

No. 847,760.

PATENTED MAR. 19, 1907.

C. E. GATES.
 SYRUP DISPENSING APPARATUS.
 APPLICATION FILED JUNE 18, 1906.

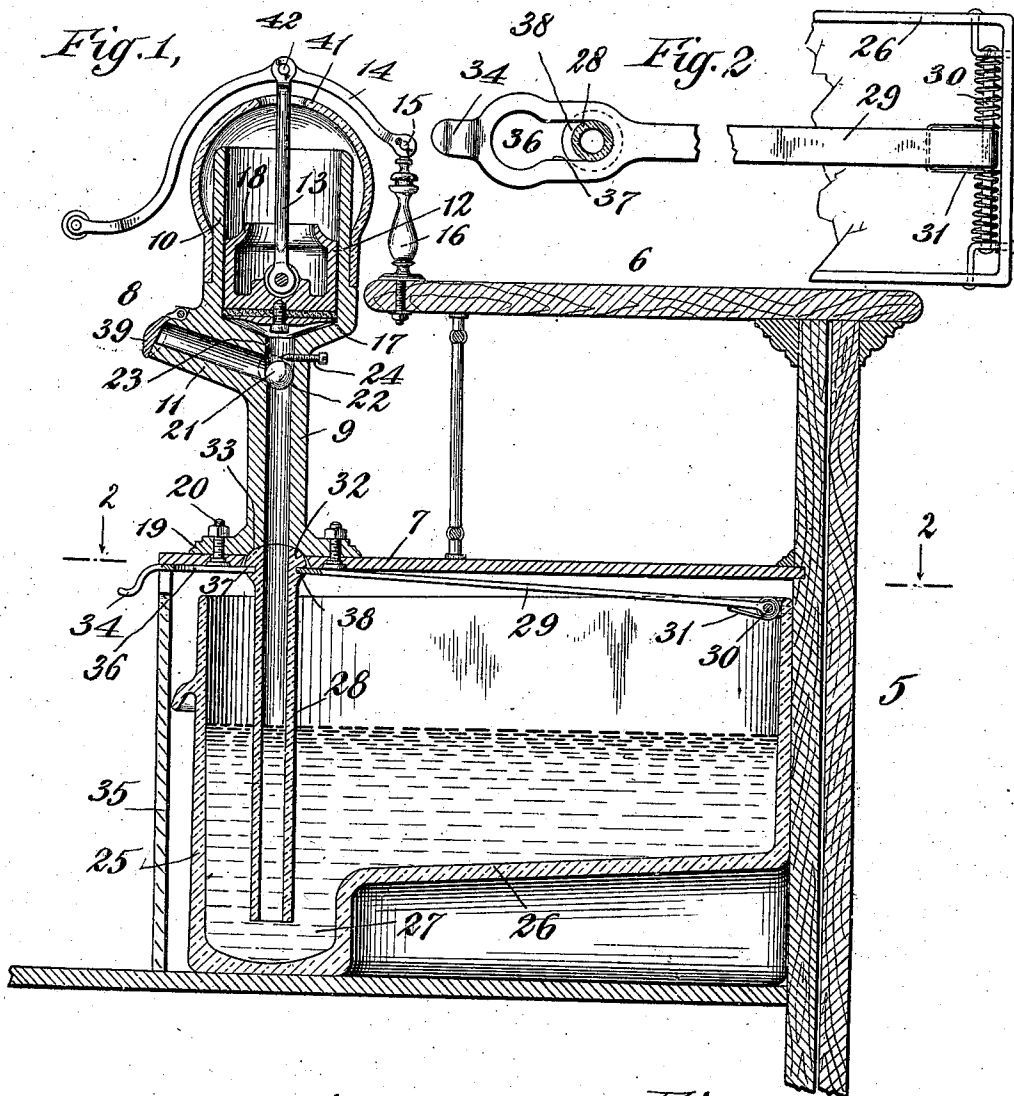
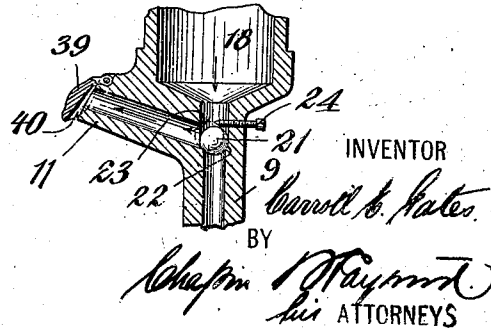
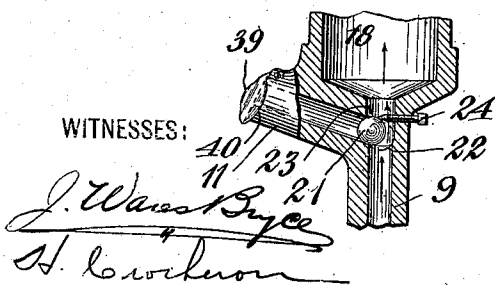


Fig. 3,

Fig. 4,



UNITED STATES PATENT OFFICE.

