



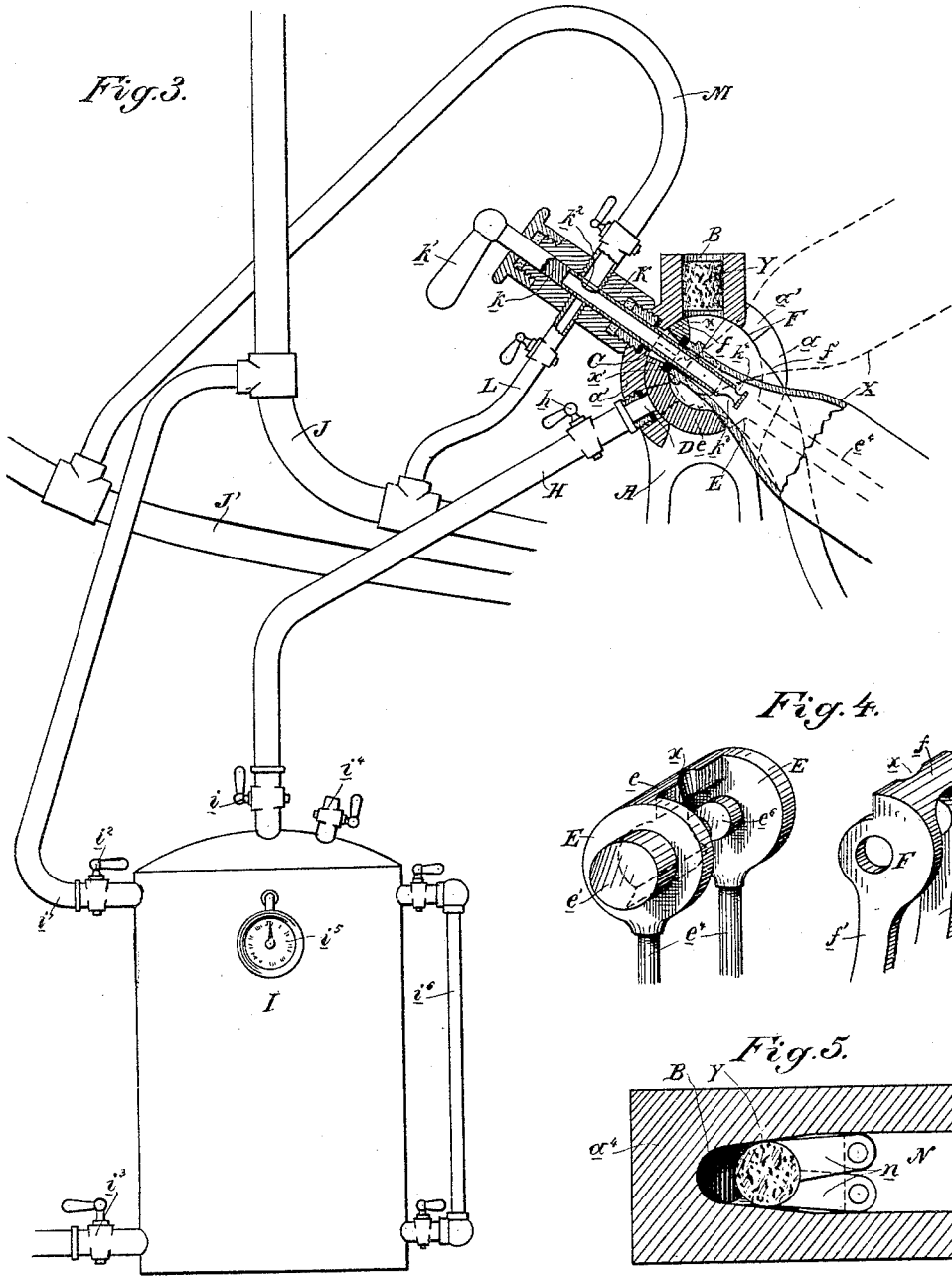
(No Model.)

2 Sheets—Sheet 2.

U. BACHMANN.  
BOTTLING APPARATUS.

No. 459,245.

Patented Sept. 8, 1891.



