

A. E. MUNSON.
MACHINE FOR BOTTLING AND SYRUPING AERATED BEVERAGES.
APPLICATION FILED JAN. 18, 1909.

934,454.

Patented Sept. 21, 1909.
3 SHEETS—SHEET 1.

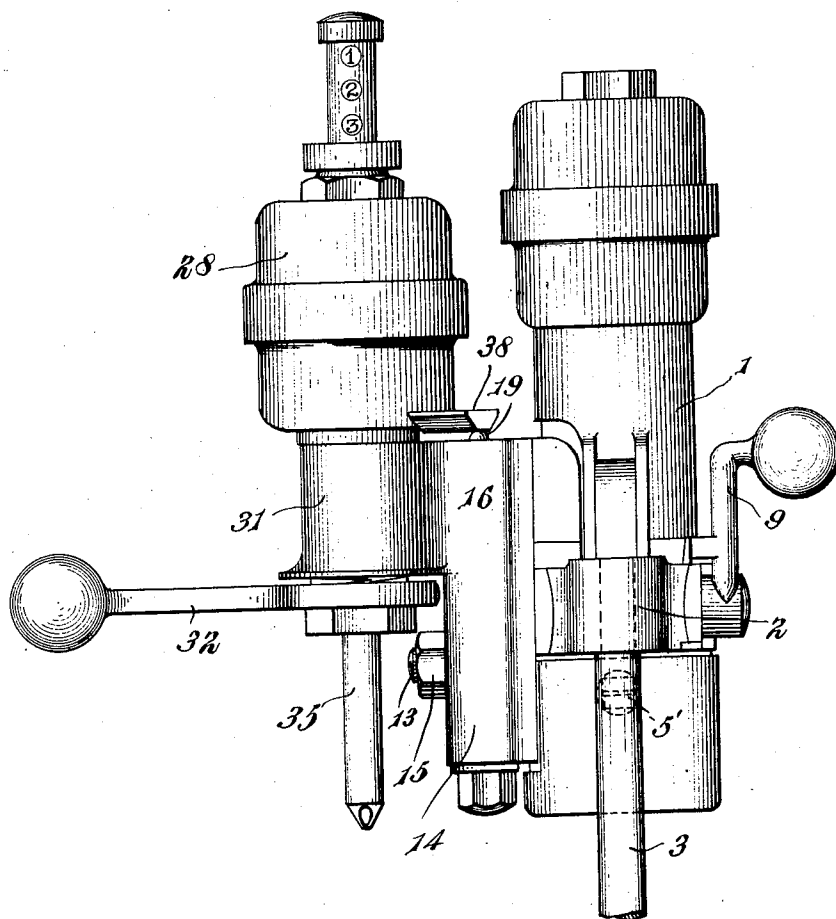


Fig. 1.

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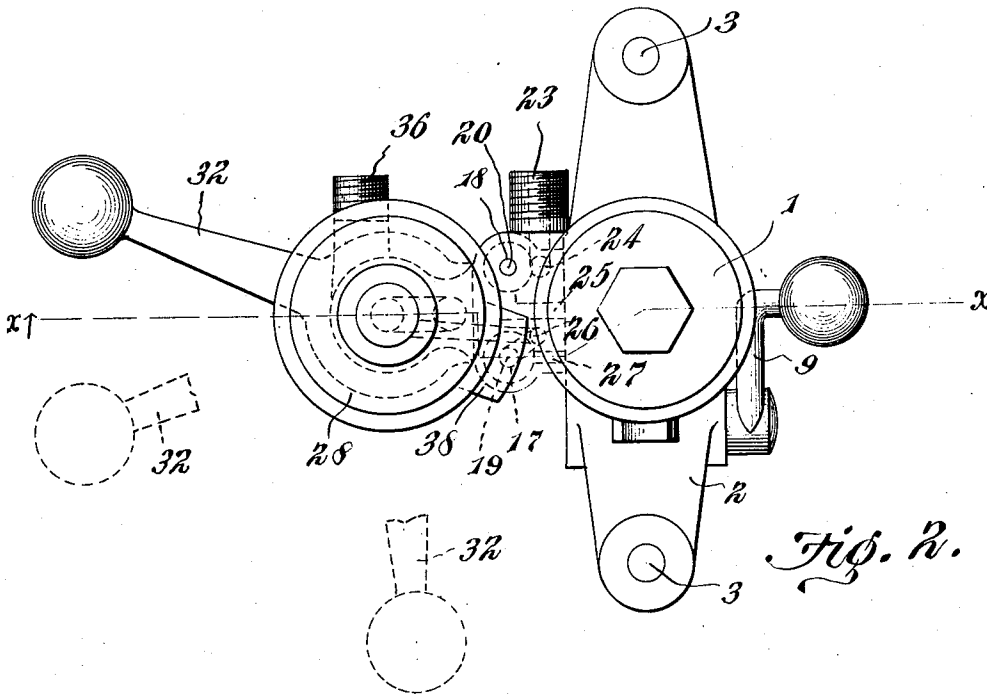
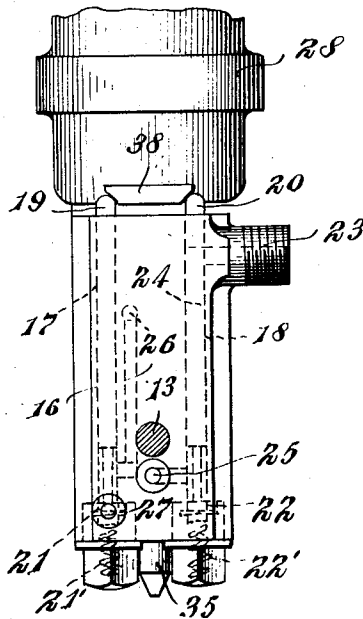


