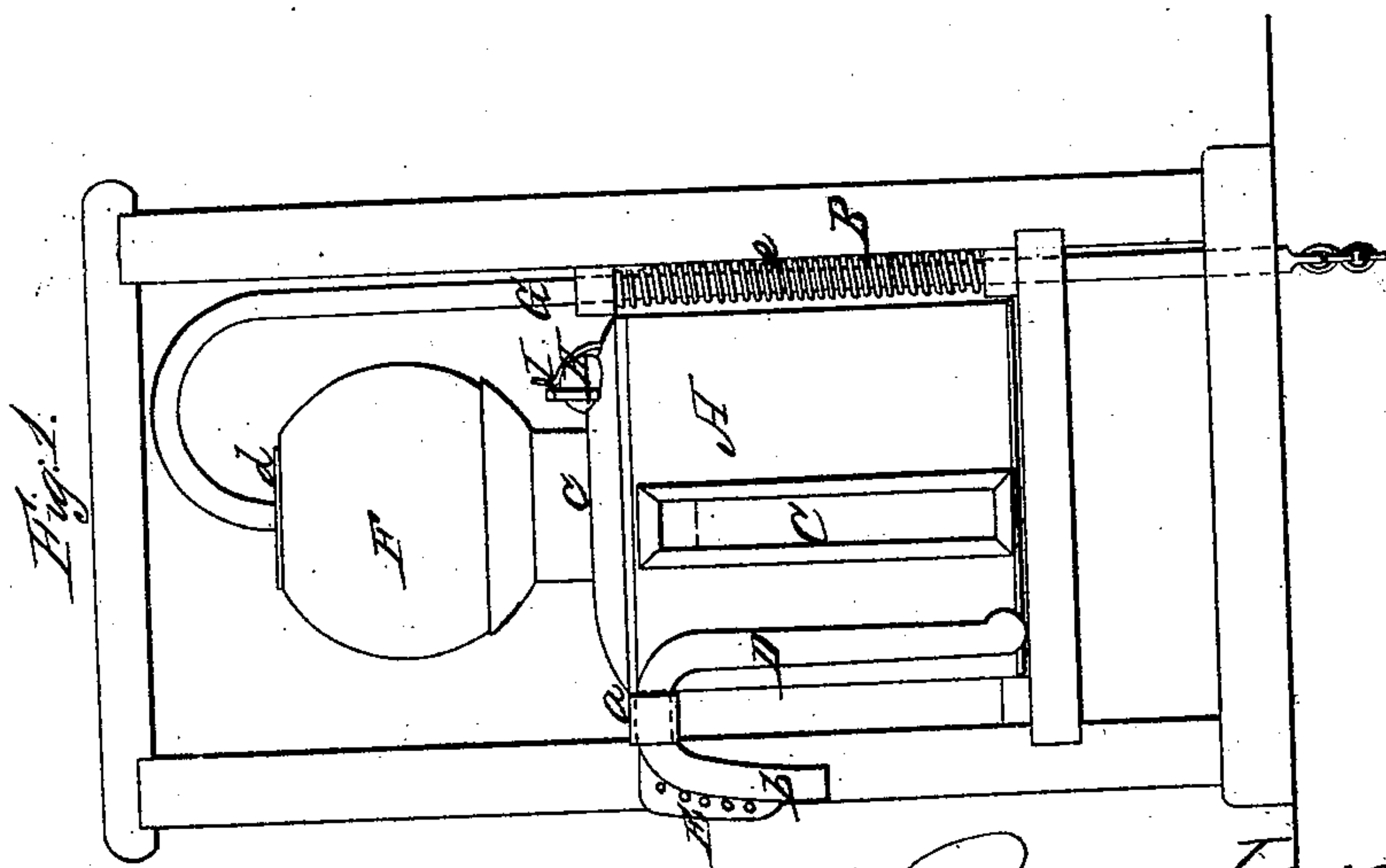
