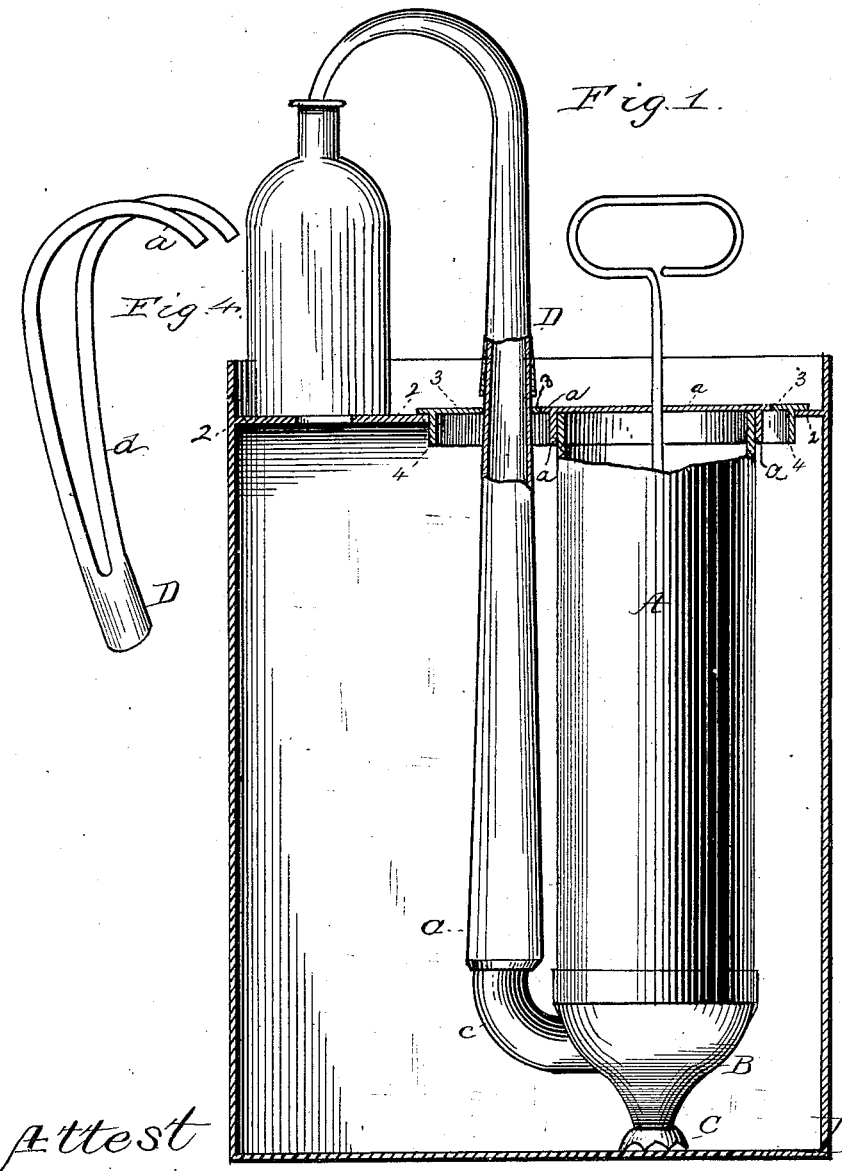
(No Model.) 2 Sheets—Sheet 1.

J. B. METZGER.

APPARATUS FOR FILLING BOTTLES.

No. 304,219. Patented Aug. 26, 1884.

Fig. 1.