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SYRUP-DISPENSING APPARATUS.

No. 847,760.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CARROLL E. GATES, a citizen of the United States of America, and a resident of the borough of Manhattan, city of New York, county and State of New York, have invented certain new and useful Improvements in Syrup-Dispensing Apparatus, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to improvements in dispensing apparatus, and particularly to apparatus for dispensing syrup.

The main objects of my invention are to dispense in a simple and effective manner a predetermined quantity of syrup from a reservoir arranged beneath the point at which the material is to be dispensed, to so construct and arrange the parts that the reservoir may be readily removed and replaced with a minimum of trouble, and to provide that ready access may be had to all the parts, so that they may be easily and thoroughly cleaned.

To these ends my invention consists in certain novel combinations and details of construction, as will hereinafter more fully appear, and in order that my invention may be thoroughly understood I will describe in detail an embodiment thereof such as is illustrated in the accompanying drawings and will then point out the novel features in claims.

In the drawings, Figure 1 is a view in central vertical section through the dispensing apparatus. Fig. 2 is a detail top view of a portion of the reservoir and the means employed for supporting a portion of the suction-tube. Figs. 3 and 4 are detail sectional views of a portion of the pump, showing particularly the various positions of a ball-valve employed.

The dispensing apparatus as a whole comprises a suitable framework or casing 5, a part of which forms a dispensing-counter 6, and another part 7 of which constitutes a support for the dispensing-pump 8. The dispensing-pump comprises a hollow standard 9, a cylinder 10, and a spout 11. In the cylinder 10 is mounted a piston 12, connected, by means of a link 13, with an operating-lever 14, said operating-lever pivoted at 15 to a standard 16, secured upon the table

6. The piston is preferably provided with suitable packing 17 and may conveniently have an annular flange 18 at its upper portion, between which and the walls of the cylinder is formed a gulley for receiving a lubricant, such as glycerin. The standard 9 is provided with a flange 19, by which it may be secured, as by bolts 20, to the platform 7. A ball 21 is disposed in the standard 9 at about the point at which the spout 11 connects with the interior bore thereof, the said ball having a valve-seat 22 arranged in the said bore and another valve-seat 23 arranged at the entrance of the spout 11. A stop-pin 24 is screwed into the standard 9, the inner end thereof acting as an upper stop for the said ball 21 and also acting as a guide to direct the ball toward the seat 23 when the said ball moves upward.

Within the framework or casing and beneath the platform 7 is a reservoir or tank 25, which may conveniently be of glass or porcelain, the said tank or reservoir preferably provided with a slanting bottom 26 and a recessed portion 27, arranged to act as a sump. A suction-tube 28, which may also conveniently be of glass or porcelain, is arranged in the tank with its lower end entering the said sump. The said tube is carried by means of a supporting-lever 29, pivotally connected to the tank at 30 and provided with a spring 31, by which it is normally forced upward. The tube 28 at its extreme upper end has a spheroidal portion 32, which is arranged to fit into a corresponding concavity 33 at the bottom of the standard 9. The spring 31 tends to force the head of the tube 28 up against the base of the standard 9, and the two parts being complementary to each other a substantially tight joint is formed. This peculiar construction and arrangement of parts is made so that the tank may be readily removed and replaced when desired, it being only necessary to press upon the outer end 34 of the lever 29 in order to disengage the suction-pipe 28 from the standard 9 and leave the tank to be freely removed and replaced. A facing-piece 35 may be slipped into position after the tank is in place, if desired, in order to inclose the entire front of this portion of the casing.

The tube 28 is preferably secured to the supporting-lever 29 in the manner shown in

Fig. 2, an opening 36 being provided in the said supporting-lever of a size sufficient to receive the entire head of the said tube, the opening 36 having a slotted portion 37 connecting therewith, of less width, which slotted portion is adapted to receive a recessed neck-like portion 38 in the tube-head. By this arrangement the tube 28 may be readily removed and replaced when desired, whereby it may be easily cleansed and whereby also provision is made for putting in another tube in case one gets broken.

In employing the apparatus the operating-lever 14 is lifted the required degree, thereby lifting up the piston 12. This will lift liquid from the tank 26 up the suction-pipe 28 through the standard 9, past the ball 22, into the cylinder 10 beneath the piston, the ball 21 at this time not only freeing passage through the standard 9 into the cylinder 10, but also serving to close escape of liquid into the spout 11. The ball 21 is shown in this position in Fig. 3 of the drawings. After a sufficient quantity has been thus lifted the lever 14 may be pressed downward, when the syrup contained above the ball 21 will be forced along the spout 11 and discharged. The ball 21 will drop back to its position upon the valve-seat 22 directly upward movement of the piston 12 ceases, and liquid will then be free to flow from the cylinder 10 through the spout 11, as is shown in Fig. 4. The mouth of the spout is preferably covered by means of a pivoted flap 39, which flap is preferably provided with overlapping ears 40 at the side, so as to properly direct the stream from the mouth of the nozzle and to prevent the said stream from flattening, as would be undesirable. This flap also acts as a check-valve when the piston 12 is lifted to prevent the drawing in of air through the spout 11.

