(No Model.)

L. S. HOYT.

BOTTLE.

No. 302,565. Patented July 29, 1884.

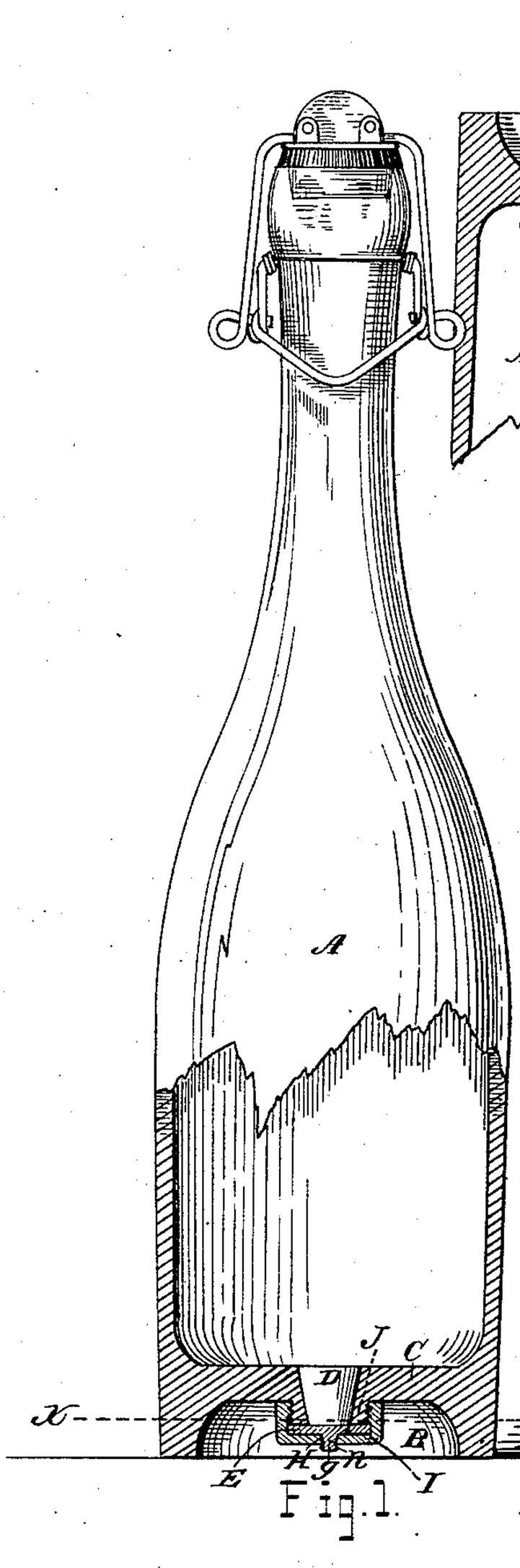

Fig. 1.

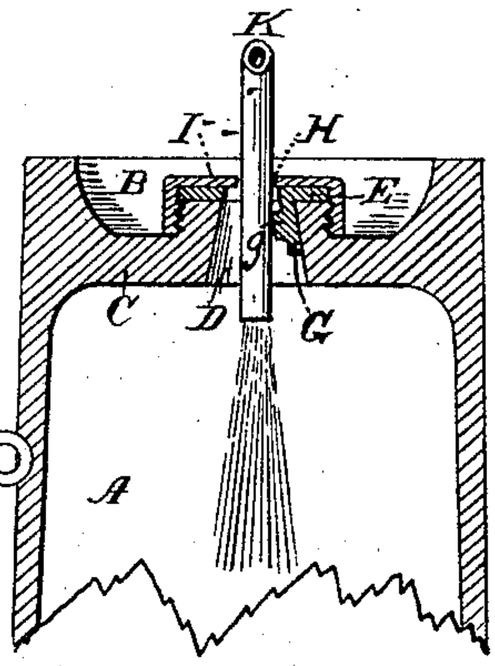

Fig. 5.

