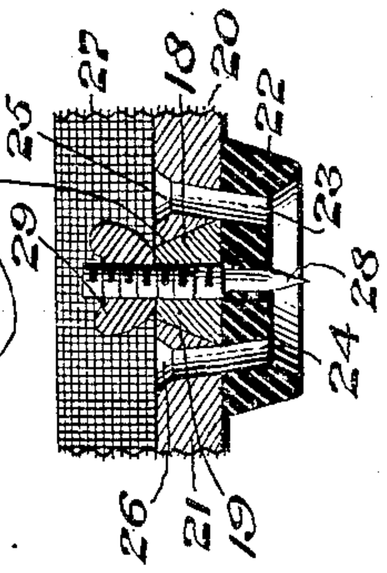
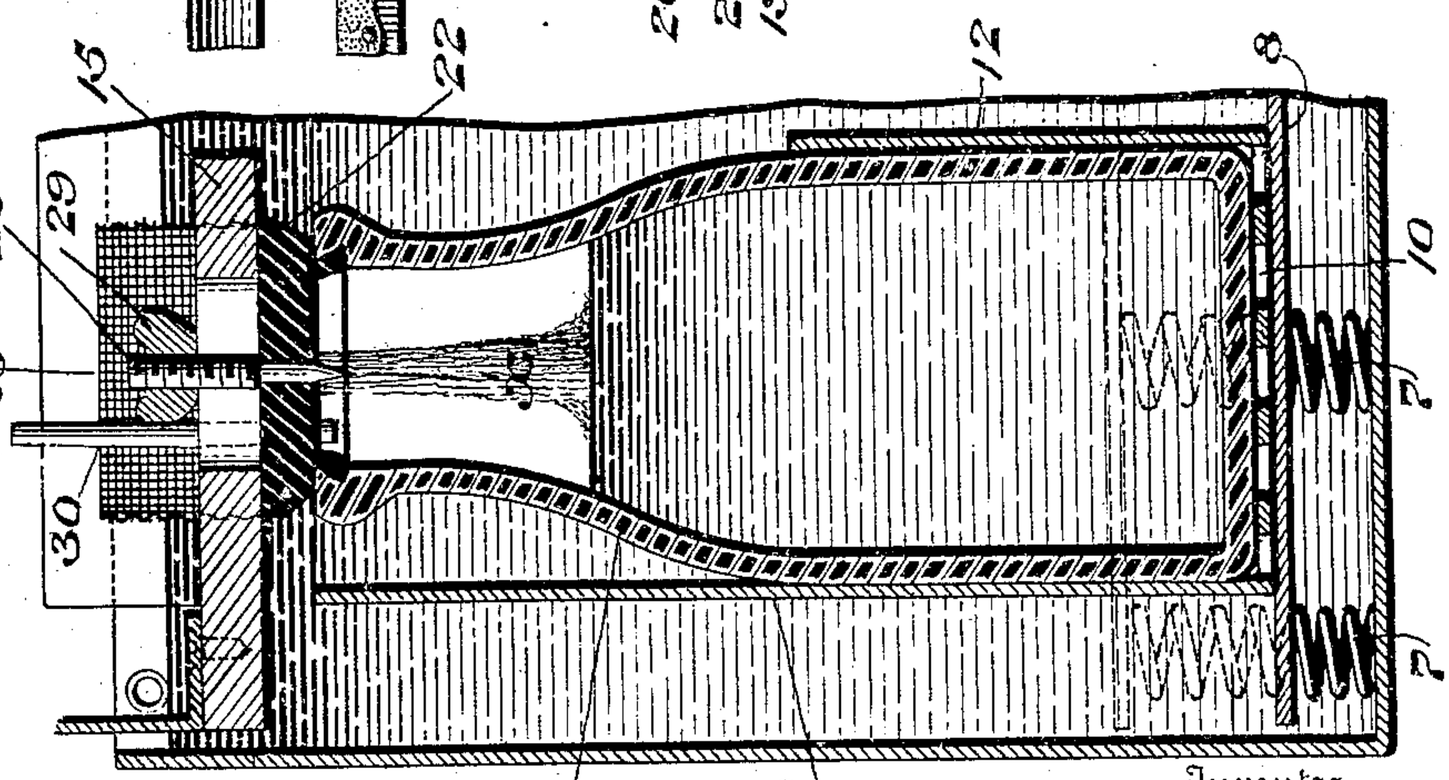


Fig. 3.



Inventor

Samuel B. Goff.

By Wiedersheim & Fairbanks

Attorneys

Witnesses

P. F. Nagle.

H. G. Dieterich

UNITED STATES PATENT OFFICE.

SAMUEL B. GOFF, OF CAMDEN, NEW JERSEY.