Fig. 4.



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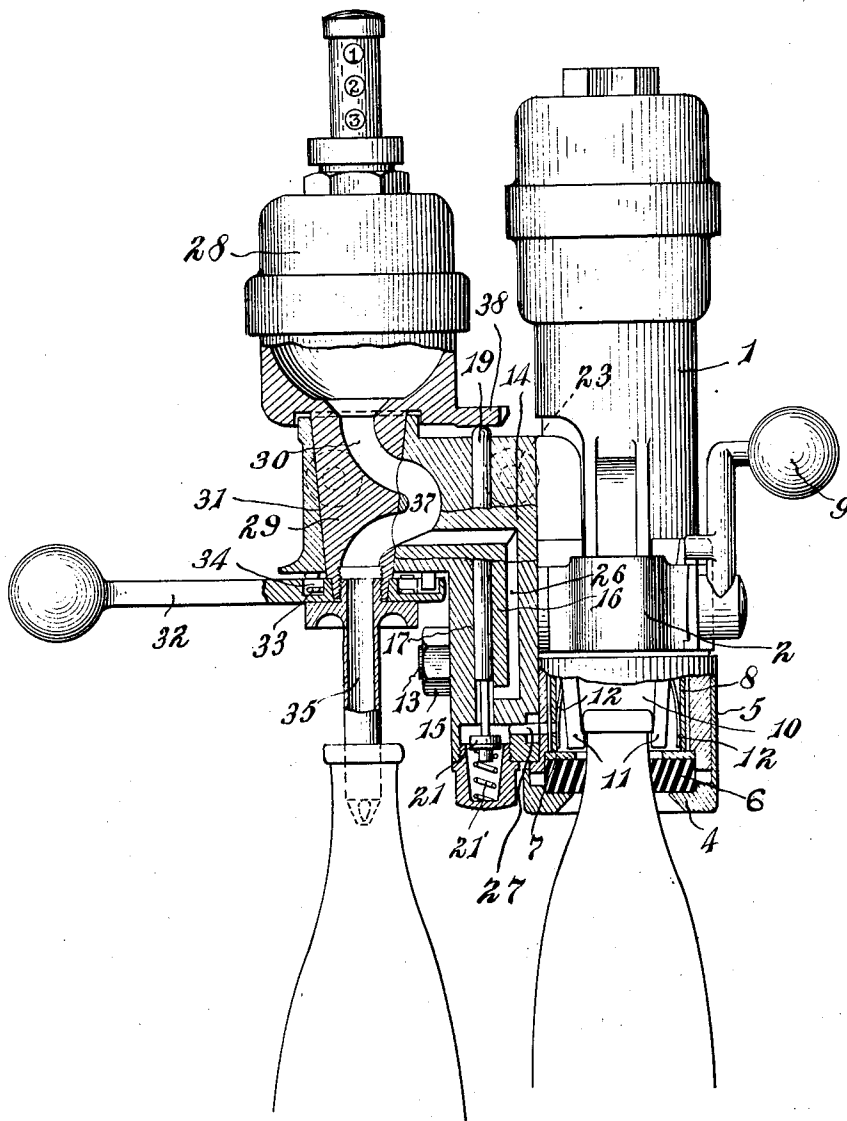
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3 SHEETS—SHEET 3.

Fig. 3.



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UNITED STATES PATENT OFFICE.