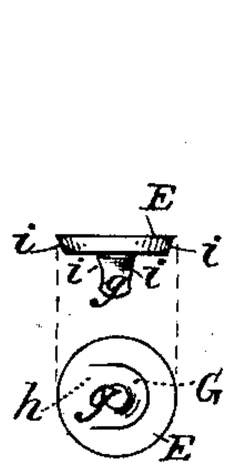

Fig. 2.

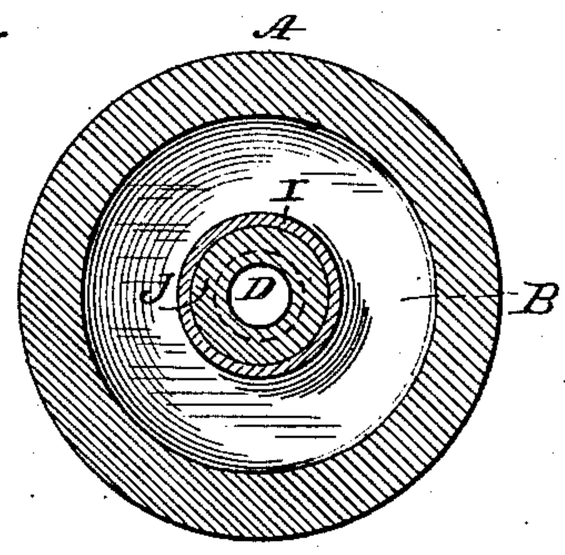

Fig. 3.

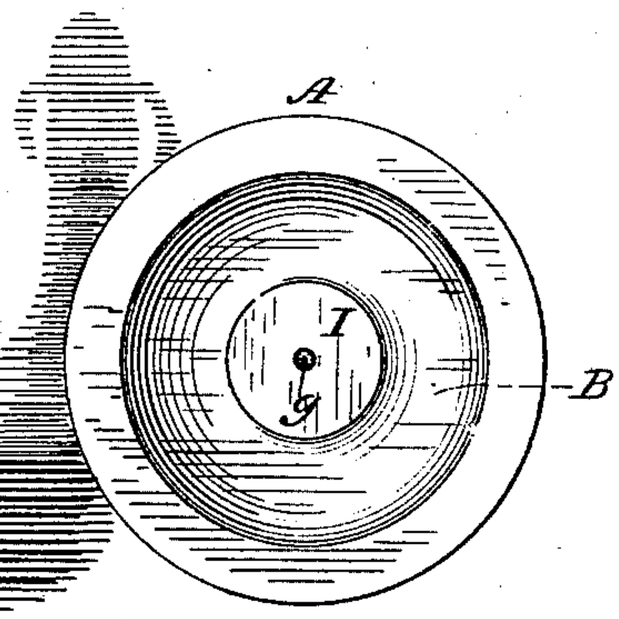

Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

LEWIS S. HOYT, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-FOURTH TO H. E. REMICK, OF SAME PLACE.

BOTTLE.

SPECIFICATION forming part of Letters Patent No. 302,565, dated July 29, 1884.

Application filed October 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, LEWIS STEBBINS HOYT, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Bottles Designed to Contain Aerated or Carbonated Liquid Beverages, of which the following is a specification.

The object of my invention is to produce a bottle or vessel which may, by automatically-arranged valves and constructed openings in the bottom of the same, be charged with effervescing liquid compounds, while the mouth or ordinary orifice of the bottle or vessel remains hermetically closed with my improved patent stopple, or in any other manner corked or sealed.

My invention consists in a bottle or vessel, preferably of glass, and similar in general outline to bottles at present used, but having a concaved depression in the under side of the bottom, with an outwardly and centrally projecting short neck screw-threaded at its outer circumference, through which is a smaller orifice for the admission of the filling-tube conveying the liquid compounds into the bottle. A self-closing combined valve and packing, of rubber or any suitable material conforming to the circular shape of said projecting neck, is placed upon the latter in a position which admits the valve to open inwardly when acted upon or displaced by the downward pressure of the filling-tube. Said packing and valve is protected and confined by a strong cap of metal, glass, or other suitable material, threaded interiorly and fitting the projecting neck, over which it is placed and held by the corresponding thread around the same. The top of this threaded cap has a central opening for the insertion of the filling-tube, which opening is closed on the withdrawal of said tube by a suitably-molded projection on the outer surface of the valve-flap, the effective action of said valve being further secured through the pressure of the surcharged liquids within the bottle.

