A. E. RICH.

Apparatus for Effecting the Escape of Air from Bottles.

No. 211,789. Patented Jan. 28, 1879.

Fig. 1.

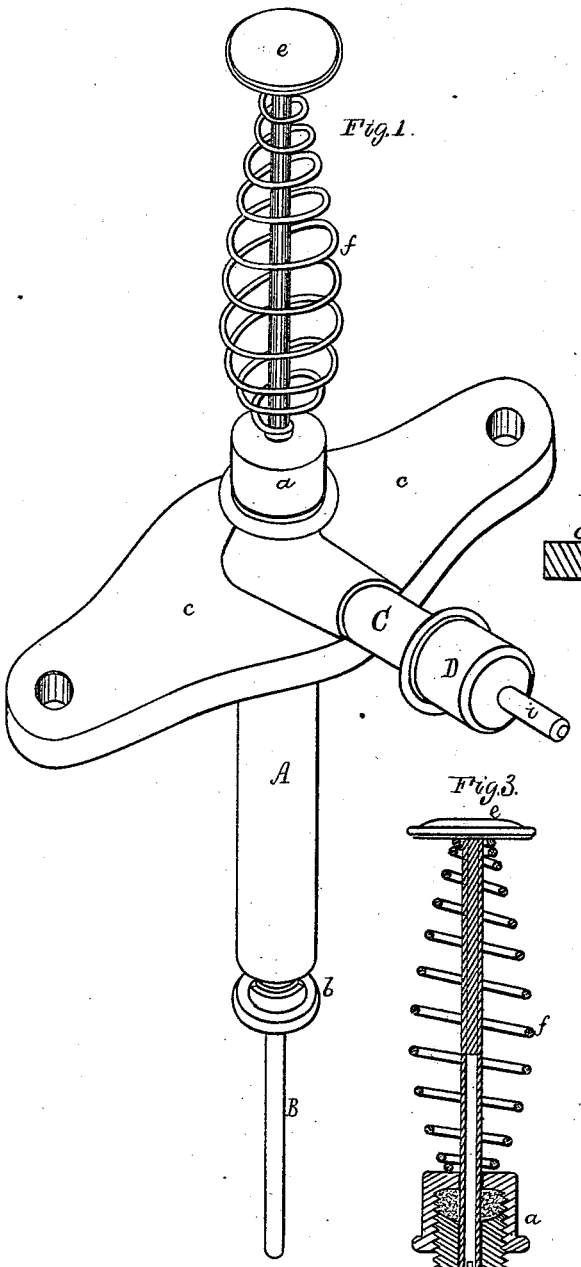

Fig. 2.