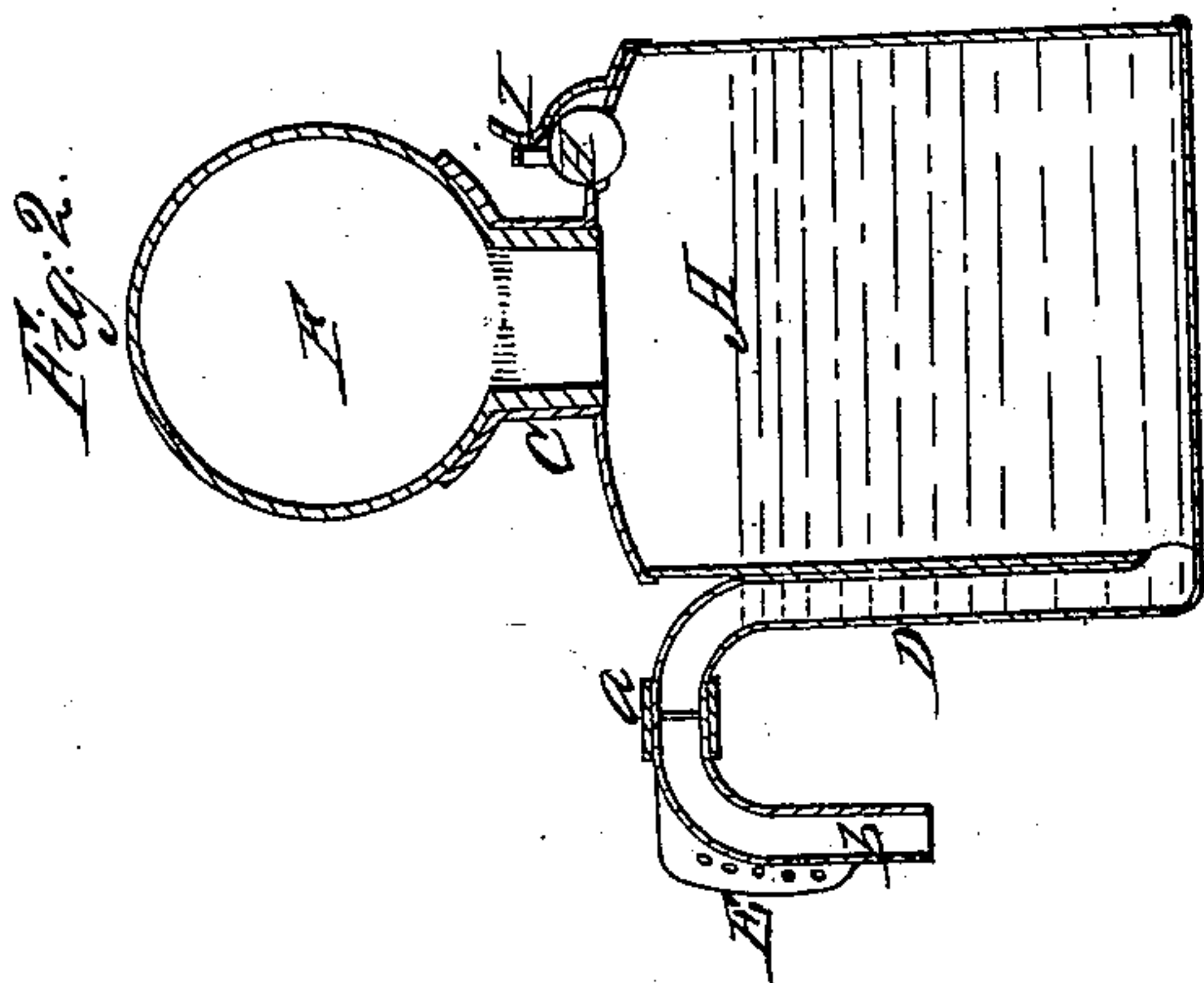