Attest

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

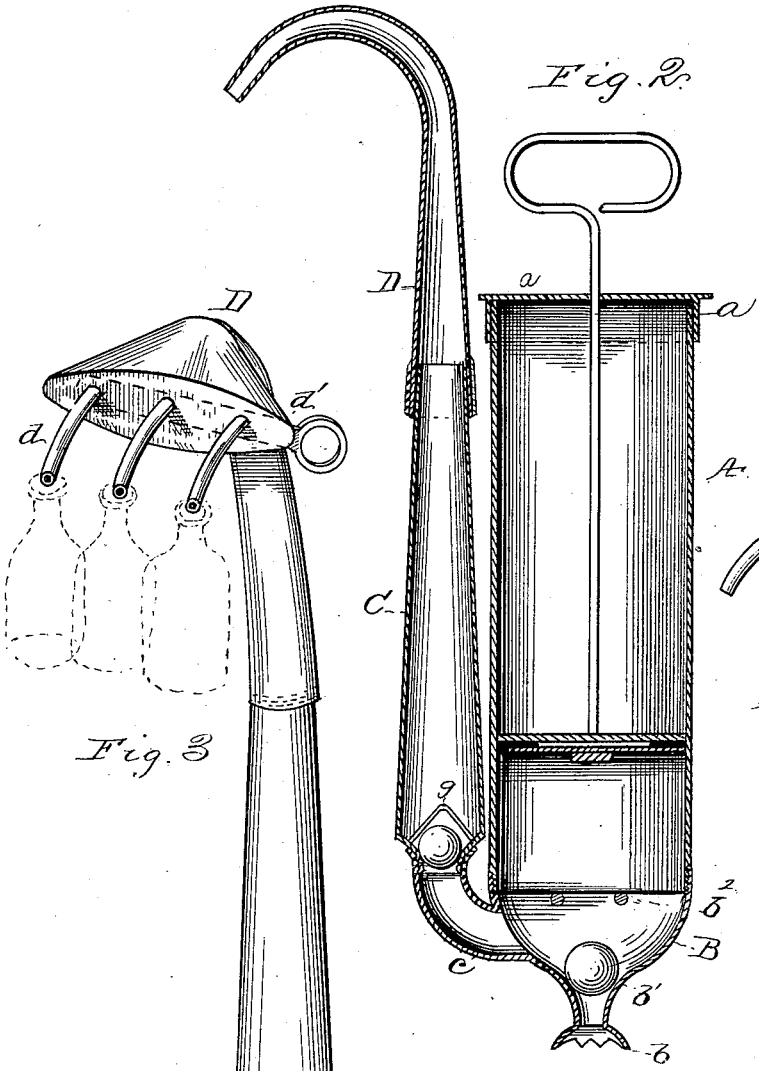
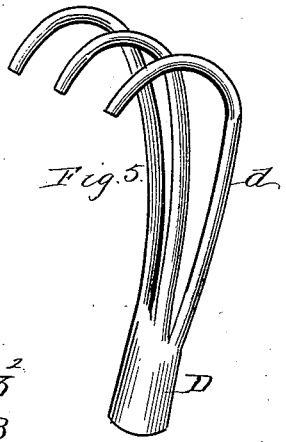


Fig. 3

Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN B. METZGER, OF WILLIAMSPORT, PENNSYLVANIA.

APPARATUS FOR FILLING BOTTLES.

SPECIFICATION forming part of Letters Patent No. 304,219, dated August 26, 1884.

Application filed August 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. METZGER, of Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Filling Bottles; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention is designed particularly for filling one or more bottles at a time from a small reservoir, in which case it is worked by hand, though it is equally applicable on a larger scale to the transfer of liquids from one large reservoir to another, in which latter case any suitable power may be applied.

Figure 1 represents a side elevation, partly in section, of my invention, with the reservoir to which it is applied broken away. Fig. 2 is a central vertical section of my apparatus. Fig. 3 is an enlarged view of the outlet with a nozzle having three spouts. Figs. 4 and 5 represent nozzles having respectively two and three spouts.

In these drawings, A represents the cylinder of the pump, which is provided at its top with the cap *a*, fitted on the outside of the cylinder, and secured in any suitable manner. Through this head passes the piston-rod, which is at one end secured to the piston-head, and at the other bent upon itself to form a convenient handle for grasping when it is desired to work the piston up and down. The length of the rod is preferably such that the handle is brought close to the cap *a*, when the piston is at the extent of its downward stroke.

B is the base, to which is secured, by screw-threads or otherwise, on the outside, the cylinder A. The screw-threads on the base are set in a distance equal to the thickness of the material of the cylinder, forming a shoulder against which the cylinder rests, and also making a smooth joint on the outside. The base is made funnel-shaped, the opening in the bottom being provided with a flaring ring, *b*, which is serrated on its lower face, thus qualifying it to rest on the bottom of the vessel and receive the weight of the apparatus, and at the same time permitting the entrance of the liquid. This base is provided with a ball, *b'*, which, in connection with the tapering walls of the base, forms a ball-valve and valve-seat. The passage is opened with the upward and closed with the downward stroke of the piston. The ball is held in place by the cage formed by the two horizontal rods, b^2.