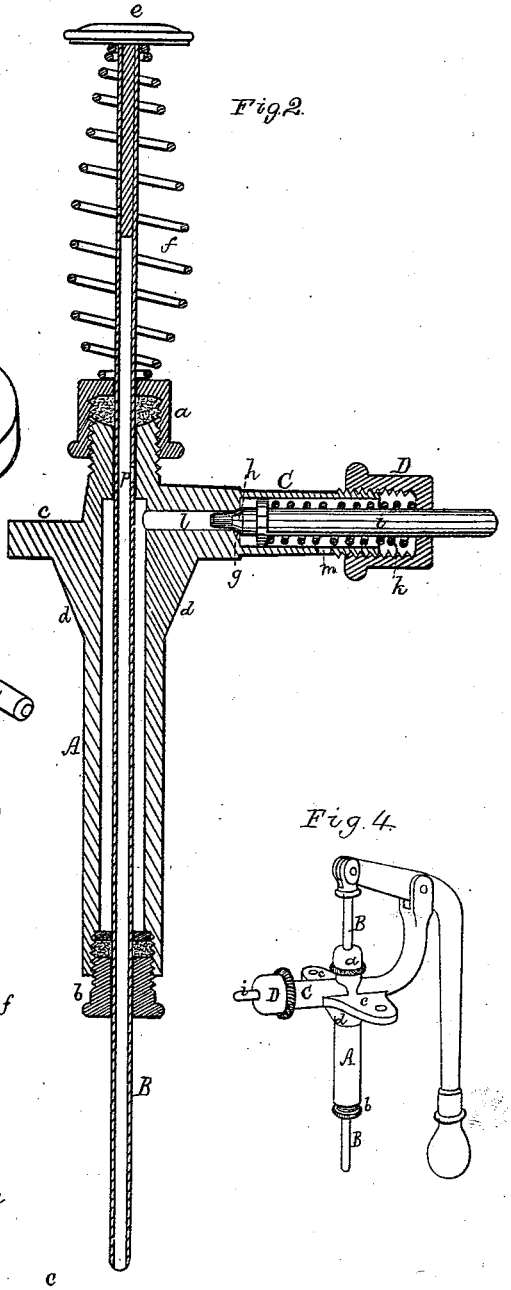

Fig. 3.

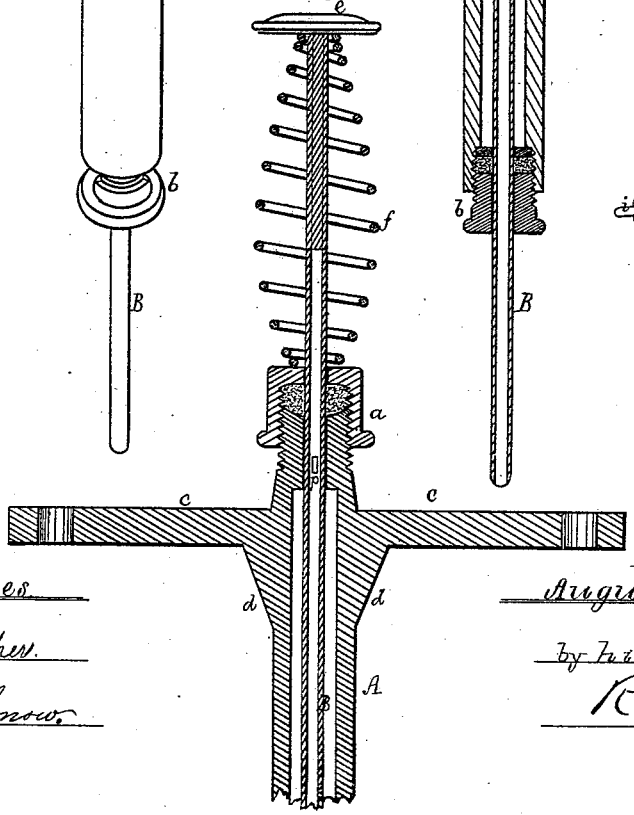

Fig. 4.

Witnesses.

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UNITED STATES PATENT OFFICE.

AUGUSTUS E. RICH, OF FALL RIVER, MASSACHUSETTS.

IMPROVEMENT IN APPARATUS FOR EFFECTING THE ESCAPE OF AIR FROM BOTTLES.

Specification forming part of Letters Patent No. **211,789**, dated January 28, 1879; application filed July 8, 1878.

To all whom it may concern:

Be it known that I, AUGUSTUS E. RICH, of Fall River, of the county of Bristol, of the State of Massachusetts, have invented a new and useful apparatus for effecting the escape of air from a bottle while in the process of being charged with an aerated or gasified liquid; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a perspective view, and Figs. 2 and 3 vertical sections, of it.

This apparatus is intended to be used on an ordinary bottling-machine, and with a bottle having its stopper provided with an induct and a valve to close such induct at its lower end, the stopper being closed upon the mouth of the bottle during the process of charging such bottle.

The bottling-machine to which the apparatus is adapted is of the kind that usually contains a corking-tube, into and down which and into the mouth of the bottle a cork is driven after the bottle may have been charged. The apparatus therefore enables such a bottling-machine to be used for charging stopped bottles having to their stoppers inducts and valves, as above set forth.