Witnesses,  
J. H. Hulse  
H. C. Lee.

Inventor,  
Ulrich Bachmann  
By Dewey & Co  
attys

# UNITED STATES PATENT OFFICE.

ULRICH BACHMANN, OF SAN FRANCISCO, CALIFORNIA.

## BOTTLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 459,245, dated September 8, 1891.

Application filed November 12, 1890. Serial No. 371,224. (No model.)

*To all whom it may concern:*

Be it known that I, ULRICH BACHMANN, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Bottling Apparatus; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an apparatus especially adapted for the bottling of what is termed "sparkling liquid"—namely, any liquid impregnated with gas.

My invention consists in the novel bottle-holders, the construction and arrangement of the several openings through which the gas and liquid are supplied and the cork inserted, the filling and corking mechanism, and other details, all of which will be hereinafter fully described, and specifically pointed out in the claims.

The object of my invention is to provide a perfectly operative apparatus of this class, in the working of which and during the entire operation of bottling there will be no leakage and each bottle will be filled equally and rapidly.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a half-elevation and half-section of my apparatus. Fig. 2 is an end view. Fig. 3 is a vertical section. Fig. 4 shows a detail view of the two clamps. Fig. 5 is a horizontal section showing the cork-plunger.

A is a frame or stand the head of which is cylindrical and is formed in two sections, the lower or fixed one *a* and the upper or removable one *a'*, the two being secured together by means of bolts *a<sup>2</sup>*, passing through ears or lugs *a<sup>3</sup>*. The line of separation between the two sections is in a plane at an angle to the perpendicular, whereby the several openings may be properly located within the upper section *a'*. These openings are as follows: In the top is the vertical opening B, having upwardly-extending guide-walls inclosing the cork-space. In the side is the opening C, located between the perpendicular and horizontal planes, and lower down and below the horizontal plane is the third opening D. All of these openings are radial with respect to the cylindrical head of the frame.

Within the head of the frame or stand are seated and operate the holders for the bottle, and which also form the valves for controlling the openings. One of these holders is E. It is the outer and longer one. It consists of a curved head fitted closely within one side of the frame-head, extending its whole inner length and having ends *e*, which fit closely against the ends of the frame-head. It is pivoted so as to swing in its seat by means of gudgeons *e'*, projecting outwardly from its ends and journaled in the ends of the frame-head, said gudgeons extending through and being fitted with clips *e<sup>2</sup>* and yokes *e<sup>3</sup>*, whereby they are held and the curved head of the holder tightened in its seat.

From the ends *e* extend downwardly through the open bottom of the frame-head the arms *e<sup>4</sup>*, having a cross-piece *e<sup>5</sup>* at their lower ends. Upon these arms is fitted and adapted to slide a bottle-supporting bar G, which is pressed upwardly by a spring *g*, seated between it and the cross-piece below. The bottle X rests on the bar G.

The other or inner holder is F and opposes the first holder, being fitted between its ends. This holder has a curved head and ends *f*, which are pivoted upon pins *e<sup>6</sup>*, extending inwardly from the ends of the outer holder. From the ends of the inner holder extend downwardly arms *f'*, connected at their lower ends and provided with a catch-link *f<sup>2</sup>*, which is adapted to engage a hook *e<sup>7</sup>* on the cross-piece *e<sup>5</sup>* of the arms of the outer holder. The two holders have their heads opposing each other like the jaws of a pair of tongs, and between them is made the filling-aperture *x*, half in each and directly over the bottle's mouth. In the socket formed between them is a washer *x'*, against which the head of the bottle is forced tightly by the spring *g* below.

Fitted suitably in the opening D in the frame-head is a pipe H, controlled by a cock *h*. This pipe is connected with the upper end of a gas-receiver I, the connection being controlled by a cock *i*. This receiver is connected at its upper portion by a pipe *i'*, controlled by a cock *i<sup>2</sup>*, with a pipe J, which is connected with a vessel unnecessary herein to show and which contains gas under pressure. The receiver I has at its base a cock-controlled out-

let  $v^3$ , at its top a cock-controlled air-vent  $v^4$ , on its face a gas-indicator  $v^5$ , and on its side a water-gage  $v^6$ .