BOTTLE FILLING AND CLOSURE DEVICE.

No. 898,458. Specification of Letters Patent. Patented Sept. 15, 1908.

Application filed October 30, 1907. Serial No. 399,827.

To all whom it may concern:

Be it known that I, SAMUEL B. GOFF, a citizen of the United States, residing in the city and county of Camden, State of New Jersey, have invented a new and useful Bottle Filling and Closure Device, of which the following is a specification.

My invention relates to a device for filling and capping or closing bottles, and it consists of a vessel adapted to contain a liquid, preferably milk, and in which bottles are adapted to be filled on the over-flow principle.

It further consists of means for cleansing the filling stopper employed prior to the application by the same of a cap or closure to a bottle.

It further consists of a means adapted to insert and remove the filler mechanism.

It also consists of means for capping or closing the bottles when the operation of filling is completed.

It further consists of details of construction as will be described and claimed.

For the purpose of illustrating my invention, I have shown one form of a device, as this embodiment well illustrates the principle of my invention, although it is obvious that the principal instrumentalities of which my invention consists, can be variously arranged and organized, and in the accompanying drawings, I have shown one embodiment thereof, which I have found in practice to give satisfactory results, although it is to be understood that my invention is not limited to this specific arrangement and organization of these instrumentalities.

Figure 1 represents a partial side elevation and partial vertical section of a bottle filler and closure device embodying my invention. Fig. 2 represents a plan view thereof. Fig. 3 represents a vertical section of a detached portion, on an enlarged scale. Figs. 4 and 5 represent side elevations of detached portions, on an enlarged scale. Fig. 6 represents a section of a portion on line *x*—*x*, Fig. 3. Fig. 7 represents a section of a bottle with a stopper or closure in position. Fig. 8 represents a perspective view of a basket or tray employed for holding bottles during various operations of the device.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings:—1 designates a vessel for containing milk or other liquid, which is to be bottled, and 2 designates a water-receiving tank for cleansing the bottles.

3 designates a holder for the pad 4 of absorbent material, and 5 designates a support for piles of bottle stoppers or caps 6, said members 1, 2, 3 and 5 being suitably connected, or made separate, as desired.

Resting on the bottom of the vessel 1 are the springs 7, on which is placed the follower 8, for supporting the bottle-receiving basket 9, whose bottom 10 is open, said basket having a removable handle 11 and interior partitions 12, within which latter are placed the bottles 13 to be filled, said handle 11 serving as a sling, which is readily attachable to the body of the basket and detachable therefrom.

Secured to the bearings attached to the vessel 1, is the cross-bar or shaft 14, on which is freely mounted the rising and falling arm 15, the outer end of which is provided with a catch 16 adapted to engage the lip 17 on the side of the vessel 1, for securing said arm while in operative position. The sides of said arm 15 are dovetailed as at 18, 19, and to the same are adjustably fitted the bars 20, 21 (see Figs. 2 and 6) depending from which latter are the plugs 22 of resilient material, the same being adapted to enter the mouths of bottles and tightly close the same during the filling operation, as plainly shown in Fig. 3, said plugs being provided with ports or ducts 23, 24, which are in communication with ports 25, 26 in said bars 20, 21, said ports 25, 26 appearing at the top of said bars, and said ports 23, 24 appearing at the bottom of said plugs.

The plugs are connected with the arm 15 by the pointed pins 28, which pass through said plugs and a slot in the arm 15, their upper ends being threaded for the engagement of nuts 29, which are adapted to tighten against said arms for evident purposes.

Secured to the bars 20, 21 and surrounding the place of occupation of the ports 25, are inclosures of gauze or other foraminous material, which form strainers 27 to prevent foam and foreign substances from entering said ports and consequently the bottles.

The arm 15 is intended to carry as many plugs 22 and strainers 27 as there are bottles, Fig. 2 showing only said bar sufficiently wide to carry plugs and strainers for one row of bottles. The other row has no such bar and members above them, so that for purposes of clearness the bottles are shown uncovered.

30 designates tubes, which pass through the arms 15 and plugs 28, and open into the bottles to be filled, so as to permit the escape of displaced air in the latter.

Above the tank 1 is the runway 31, which is supported on the arm 32, in the present case rising from the tank 2, said runway having thereon, the traveler 33, from which depends the rope or chain 34, which may be connected by the handle 11 with the basket 9 for raising and lowering the latter, and shifting the same from one position to another, for purposes to be hereinafter described.