J. P. Whipple.

Filling Vials.

N^o 98,451.

Patented Dec. 28, 1869.



Witnesses:

*J. M. Coombs
J. H. Haynes*

Inventor:

*J. P. Whipple
per J. M. Coombs & J. H. Haynes*

UNITED STATES PATENT OFFICE.

JOHN P. WHIPPLE, OF WOONSOCKET, RHODE ISLAND.

IMPROVEMENT IN APPARATUS FOR FILLING VIALS.

Specification forming part of Letters Patent No. 98,451, dated December 28, 1869.

To all whom it may concern:

Be it known that I, JOHN P. WHIPPLE, of Woonsocket, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Apparatus for Filling Vials and other Bottles or Vessels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 represents a view in elevation of an apparatus constructed in accordance with my improvement, and Fig. 2 a sectional elevation of the filling portion of the same.

Similar letters of reference indicate corresponding parts.

The apparatus which forms the subject of my invention is mainly designed for filling vials, and embraces, among its conspicuous or leading features, a filling-can having a compressing and exhausting contrivance applied to its upper end, under operation, to effect its descent by the foot from below, and spring or automatic lift when the pressure of the foot is released, a spout arranged to open into the can at or near its lower end, and running upward, preferably to the level of the top of the can, and afterward bent or turned downward, a gage applied to or about the outlet end of the spout for regulating the height or depth to which the vial is to be filled, and a valve on top of the filling-can constructed or provided with attachments that in filling the can admit of the apparatus acting as a pump by or through the play of said valve, but so that the latter may be converted into a close cap or stopper when working the apparatus as a filler.

An apparatus thus constructed or provided possesses many advantages and conveniences as a filling device to vials or bottles.

Referring to the accompanying drawings, A represents the filling-can of the apparatus, which may be carried by a suitable frame, B, bolted or otherwise secured to a table or bench. This can, which may be of any desired size and shape, may be of either glass or metal; but if of metal, it is desirable to fit it with a glass, C, so that the height of the liquid in the can may be seen.

D is the spout, which is made to open into the can at or near its bottom, so that the en-

tire contents of the can may be expelled, but which spout is turned upward to or about the level of the top of the can, where it may be formed with a joint, *a*, so that a longer or shorter downward extension, *b*, may be attached, as required. This downward extension or outlet portion *b* to the spout has a perforated gage-plate, E, connected with it, for a wire or pin to pass through, to act as a gage to regulate the height to which the vial is to be filled, as hereinafter described.

Applied to the upper end or mouth, *c*, of the can A', is a compressing and exhausting contrivance, which may be variously constructed, but preferably of a bellows-like character, made up of a hollow rubber ball, F, arranged to establish an air-tight fit or joint with the mouth *c* of the can, and provided on its top with a piston, disk, or plate, *d*, connected with a stirrup or rod, G, that may have a chain attached to it below, so that the ball F may be compressed by or through pressure of the foot from below, while a retractor-spring, *e*, may, if necessary, be used to automatically lift or return the piston when such pressure is removed.

Near the top of the can is a valve, H, opening outward, and having a flexible or other suitable stop, I, so that accordingly as the latter is bent or adjusted to relieve or to hold down the valve, said valve is at liberty to play or made to form an immovable close cap or stopper, as circumstances may require.

In using the apparatus, the can A may be filled by removing the ball F and pouring in the liquid through the mouth *c*, or by bending back or adjusting the stop I, so that the valve H will be free to play, when, by placing the end *b* of the spout or a tube connected therewith into the liquid in the vessel or reservoir from which the charge is to be drawn, and alternately raising and lowering the piston at top of the can, the apparatus is made to act as a pump to charge the can A with liquid, which is sucked or drawn into it by the spout D, while air is expelled through the opening covered by the valve H.

To fill a vial, the stop I is bent down or adjusted so as to keep the valve H closed, and the outlet portion *b* of the spout entered within the vial as far as the gage-pin, passed through any of the perforations in the plate

E, will permit, when the ball F on top of the can is compressed, which action fills the vial, while in the return action of the ball all surplus liquid in the vial or liquid lying between the delivery end of the spout and gage or gage-pin will be sucked or drawn back into the can A. This gives room for corking the vial, and insures regularity in filling a series of vials in succession, the height of which filling may be adjusted by changing the gage-pin from one perforation to another in the gage-plate. In the return of air and liquid to the can, the outlet portion *b* of the spout is cleared, thus preventing dripping. Either thick or thin liquids may be worked by the apparatus.

Instead of the gage hereinbefore described, a round plate or disk of metal having small

holes through it for the escape of air may be fitted to surround the outlet portion *b* of the spout; or a shelf carrying a false top supported by a spring may be attached under the spout to the apparatus.

What is here claimed, and desired to be secured by Letters Patent, is—

The combination and arrangement of the chamber A, goose-neck D *b*, elastic bulb F, gage E, and spring-compression rod G, in such manner as to draw back to said chamber A any surplus fluid that may have been discharged therefrom, as shown and described.

JOHN P. WHIPPLE.

Witnesses:

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