ALFRED E. MUNSON, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO JOHN J. HAYES, OF CHICAGO, ILLINOIS.

MACHINE FOR BOTTLING AND SYRUPING AERATED BEVERAGES.

934,454.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed January 18, 1909. Serial No. 472,906.

To all whom it may concern:

Be it known that I, ALFRED E. MUNSON, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Machines for Bottling and Syruping Aerated Beverages, of which the following is a specification.

My invention relates to machines employed in the bottling and syruping of aerated beverages.

The object of my invention is to improve the construction of a machine of the character mentioned in such a manner as to adapt the same to obviate all possibility of wasting the aerated liquid passed therethrough during the bottling of said liquid.

A further object of my invention is to improve the construction of a machine of the character stated so as to adapt the same to be of the highest possible efficiency.

Other objects will appear hereinafter.

With these objects in view my invention consists generally in improvements in a machine characterized as above mentioned, by the embodiment of which in such machines eliminates all possibility of wasting of a comparatively large percentage of aerated liquid which in machines of this design at the present time is at certain stages in the process of bottling thrown out as waste.

My invention further consists in certain details of construction which will be hereinafter fully described and particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a side elevation of the machine in which is embodied my improvement. Fig. 2 is a top plan view thereof. Fig. 3 is a partial side elevation and a partial sectional view thereof, the sectional portion being taken substantially on the line $x-x$ of Fig. 2, and certain portions being broken away in said section, and Fig. 4 is a detail side elevation of a portion of the machine.

Referring now to the drawings 1 indicates the tubular cylindrical body portion of the machine in which is embodied my invention, the same being supported so as to be vertically movable in a horizontally disposed bracket member 2, the extremities of

which are fixedly secured to rod supports 3, the lower extremities of the latter being ordinarily secured to the floor. A rubber ring 6 is supported on the flanges 4 of the sleeve 5 which is fixed to the lower end of chamber 1 by means of a screw 5'. A fixed sleeve 8, the lower extremity of which is in engagement with said washer, holds said ring 6 against upward movement. A lever 9 rockingly mounted in bearings provided in the member 2 is in operative connection with the body portion 1, the same being so connected with the latter that an upward rocking thereof causes the elevation of said body. Upon such actuation, the ring 6 is compressed, hence causing the inside diameter thereof to be lessened. By such a construction and such actuation thereof, the neck of a bottle of proper dimensions inserted into the lower extremity of the body 1 will be firmly gripped upon the compression of the ring 6, thereby forming an airtight chamber 10 above the mouth of the bottle. 11 indicates arms adapted to yieldingly engage the bead ordinarily formed at the mouth of the bottle, leaf springs 12 in engagement with said arms facilitating such engagement.

Secured to the body 1 by means of an integral bolt 13 projecting from said body, through the portion 14 thereof, and a nut 15 threaded upon said bolt, is a member 16. The portion 14 of said member 16 is provided with two longitudinally extending chambers 17 and 18, in which are reciprocally mounted stems 19 and 20 respectively of disk valves 21 and 22, the lower portions of said chambers being enlarged so as to accommodate said valves. Coil springs 21' and 22' engaging the under surface of the valves 21 and 22 normally hold the latter in closed position, that is in a position closing the lower extremities of the upper or reduced end portions of said chambers. The enlarged portion of the chamber 18 communicates with an inlet port 23 by means of a passage 24, said port being, when the machine is in use, connected with aerated liquid supplying means. A passage 25 establishes communication between the lower end portion of the reduced portion of the chamber 18 and the chamber 10 of the body 1. By such construction as the stem 20, and hence the valve 22 is lowered, aerated liquid will be admitted into the chamber 10, and hence

into the bottle whose neck is secured therein. Because of said chamber 10 being air-tight, as the aerated liquid is forced into the bottle, a means of escapement for the air naturally contained in the bottle must be provided. Such escapement is facilitated through the valved chamber 17 and a passage 26, a passage 27 establishing communication between the chamber 10 and the lower end enlarged portion of said chamber 17:

28 indicates a syrup gaging reservoir, the lower end portion of which is formed into an integral tapering plug 29, through which leads a broken passage 30 from said reservoir. Said plug portion is snugly and rotatably mounted in a casing forming portion 31 of the member 16. Fixed, as by a key, to the lower end portion of said plug 29 is a lever 32, by means of which said plug and reservoir may be rotated. A coil spring 33 resting in an annular channel 34 provided in the upper surface of the inner end portion of the lever 32 facilitates a constant snug connection between the valve 29 and its casing. In threaded connection with the lower extremity of said plug is a nozzle 35 communicating with the lower extremity of the passage 30. By rotating said plug into a certain position, the upper portion of the passage 30 may be brought to register with an inlet 36, which when the machine is in use communicates with a syrup supply source. Upon such registration, syrup will be forced up into the gage reservoir 28. As said plug is rotated into another position the adjacent extremities of the passage portions 30 may be brought to register with the extremities of a return passage 37 provided in the casing portion 31 of the member 16, in which event the syrup contained in the reservoir 28 will pass through the passages 37 and 30 and the nozzle 35, the same being deposited into a bottle provided below said nozzle.