When the apparatus is detached from the bottling-machine the latter may be used to charge bottles and to cork them with ordinary corks. A bottling-machine of this kind is represented by Fig. 836, page 346 of "Knight's American Mechanical Dictionary, 1874."

In the drawings, A denotes a bored cylinder, provided with stuffing-boxes *a b* at its opposite ends, and also having a cross-head, *c*, and a conical extension, *d*, all being substantially as represented. Extending axially through the cylinder A and its stuffing-boxes is a long tube, B, whose bore is open at its lower and closed at its upper end, there being fixed to the latter a button or head, *e*. A helical spring, *f*, surrounds the tube B, and bears against the said button and the upper stuffing-box. Furthermore, there is a small hole, *p*, leading laterally out of the tube in the part of it that is between the stuffing-boxes when the tube is at its lowest position. Extending from the tube A at the cross-head is a tube, C, which, at its inner end, is provided with a valve-seat, *g*, against which a valve, *h*, fixed on a stem, *i*, bears. This stem passes through the tube C and a cap, D, screwed thereon. Between the said cap and the valve, and encompassing the stem, is a helical spring, *k*, whose tension or power of pressure may be increased by screwing up the adjustable cap. Through the valve-seat is an opening, *l*, for effecting connection between the tubes A and C. Furthermore, there is a small hole, *m*, leading downward out of the tube C.

In applying the apparatus to a bottling-machine, the cylinder A is to be inserted in the corking-tube thereof until the conical extension may bring up against the top of such tube, or a suitable packing applied thereto. This having been done, screws should be inserted through the cross-head and into the bottling-machine, so as to confine the apparatus in place. A bottle, with its stopper closed, having been suitably applied to the lower end of the corking-tube, the tube B is to be pressed down into the induct of the stopper, so as to force open the little valve of such induct. The induct is to be larger in diameter than the tube is, in order for the charging-liquor driven laterally into the corking-tube to freely pass through the induct and into the bottle. The air of the bottle will escape therefrom through the tube B and the opening of the valve-seat, the pressure of the air causing the valve to be forced off the seat. The air passing into the tube C will escape therefrom through the hole *m*. After the bottle may have been charged and removal of the hand of the attendant from the button of the tube B, the spring *f* will elevate the said tube to its highest position, to allow of the closing of the valve of the stopper and the removal of the bottle from the machine.

In the place of the spring *f* applied to the tube B, I sometimes use a lever fulcrumed or pivoted to the cross-head, such being as represented in perspective in Fig. 4.

My apparatus, though in some respects analogous to the bottle-filling apparatus described in the United States Patent No. 138,421, differs materially therefrom, as it has no charging-tube going down through the air-escape tube; but it has a movable auxiliary air-escape tube,

which, when used, is to be forced down into the bottle-stopper induct, and to open the valve thereto. And, furthermore, my apparatus is not to be directly applied to the mouth of a bottle, but is for use with the corking-tube of a machine for charging a bottle with a liquid, and subsequently corking such bottle by driving a cork into its mouth.

In the above-described apparatus I claim as my invention as follows, viz:

1. The tube B, open at its lower and closed at its upper end, and provided with the lateral opening *p*, in combination with the cylinder A, the vent-tube C, valve *h*, and its spring *k*, all being arranged and applied substantially as set forth.

2. The combination of the elevating-spring *f* with the tube B, the cylinder A, and the vent-tube C and its valve *h*, and spring *k*, all being substantially as specified.

3. The combination of the adjustable screw-cap D with the vent-tube C, its valve *h*, and spring *k*, combined with the cylinder A and tube B, as set forth.

4. The cylinder A, provided with the cross-head *c* and the conical extension *d*, the vent-tube C and valve *h*, and spring *k* and the tube B, all being arranged and applied essentially in manner and to operate as set forth.

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Witnesses:
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