SIPHON FILLER AND MINERAL WATER CHARGER.

(Application filed Apr. 9, 1900.)

Fig. 1.

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Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

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SIPHON-FILLER AND MINERAL-WATER CHARGER.

SPECIFICATION forming part of Letters Patent No. 664,354, dated December 18, 1900.

To all whom it may concern:

Be it known that I, JOHN H. FOX, a citizen of the United States, whose residence and post-office address is No. 208 West Forty-second street, in the city, county, and State of New York, have invented certain new and useful Improvements in Siphon-Fillers and Mineral-Water Chargers, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

One object of the present invention is to furnish a means for supporting a siphon in a suitable holder and pressing it by means of a treadle against a supply-socket, by which construction the hands of the operator are left entirely free to manipulate the holder and the supply-valves.

By moving the siphon instead of the socket to make connection with the supply of liquid the supply-socket may be held stationary upon a suitable standard, as well as the usual three-way valve, and such stationary arrangement of the socket and valve enables me to use rigid connections with the holder for carbonated water, and thus avoid the derangements to which the pipes are subject if flexible connections be used.

Another object of the invention is to furnish means for opening the siphon-valve by hand with connections that are inoperative until the cover of the siphon-holder is closed, whereby the charge of liquid under pressure cannot be introduced to the siphon until the siphon is confined in the holder, and accident to the operator is thus absolutely prevented in case of explosion.

Another object of the invention is to furnish a means for supplying a charge of Vichy or Seltzer salts to the siphon before it is filled with carbonated water, whereby the siphons are charged at pleasure in the same apparatus with Vichy water, Seltzer water, or plain carbonated water.

By the stationary arrangement of the supply-socket a pump may be attached rigidly to the same standard, and thus be readily used by the operator to force a charge of salts into the siphon through the stationary supply-socket, and rigid connections from a reservoir of salts may be used to supply such pump, and thus avoid the derangements to which flexible connections would be subject.

An apparatus embodying my invention is shown in the annexed drawings, in which—

Figure 1 is a side elevation of the apparatus. Fig. 2 is a rear elevation with the siphon-holder in section where hatched. Fig. 3 is an elevation like that in Fig. 1, upon a larger scale. Fig. 4 is a plan of the same. Fig. 5 is a view of the valve and supply-socket in section with part of the siphon. Fig. 6 is a sectional view of the pump; and Fig. 7 a view upon the front side of the holder, showing the appliances for operating the siphon-valve.

a designates a standard of round shape supported upon a foot-plate b. c is the siphon-holder, furnished upon the front side with swivel-stud d, fitted to a swivel-bearing e upon a sleeve f. The sleeve is fitted movably to the standard and is held from turning by a slot g in one side and a corresponding tongue attached to a fixed collar h, which supports the siphon-holder upon the standard. The holder is formed with a guide i a little inclined to the axis of the holder, and a roller j is fitted to the guide and arranged to bear upon the siphon-valve or finger-lever k. A toggle-lever l is pivoted upon the siphon-holder and connected with the opposite ends of the roller by links m, and the toggle-lever is provided with a handle n, which when turned, as shown in Fig. 2, opens the siphon-valve by pressure upon the finger-lever k and locks the roll in such position by the relation of the respective pivots. The cover o' of the siphon-holder is hinged upon the holder in the usual manner; but the hinge-lugs are provided with a projection o, which when the cover is closed and the valve opened stands close to the lever n and when the cover is opened to insert the siphon moves in the path of the dotted line o' in Fig. 2, so that the handle must be turned toward the roller, as indicated in dotted lines o' in Fig. 2, thus releasing the siphon-valve lever and securing the closing of the valve. The supply-socket p is supported upon an arm q, secured to the top of the standard, and is connected with the usual three-way cock or valve r, having a threaded nozzle r'.
to connect with a supply of carbonated water. A lifting-rod is pivoted to the end of the guide \(z\) and connected with a treadle \(f\), jointed at the base of the standard, so that pressure upon the treadle may slide the holder upwardly upon the standard, the sleeve \(f\) rising without turning during such movement. The valve \(r\) is of a type well known and operates when the valve-lever \(t^2\) is turned in its central position to shut off the supply of water. When it is turned in one direction from such central position, it operates to vent the siphon, while in the reverse position it operates to admit the carbonated water or salts into the siphon.