The before mentioned exhaust passage 26 leading from the reduced portion of the chamber 17 communicates with the return passage 37 as clearly shown in Fig. 3. Hence, when the valve 21 is lowered, a continuous passage is formed from the chamber 10 through the nozzle 35.

The actuation of the valves 21 and 22, and hence the governing of the flow of liquid into the chamber 10 and the exhausting of air therefrom, is accomplished through the lever 32 by means of a beveled projection 38 projecting from the lower edge of the reservoir 28, said projection being adapted, when the reservoir is rotated, to separately engage and depress the upper exteriorly projecting extremities of the valve stems 19 and 20.

In the operation of the machine a bottle is secured with its neck extending into the body 1 of the machine as before described, a second bottle being placed under the nozzle, each of the bottles before being posi-

tioned under the body 1 to be filled with aerated liquid, being placed under the nozzle so as to be provided with syrup. In the filling of the bottle with the aerated liquid the lever 32 is actuated, that is said lever is moved backwardly and forwardly, a number of times so as to open and close the valves 21 and 22, it being obvious, as before described, that only a certain amount of liquid may each time be forced into the bottle whereupon the compressed air caused by displacement thereof by liquid must be exhausted therefrom. Hence, before a bottle is entirely filled, said lever must be actuated a number of times. In exhausting the compressed air from said bottle a quantity of aerated liquid deposited in said bottle is each time carried with the exhausting air because of the great velocity of the latter in escaping caused by the compression thereof. This process is known as "sniffing" the filling bottle. Owing to the fact that the passage 26 opens into passage 37, it will be seen that the out rushing air and liquid will assist in the discharge of the syrup from chamber 28. In machines of this type in general use at the present time such liquid as is carried along with the exhausting air is wasted, the same being carried through an air exhaust pipe with the exhausting air and thrown generally into a waste receiving conduit. Because of such construction it is estimated in the certain type of machines shown in the accompanying drawings that approximately 10% of the aerated liquid is wasted. By the provision of the passage 26, such liquid will all be utilized, none being wasted, the same being all deposited in the bottle positioned under the nozzle, the escaping air being exhausted through the mouth of said bottle.

My invention lies wholly in the passage connecting the exhaust valve chamber and the syrup eduction passage, namely the passage 26. For this reason only enough of the bottling and syruping machine has been shown and described as will enable one to fully understand the nature of my improvement, the remaining undescribed parts of said machine having no bearing whatsoever on my invention.

By the provision in a machine, of a nature as described, of the improvement as described, a machine of a higher efficiency will be provided, such provision resulting in a labor and hence a finance saving machine, as compared with machines of such type in general use at the present time.

While I have described my invention with special reference to machines of a certain type and construction, I do not wish to be limited thereto, as the same might be embodied without departing from the spirit of my invention, in any other machine to which it is applicable.

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

1. In a bottling machine, the combination
5 of a filling chamber; a supply chamber for
syrup, provided with a nozzle for filling a
bottle; mechanism for operating said cham-
bers to fill one bottle and, during the same
time to supply another bottle with syrup;
10 mechanism for snifting the filling bottle;
and a connection and valve for conducting
the snifted air and liquid into the discharge
of the syrup chamber, substantially as de-
scribed.

15 2. In a bottling machine, the combina-
tion of a filling chamber, inlet and exhaust
valves 22 and 21 for said chamber; rods 20
and 19 for operating valves 22 and 21; in-

let pipe leading to inlet valve 22; syrup
chamber 28 attached to the filling chamber 20
and provided with the plug 29 having the
broken passage 30; inlet 36 for chamber 28;
return passage 37 in the casing; exhaust
passage 26 in the casing and connecting the
exhaust valve with the passage 37; projection 25
38 on chamber 28 for operating rods 19 and
20; and means for oscillating chamber 28,
substantially as described.

In testimony whereof I have signed my
name to this specification in the presence of 30
two subscribing witnesses.

ALFRED E. MUNSON.

Witnesses:

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HELEN F. LILLIS.