A more explicit description of my invention is embodied in the drawings and in the description thereof, wherein—

Figure 1 represents an elevation, in part section, of a bottle embodying my improvement in its construction. Fig. 2 combines a side elevation and an under plan view of the rubber valve. Fig. 3 is a transverse section through line *x*, Fig. 1. Fig. 4 shows a plan of the bottle-bottom sealed. Fig. 5 is a longitudinal section of the lower part of my improved bottle in position and process of filling.

Referring to the letters, A is the bottle, hermetically closed at its top, the lower portion of which at B is so constructed as to form a suitable depression of sufficient depth to insure non-contact of the valve-cover or its parts when the bottle is in an upright position, as at Fig. 1.

C indicates the line of the bottom, which is pierced at D with an opening for the admission of the carbonated liquid. Said opening is in form like a cone, the walls diverging from the exterior to afford space for the valve or flap G, forming a part of the washer E, allowing said flap to rest against the side of the orifice when pushed there by the insertion of the filling-tube K, as exhibited in Fig. 5. The washer and valve is preferably formed in one piece, in shape circular, and in diameter sufficient to cover the surface of the threaded projection forming its seat. The central portion or flap, G, forming the valve, is cut semicircular with its hinge at *h*, and of proper circumference to close the smaller diameter of the aperture D, and has upon its outside floor a projecting nipple or plug, *g*, as in Fig. 2. Said plug is for the purpose of forming an auxiliary valve to close the tube-aperture H in the screw-cap I, which is threaded internally to fit the corresponding thread around the projecting neck J of the bottle-bottom C, the screw-cap I confining the valve and washer in position. The aperture H receives the plug *g*, which is forced, by the pressure of the liquid contents, so as to project through and expand, as at *n*, Fig. 1, beyond the outer circular edge of said opening H, forming a secure filling to the same. The edges both of valve and plug are cut at an angle, as at *i i*, Fig. 2, conforming to the angle of the walls of the openings in the bottom and screw-cap, so as to form a closer and firmer connection with the adjacent parts.

In the process of filling, the bottle or vessel is inverted, and in this position is held and moved—by the ordinary appliances for "bottling"—under the filling-tube. The latter is then moved downward, the mouth of said tube coming in contact with the projecting plug *g*, which presses the plug and valve G inwardly and against the wall or side of the conical opening D, when the liquid is injected through the tube and the bottle filled, as in Fig. 5. The filling-tube then being withdrawn, the pressure of the gas forming a component part of the liquid is exerted against the inner floor of the valve and restores it to its normal position, hermetically closing the bottle. To provide for the displacement and escape of air from within the bottle while injecting the contents, the filling-tubes are usually provided with longitudinal grooves upon their outer surface, or they may be of corrugated form.

Having described the construction and operation of my invention, what I claim is—

1. An improved bottle, as is herein described, having the depression B, the bottom C, provided with the conical smooth-surfaced opening D, the projecting threaded neck, the automatic valve E, having the plug *g*, with inclined walls, and sealing-cap I, having a conical orifice, H, all as and for the purpose set forth.

2. In combination with a bottle having a perforated bottom, C, the valve and packing E, having the projecting plug *g*, with inclined walls *i i*, and cap I, having the conical orifice H, as and for the purpose specified.

3. In an improved bottle, the threaded conically-perforated screw-cap I, in combination with the valve E, having plug *g*, with inclined walls *i i*, and bottle-bottom C, threaded and perforated, as herein set forth.

4. As an article of manufacture, a bottle having a conically-perforated bottom and a hermetically self-closing valve, constructed and operating as herein described, and specially constructed to contain aerated liquids, as specified.

In testimony whereof I have signed this specification in presence of two subscribing witnesses.

LEWIS S. HOYT.

Witnesses:

WM. H. MILLER,

H. E. REMICK.