Fig. 3 shows a passage extending from the three-way valve \(r\) within the supply-socket, and a pipe \(s\) is also connected with such passage and with a pump \(u\). A check-valve \(p\) is inserted in the pipe \(s\). The pump, as shown in Fig. 3, is provided (near its connection with the pipe \(s\)) with an inlet \(w\), having a pipe \(s\) extended by branches \(v\) and stop-valves \(u\) to two reservoirs of salts. The reservoirs \(v\) and \(u\) are only partly shown for want of room upon the drawings; but it is obvious that they may be of any desired character and that any solution of salts contained therein will be led to the pump if the stop-valve for such reservoir be opened. A check-valve \(p\) is inserted in the pipe \(s\), opening toward the inlet \(w\), while the check-valve \(p\) opens toward the supply-socket, so that the salts drawn into the pump-barrel by the retraction of the piston are expelled into the siphon through the supply-socket when the piston is pushed inward. The cap \(w\) upon the outer end of the pump-barrel is screwed into the barrel, so that it may be readily removed, and an adjustable collar \(w\) is fixed by a set-screw upon the piston-rod to regulate the degree to which the piston can be retracted. Such collar serves to graduate the charge of salts drawn into the pump and discharged to the siphon at each stroke of the piston, and thus regulates the proportion of salts introduced into the carbonated water. The collar may be readily changed in its position upon the piston-rod by unscrewing the cap \(w\), and the charge may thus be varied as desired. Such means of varying the charge is sufficient in practice, as any change in the adjustment of the collar is very seldom required.

The pump is fastened to the arm \(q\) in such position that the operator may readily operate the piston when standing with his foot adjacent to the treadle, while the siphon holder is also accessible to raise the cover and insert the siphons in succession to be filled. The pump is fastened to the arm \(q\), so that the operator may stand at the point designated \(A\) in Fig. 1 and readily operate the pump and the treadle, while the siphon-holder is also accessible to raise the cover and insert the siphons in succession to be filled. The cover \(c\) is opened and the siphon-bottle \(x\) is inserted in the holder, with its head resting upon the shoulder \(y\), provided in the lower end of the holder for such purpose, and the nozzle \(x\) pointing toward the supply-socket. As long as the cover is open, the handle \(n\), which opens the siphon-valve, is turned into the position indicated by dotted lines in Fig. 2; but when the siphon-cover is closed, as shown in the drawings, the handle \(n\) is moved to the position shown in full lines, by which the roller \(j\) is pressed upon the finger-lever \(k\) to open the siphon-valve. The treadle \(f\) is then pressed by the foot, raising the holder upon the standard and forcing the siphon-nozzle \(x\) into the supply-socket, which is lined with a yielding packing to make a close joint. If the siphon is to be merely filled with carbonated water, the handle \(r\) of the supply-valve is turned to open the connection between the nozzle \(r\) and the supply-socket. When salts are to be supplied to the siphon, the appropriate valve \(v\) is opened to connect the reservoir with the pump \(u\), and the retraction of the piston (as far as the collar \(w\) will permit) then draws into the pump-barrel the required charge of salts. When the piston is pushed forward to the bottom of the pump-barrel, the charge is forced into the siphon through the supply-socket, and the siphon is then filled up with carbonated water. When the piston is now pressed to the bottom of the barrel, it covers the inlet \(w\), and thus shuts off the supply of salts to the pump, so that it is not necessary to actuate the valve \(v\) nor any other valve which supplies the salts so long as the operator is charging siphons with such salts.

The check-valve \(p\) when the piston is in the bottom of the barrel prevents the carbonated water under pressure from forcing its way into the pump-barrel when the siphon is charged with such water. In charging each successive siphon with salts the piston is thus simply reciprocated, and its position over the inlet \(w\) after charging each siphon serves to cut off the salts from the pump without any special attention on the part of the operator.

When the siphon is filled, the handle \(n\) is thrown downward to close the siphon-valve, the pressure upon the treadle is released to drop the siphon-holder so far as is permitted by the collar \(k\), and the cover of the holder is then opened and the filled siphon removed. It is understood that the siphon-holder is suitably slotted at \(n\) upon the front and back at the lower end to permit the passage of the nozzle \(x\) and the finger-lever \(k\); but except where the slots are formed the bottom of the holder is provided with curved shouldered \(y\), as shown in Fig. 2, to fit the head \(z\) of the siphon, so that the entire pressure of forcing the nozzle into the supply-socket is sustained by the head and the breakage of the siphon-bottle is wholly prevented.

To adapt the apparatus for use with various makes of siphons in which the nozzle \(x\) may be of greater or less length or projection from the head \(z\), I make the siphon-holder adjustable, as well as the supply-socket. The
siphon-holder is supported by the stud d upon the swivel-bearing e, in which it can be turned in a vertical plane and clamped by the set-screw. (Shown in Fig. 5.) The siphon-holder can also be turned around upon the standard by rotating the collar h and securing it by a set-screw q. The arm g, which sustains the supply-socket, pump u, and valve r, can also be rotated upon the standard by collar h and secured by the set-screw q, (shown in Fig. 4.) and the supply-socket itself is secured upon the end of the arm g by a stud q2 and set-screw q3, which permits the socket and valve to be adjusted as desired.

From the above description it will be seen that the supply-socket and the valve r and pump u are fixed upon the standard when in operation and may have relatively rigid connections, such as block-in pipes, with the reservoirs of carbonated water and salts, and the movement and derangement of such pipes are avoided during the entire operation of the apparatus. It will also be understood that the siphon-holder may be mounted movably upon a standard and the nozzle pressed into the supply-socket by a treadle irrespective of the means employed for opening the siphon-valve, but I have made claims to the roller and the hand-lever for operating the same, as such means are very advantageous. I have also made special claims to the pump and connections for feeding a charge of salts into the siphon-holder; but it will be understood that the holder may be constructed and operated without such salt-feeding devices.