Into the opening C of the frame-head is suitably fitted a pipe K, having on one side a cock-controlled connection I, with the gas-pipe J and on the other side a cock-controlled connection M with the pipe J', leading from the liquid-vessel, unnecessary herein to show. Within this pipe K is fitted the filling-pipe  $k$ , suitably packed and extending completely through it. The filling-pipe has a longitudinal and a rotary movement with pipe K and is provided with a handle  $k'$  on its outer end, by which it is manipulated. It has a port  $k^2$  in one side, and in its inner end upon opposite sides it has an inlet-opening  $k^3$  for the liquid and an upper exit-opening  $k^4$  for the gas.

Upon the upper section  $a'$  of the frame-head is formed the horizontal passage  $a^1$  for the cork Y, said passage communicating with the opening B. This passage contracts at its inner end, so as to render it necessary to squeeze the cork into it. In the passage operates a plunger N, the inner end of which is provided with pivoted overlapping plates  $n$ , which provides for the necessary contraction of the plunger end as it presses the cork into the contracted end of the passage and forces it into the cork-opening B.

O is a vertical rammer directly above the cork-opening B. It is guided in a fixed frame  $o$  and has a weight W. With its upper end is connected a cord or cable  $o'$ , which passes over a pulley, and its lower or depending end is fitted with a ring  $o^2$ , adapted to engage a fixed pin  $o^3$ , whereby the rammer is normally suspended.

The operation of the apparatus is as follows: The gas-receiver I is first filled with gas. This is done by filling it with water through the lower connection  $v^3$ , all the connections at its upper portion being closed except the air-vent  $v^4$ , which permits the air to escape as the water enters. Then the pipe  $v^7$  at its upper portion is opened partially, while the lower connection  $v^3$  is wide open. The water now escapes below, while the gas from pipe J enters the receiver through pipe  $v^7$  above, and the indicator  $v^5$  will show the amount of gas which has entered. When the desired amount has passed in the pipe  $v^7$  is closed and the lower outlet  $v^3$  is also closed when the water has run out. The bottle before being placed in the apparatus is filled with water. Then the two holders are set to admit the upper end of the bottle, the bottom of which rests on the support G below and is pressed upwardly by the spring  $g$ , so that the top of the bottle presses tightly against the washer. The holders are closed upon the bottle and are held by fitting the link  $f^2$  over the hook  $e^7$ . Then the bottom of the bottle is turned upwardly, so as to turn its mouth downwardly, said bottle turning with the swinging holders. When the mouth of the bottle is turned far enough down, the filling-

aperture  $x$  in the head of the holders comes into line with the opening D in the frame-head. Then the cock  $h$  of pipe H is opened and also the cock  $i$  into the receiver I is opened. The water in the bottle now flows out through pipe H into receiver I, while the gas in the receiver flows upwardly through said pipe into the bottle. Now the mouth of the bottle is swung upwardly, the opening  $x$  passing out of line with opening D and being closed by the solid portion of the frame-head. When this opening reaches the opening C in the frame-head, the filling-pipe  $k$  is pushed down through it and into the bottle, projecting therein to the distance it is desired to fill the bottle. The pipe  $k$  is turned axially, so that its side port  $k^2$  comes into communication with the cock-controlled connection L with the gas-pipe J, and this being opened the gas from pipe J will pass into the bottle until it reaches a pressure equal to that in the gas-vessel. Then pipe  $k$  is turned so as to bring its side port  $k^3$  into communication with the cock-controlled connection M of pipe J' from the liquid-vessel, and thereupon the liquid passes into the bottle, while the gas in the bottle escapes through the liquid-channels. The filling continues until the liquid rises in the bottle and covers the upper opening  $k^4$  in the end of the pipe  $k$ , whereupon the passage of liquid into the bottle automatically stops. Thus all the bottles can be filled equally. Now pipe  $k$  is lifted from the bottle and the mouth of the latter is turned up to a vertical position. Previous to this and before the filling begins a cork Y is forced by plunger N into the cork space or opening B, and when the opening  $x$  and the mouth of the bottle come under the cork the ring  $o^2$  is released and the weighted rammer O descends and forces the cork home. Then the holders are once more moved to swing their lower connections outwardly into convenient position, and the link is removed from the hook, so as to relieve the holders, whereupon the bottle may be easily removed.