The operation is as follows:—The vessel 1 is supplied say with milk to a suitable height, and more milk gradually poured into the vessel 1 as required to keep the latter practically full, and the basket 9 with the bottles therein placed on the follower 8 the handle 11 of the basket then being removed. The arm 15 is now lowered, when the lower portions of the plugs or stoppers 22 enter the mouths of the bottles and are expanded against the shoulders, see Fig. 3, and the plugs tightly close said mouths, while their lower portions enter the latter and serve to limit the subsequent filling of the bottles. Owing to the downward pressure of the arm 15 on the bottles, the follower 8 is lowered and the springs 7 are compressed by the same. The surface of the milk is now above the tops of the ports 25 and 26, so that the milk flows through the latter, and so fills the bottles (see Fig. 3). The arm 15 is now raised and moved transversely on the bar or shaft 14 until the plugs 22 are above the pad 4, when said arm is lowered and the plugs contact with said pad, so as to have the milk adhering to the plugs removed from the same. Then the arm is again raised and moved over the support 5, when it is lowered and the points of the pins 28 pierce the upper stoppers or caps 6, and so take hold of the same. Then the arm is raised and moved back to one of the lines of filled bottles, after which it is lowered and the caps are forced into the mouths of said bottles, thus closing or stopping the same. These operations are repeated until all of the bottles in the basket are filled and closed, when the arm 15 is run out of the way and the basket raised from the vessel 1 by restoring the handle 11, connecting the rope 34 with the latter, and then operating said rope whereby the basket is carried over the water in the tank 2, into which it is lowered, so that the bottles are exteriorly washed, after which the basket is raised and the bottles are removed and permitted to dry, when they are ready for the market.

The plugs 22 may be set nearer to or further apart, relatively to larger or smaller bottles to be filled. In this case, the nuts 29 are loosened and the bars 20 and 21 are moved on the arm to the required extent, so as to properly locate or adjust the plugs, said bars moving on the arm 15 and the pins 28 moving in the slot of said arm. When the adjustment of the plugs is accomplished, the nuts 29 are tightened, for evident purposes.

The traveler has weighted cords 35 connected with the opposite ends thereof, so that when either weight is raised, the other weight becomes operative to move said traveler, and thus the motions of the latter may be easily accomplished by the weight in service.

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

1. In a device of the character stated, a vessel adapted to receive both a fluid and a bottle to be filled with the latter, a plug for a bottle, and a carrier for said plug, said plug having a port therein, whereby the bottle may be filled through said plug and a foraminous inclosure protecting said port.

2. In a device of the character stated, a vessel adapted to receive both a fluid and a bottle to be filled with the same, a plug for a bottle, a carrier for said plug, said plug having a port therein, whereby the bottle may be filled through said plug, an absorbent piece to which said plug may be directed and wiped thereon, and a capping device.

3. In a device of the character stated, a bottle filling device, a support for a bottle-closing cap, a member adapted to pick-up said cap, a carrier for said member, and a holder for a bottle, said carrier being movable in directions to and from said support and holder.

4. In a device of the character stated, a vessel adapted to contain a fluid and receive a bottle to be filled by the same, a plug for the bottle, said plug having a port therein in communication with said vessel and adapted to communicate with the interior of the bottle, a movable carrier for said plug, a support for bottle-stopping caps, and a cap pick-up on said carrier, said carrier being movable in directions to and from said support and said vessel.

5. In a device of the character stated, a fluid-receiving vessel, a follower therein, a resilient support for said follower, a bottle-containing basket adapted to be supported on said follower, a plug for the bottle, said plug having a filling port therein, and a carrier for said plug, said carrier being adapted to depress the bottle, whereby the latter may be submerged and filled through its plug.

6. In a device of the character stated, a fluid-receiving vessel, a bottle-receiver adapted to occupy said vessel, and a wash-tank supported adjacent said vessel, and a traveler for coöperation with said receiver for handling the same in either the vessel or tank, said receiver being adapted to enter said tank and subject the bottle in the former to a washing action in said tank and weighted

cords connected with opposite ends of said traveler.

7. In a device of the character stated, a plug for a bottle, the same having a port therein, a carrier for said plug, means for applying a cap, a straining device on said carrier around said port and an absorbent piece to which said plug may be directed and wiped thereon.

8. In a device of the character stated, a plurality of plugs for bottles, a carrying member therefor, a guiding arm on which said member is movably supported, and a device for tightening said member, thus providing for the adjustment of said plugs to bottles of different sizes and positions.

9. In a device of the character stated, a vessel containing a fluid, a water-receiving tank for cleansing the bottles, a bottle-container adapted to serve with either the vessel or tank, a plug for a bottle, a carrier for said plug, said plug having a port therein whereby the bottle may be filled through said plug, an absorbent pad for coöperation with said plug, a traveler adapted to be connected with said container, means for supporting said traveler for use over the vessel or the tank, means for applying a cap and weights upon opposite ends of said traveler.

SAMUEL B. GOFF.

Witnesses:
JOHN A. WIEDERSHEIM,
HARRY C. DALTON.