Having thus set forth the nature of the invention, what is claimed herein is—

1. In a siphon-filler, the combination, with the standard supporting a supply-socket, of a sleeve movable upon the standard and having the siphon-holder secured adjustably thereon, and a treadle with suitable connections for raising the holder to press the nozzle of the siphon into the supply-socket, whereby the treadle-pressure is sustained by the head of the siphon.

2. In a siphon-filler, the combination, with the standard supporting a supply-socket, of a sleeve movable upon the standard and having the siphon-holder secured thereon and provided with a shoulder to fit the head of the siphon, and a treadle with suitable connections for raising the holder to press the nozzle of the siphon into the supply-socket, whereby the treadle-pressure is sustained by the head of the siphon.

3. In a siphon-filler, the combination, with a suitable standard, of a supply-socket adjustable upon the standard to admit the siphon-nozzle, a sleeve movable upon the standard and provided with a swivel-bearing, and a siphon-holder having a lateral swivel stud secured adjustably in such bearing with a treadle and connections for raising the holder to press the nozzle of the siphon into the supply-socket.

4. In a siphon-filler, the combination, with the siphon-holder, of an inclined guide adjacent to the head of the siphon with a roller fitted to such guide and arranged to bear upon the siphon-valve, and a handle with connections upon the siphon-holder for moving the roller upon the guide, and a cover hinged upon the siphon-holder constructed and operated to prevent the opening of the siphon-valve until the cover is closed.

5. In a siphon-filler, the combination, with the siphon-holder, of an inclined guide adjacent to the head of the siphon with a roller fitted to such guide and arranged to bear upon the siphon-valve, a handle with connections upon the siphon-holder for moving the roller upon the guide, and a cover hinged upon the siphon-holder with a cam upon the hinge projected in the path of said handle to prevent the opening of the siphon-valve until the cover is closed.

6. In a siphon-filler, the combination, with the siphon-holder, of an inclined guide adjacent to the head of the siphon with a roller fitted to such guide and arranged to bear upon the siphon-valve, a crank pivoted upon the siphon-holder with link to actuate the roller, and lock the same by toggle action when the siphon-valve is open, a handle attached to such lever, a cover hinged upon the siphon-holder to insert the siphon therein, and projections upon the hinge, adapted to prevent the opening of the cover until the valve is closed, and the opening of the valve until the cover is closed, substantially as herein set forth.

7. In a siphon-filler, the combination, with the siphon-holder, of an inclined guide adjacent to the head of the siphon with a roller fitted to such guide and arranged to bear upon the siphon-valve, a crank pivoted upon the siphon-holder with link to actuate the roller, and lock the same by toggle action when the siphon-valve is open, a handle attached to such lever, a cover hinged upon the siphon-holder to insert the siphon therein, and projections upon the hinge, adapted to prevent the opening of the cover until the valve is closed, and the opening of the valve until the cover is closed, substantially as herein set forth.

8. In a siphon-filler, the combination, with a vertical standard, of a stationary supply-socket p having a three-way valve to supply carbonated water, and an attached pump to supply a solution of salt to the socket, a siphon-holder movable upon the standard with treadle for pressing the siphon-nozzle into such socket, and fixed connections for delivering carbonated water to the three-way valve and salts to the pump, whereby the siphon may be charged with both liquids through stationary fixtures, substantially as herein set forth.

9. In a siphon-filler, the combination, with a supply-socket adapted to receive the nozzle of the siphon, of a connection to such socket for supplying carbonated water, a pump having outlet connected by the pipe s' and the check-valve p', an inlet u' upon the pump-barrel near its connection with the pipe s', for supplying salts to the pump, and a piston movable in the pump and arranged and operated, when retracted, to draw a charge of salts into the pump, and when pressed to the bottom of the barrel, to close such inlet,
whereby the salts may be drawn into and discharged from the pump without manipulat-
ing any valve upon the inlet-pipe.

10. In a siphon-filler, the combination, with a supply-socket adapted to receive the nozzle of the siphon, of a connection to such socket for supplying carbonated water, a pump having outlet connected to such socket, and having inlet branches for supplying various salts to the said pump, with valves for opening and closing such branches, whereby the pump may furnish the supply-nozzle and the siphon with charges of various salts at pleasure, substantially as herein set forth.

15. In a siphon-filler, the combination, with a supply-socket adapted to receive the nozzle of the siphon, of a connection to such socket for supplying carbonated water, a pump having outlet connected to such socket, a connection with valve for supplying salts to such pump, a piston movable in the pump by hand, and means for gaging the movement of the piston to graduate the charge of salts delivered to the siphon, substantially as herein set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN H. FOX.

Witnesses:
THOMAS S. CRANE,
L. LEE.