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

1. In a bottling apparatus, the combination of the frame having the cylindrical head with suitable openings, a support for the bottom of the bottle, and the swinging opposing holders carrying the neck of the bottle and bringing its mouth into alignment with the openings in the frame-head, said holders having heads fitting in the frame-heads and controlling its openings and having an opening between them in line with the mouth of the bottle, substantially as herein described.

2. In a bottling apparatus, the combination of the opposing swinging holders carrying the bottle, the arms of one of said holders having the cross-piece, the sliding support on said arms for the bottom of the bottle, and the spring between said support and cross-piece, substantially as herein described.

3. In a bottling apparatus, the combination of the opposing swinging holders carrying the bottle, the depending arms of said holders, and the ring and hook by which said arms are connected and disconnected to lock and relieve the holders, substantially as herein described.

4. In a bottling apparatus, the combination of the opposing swinging holders carrying the bottle, the depending arms of said holders, the ring and hook by which they are connected, the sliding bottle-support on the arms of one of said holders, and the spring under said support, substantially as herein described.

5. In a bottling apparatus, the combination of the frame having the cylindrical head with openings, the outer and inner bottle-holders the heads of which fit within the frame-head and control its openings, the gudgeons of the outer holder, by which it is pivoted in the frame-head, and the pins of said holder, on which the inner holder is pivoted, substantially as herein described.

6. In a bottling apparatus, the frame-head having the lower opening D, a support for the bottom of the bottle, and the swinging bottle-holders mounted in said head and adapted to carry the mouth of the bottle into communication with opening D, in combination with the gas-receiver I and the cock-controlled pipe connecting said receiver with the opening D, substantially as herein described.

7. In a bottling apparatus, the frame-head having the opening D, a support for the bottom of the bottle, and the swinging holders mounted in said head and adapted to carry the mouth of the bottle into communication with opening D, in combination with the gas-receiver I, having the cock-controlled exit-pipe below, the cock-controlled gas-inlet pipe above, and the cock-controlled pipe connecting said receiver with the opening D, substantially as herein described.

8. In a bottling apparatus, the frame-head having the opening C, a support for the bottom of the bottle, and the swinging holders adapted to carry the mouth of the bottle into communication with said opening, in combination with the pipe K in said opening, hav-

ing cock-controlled connections with the gas and liquid vessel, and the longitudinally-movable and turning filling-pipe in pipe K, having a side port adapted to be brought into communication successively with the gas and liquid connections, substantially as herein described.

9. In a bottling apparatus, the frame-head having the opening C, a support for the bottom of the bottle, and the swinging holders adapted to carry the mouth of the bottle into communication with said opening, in combination with the pipe K in said opening having cock-controlled connections with the gas and liquid vessel, and the longitudinally-movable and turning filling-pipe in pipe K, having a side port adapted to be brought into communication successively with the gas and liquid connections, and side ports on its lower end for admitting the liquid and allowing the gas to escape and stopping the inflow of liquid when the bottle is full, substantially as herein described.

10. In a bottling apparatus, the frame-head having the opening B, a support for the bottom of the bottle, and the swinging holders adapted to carry the mouth of the bottle into line with said opening, in combination with the horizontal cork-passage in the frame-head communicating with opening B, the plunger in said passage for forcing the cork into the opening, and the rammer for driving it into the bottle-mouth, substantially as herein described.

11. A bottling apparatus consisting of a frame having a head provided with the openings B, C, and D, swinging bottle-holders mounted in said head and controlling the openings, said holders carrying the mouth of the bottle into successive alignment with said openings, a gas-receiver connected with opening D, a gas and liquid filling device connected with opening C, and a cork-seating device connected with opening B, substantially as herein described.

In witness whereof I have hereunto set my hand.

ULRICH BACHMANN.

Witnesses:

S. H. NOURSE,  
H. C. LEE.