I have provided the cylinder 10 with a cap or closure 41, which may be readily removed and replaced when desired, but which when in position will tend to close the upper end of the cylinder, so as to prevent dirt or dust from entering same.

In order to clean the entire apparatus, the tank or reservoir may be removed after first depressing the end 34 of the suction-tube-supporting lever 29. Then the pin 42, connecting the lever 14 with the link 13, may be removed and the said operating-lever swung back upon the table 6. The cap 41 may now be removed, as may also the piston 12 and connecting-link 13. By unscrewing the stop-pin 24 the ball 21 may be lifted out, which will leave the bore of the standard 9 clear to be thoroughly cleaned, as also the bore of the spout 11, while the inside of the cylinder will be entirely exposed, so that it will be seen that ready access may be had to all parts for cleaning purposes and that the parts when so exposed may be cleaned in a simple and thoroughly efficient manner.

It will also be seen that the device as a whole is exceedingly simple in its nature and is composed of but very few parts, and those easy and inexpensive to manufacture.

Attention is also called to the fact that the spout 11 is inclined upwardly toward its discharge-mouth instead of downwardly, as is most common in discharge-spouts, the object of this being to cause the syrup to cease to flow from the discharge-mouth directly the operator ceases to depress the piston 12. I preferably provide that the valve-seat 22 shall not be very accurately fitted by the ball 21, so that if any syrup is left in the spout 11 or at the bottom of the cylinder 10 the same will slowly trickle past the ball 21 back into the tank.

What I claim is—

1. A dispensing apparatus comprising a cylinder, a piston therein, an inlet-conduit below the cylinder, a discharge-spout connecting with the said inlet-conduit, an outwardly-opening check-valve for the discharge-spout, and a ball-valve at the junction of said discharge-spout and said inlet-conduit, arranged to alternatively close against passage of fluid through the one and the other.

2. A dispensing apparatus comprising a cylinder, a piston therein, an operating-lever, an inlet-conduit beneath the cylinder, a discharge-spout connecting with said inlet-conduit, said discharge-spout inclined upwardly toward its discharge end, an outwardly-opening cap for normally closing the mouth of the discharge-conduit, and valve means arranged to alternately close against passage of fluid through the inlet-conduit and through the discharge-spout.

3. A dispensing apparatus comprising a cylinder 10, supported by a hollow standard 9 which forms an inlet-conduit having a straight run therethrough, said standard having a branch 11 constituting a discharge-spout, a pivoted flap constituting an outwardly-opening check-valve for the discharge end of the spout, a ball-valve 21 adapted to fit to a seat 22 in the inlet-conduit, and also to a seat 23 in the discharge-conduit, and a stop 24 limiting the upward movement of the ball-valve and directing it toward the seat 23.

4. A dispensing apparatus comprising a pump, and a removable reservoir arranged beneath same, a section of suction-pipe being movably secured to the reservoir, and means provided for forcing the suction-pipe section toward the pump with a yielding pressure, in order to normally maintain a substantially tight joint between the parts, but to permit relative yielding thereof to permit of the withdrawal of the reservoir.

5. A dispensing apparatus comprising a pump and a removable reservoir housed beneath same, said reservoir provided with

a suction-tube yieldingly forced upward and fitted at its upper end to a seat provided in a portion fast to the pump.

5 6. A dispensing apparatus comprising a pump and a reservoir arranged beneath same, said reservoir provided with a lever pivotally secured thereto, and a spring for forcing the said lever upward, a section of suction-pipe carried by said lever, the said
10 suction-pipe having a spheroidal head fitted to a corresponding concavity in a part fixed with the pump.

7. A dispensing apparatus comprising a pump and a removable reservoir mounted
15 beneath same, a lever 29 pivoted to the reservoir, a spring for forcing the lever upward, the said lever provided with a slot 37 and an enlarged opening 36, a tube 28 having an enlarged head of spheroidal form arranged to
20 pass freely through the opening 36 and fitted

to the slotted portion 37, the upper portion of the head having a bearing in a corresponding concavity in a fixed part of the pump.

8. In a dispensing apparatus, the combination with a pump, including a cylinder 10, 25 a piston 12, a hollow supporting-standard 9 and an operating-lever 14, of a suitable casing for supporting the pump and comprising a housing beneath same, a tank 26 removably received within said housing, said tank 30 carrying a suction member 28 accurately fitted at its upper end to a seat in the lower end of the standard 9, and means for depressing the suction member to disengage same therefrom at will, substantially as set forth.

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Witnesses:

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