Formed with and extending from the side of the base B is an upwardly-curved branch tube or neck, *c*, for the passage of the liquid outward into the pipe C, which is attached to the outer end of said tube *c* in any suitable manner, and which forms the discharge-conduit. Within this pipe C is located a ball-valve, *g*, held in its place by a cage, as shown, while its lower end is contracted to form a seat for the said valve, and also better adapt it to be fitted to the branch tube *c*. The upper end of the pipe is adapted to receive a nozzle, D. These nozzles are made with the neck portions, which fit onto the pipe, all of the same size, so that they are interchangeable. At the point of juncture there may be provided a packing of cork, leather, or the like; or, if desired, the joint may be made by means of screw-threads.

The nozzles D are provided with any number of spouts, *d*, and, as represented in Fig. 3, I prefer to provide them with an enlarged flaring hood, from which the spouts project. Extending across the inner end of the spouts within the hood is a slide-valve, by which the discharge of the liquid from the spouts can be at any time shut off by simply pushing said valve inward. In the instance of closing this slide-valve there is little or no back rush or flow of the liquid into the pipe C, as the hood serves the function of a receptacle for holding what liquid remains in the nozzle after the shut-off is made. It is obvious that the ball-valve in the bottom of pipe C will prevent backflow of the fluid into the base B, even if such flow should be occasioned by the closing of the slide-valve.

The reservoir is represented at 1. It is preferably of tin or sheet-iron, and is made in any well-known way. It is provided at a little below the top with a head, 2, which is soldered or otherwise secured to the sides of the reservoir, in order to sustain it against the weight

of the bottles when set thereon for the purpose of filling. A small opening, 4, is made therein to allow the drip, if any, to flow back into the reservoir. The head 2 is provided with a removable cover, 3, preferably of circular contour, provided with a depending rim, 4, and overlapping flanges, by which it rests on the head. This cover has an aperture for the passage of the pipe C, and a second aperture, within which fits the cover *a* of the cylinder A, the upper surfaces of covers *a* and 3 lying on the same plane. In placing the forcing apparatus within the tank, the cylinder A, pipe C, and base B, properly connected, are first put in, the cover C then fitted down over them, and the nozzle secured to pipe C thereafter. The head 2 is placed a short distance from the top of the reservoir, leaving an upwardly-projecting rim for retaining any drip.

In the use of the device the bottle or bottles to be filled are placed under the spout or spouts and an up-and-down motion given to the piston. At the upward stroke the ball-valve *b* is raised, permitting the inflow of the liquid, which rushes in and fills the base and cylinder up to the piston. At the same time the outlet is closed by the valve in the lower part of the pipe C. At the downward stroke the valve *b'* is closed and the valve *g* opened, thus permitting the escape of the liquid, which continues to flow in a steady solid stream up through the pipe C and out at the nozzle as long as the depression of the piston continues.

Having thus described my invention, what I claim is—

1. In an apparatus for transferring liquids, the combination, with a reservoir containing the liquid, of the cylinder A, provided with an upwardly-curved neck, *c*, and the vertical discharge-pipe C, detachably secured to said neck, the said pipe C being contracted at its lower end to form a valve-seat, and provided therein with a ball valve and cage, substantially as shown and described.

2. In an apparatus for transferring liquids, the combination, with the discharge-pipe, of the nozzle D, having a flaring hood provided with the spouts *d* and slide-valve *d'*, substantially as shown and described.

3. In an apparatus for transferring liquids, the combination of a reservoir for containing the fluid, a cylinder having a piston, and base B, secured to the lower end of said cylinder in the manner described, said base provided with the upwardly-curved neck *c*, the pipe C, attached to said neck, and provided with a ball valve and cage, and contracted at its lower end, whereby is formed the valve-seat, and the nozzle D, secured to the upper end of pipe C, and having one or more spouts, all substantially as set forth.

4. In an apparatus for transferring liquids, the combination of the reservoir having head 2, said head having the removable portion 3, of the construction substantially as herein described, the cylinder having a piston, and provided with the base B, with its respective accessories, the discharge-pipe C, provided with a ball-valve and connected to the base, and the nozzle D, terminating in the hood and having one or more spouts, said hood provided with a slide-valve, all substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN B. METZGER.

Witnesses:
EDWARD E. ELLIS,
CHARLES P. WEBSTER.