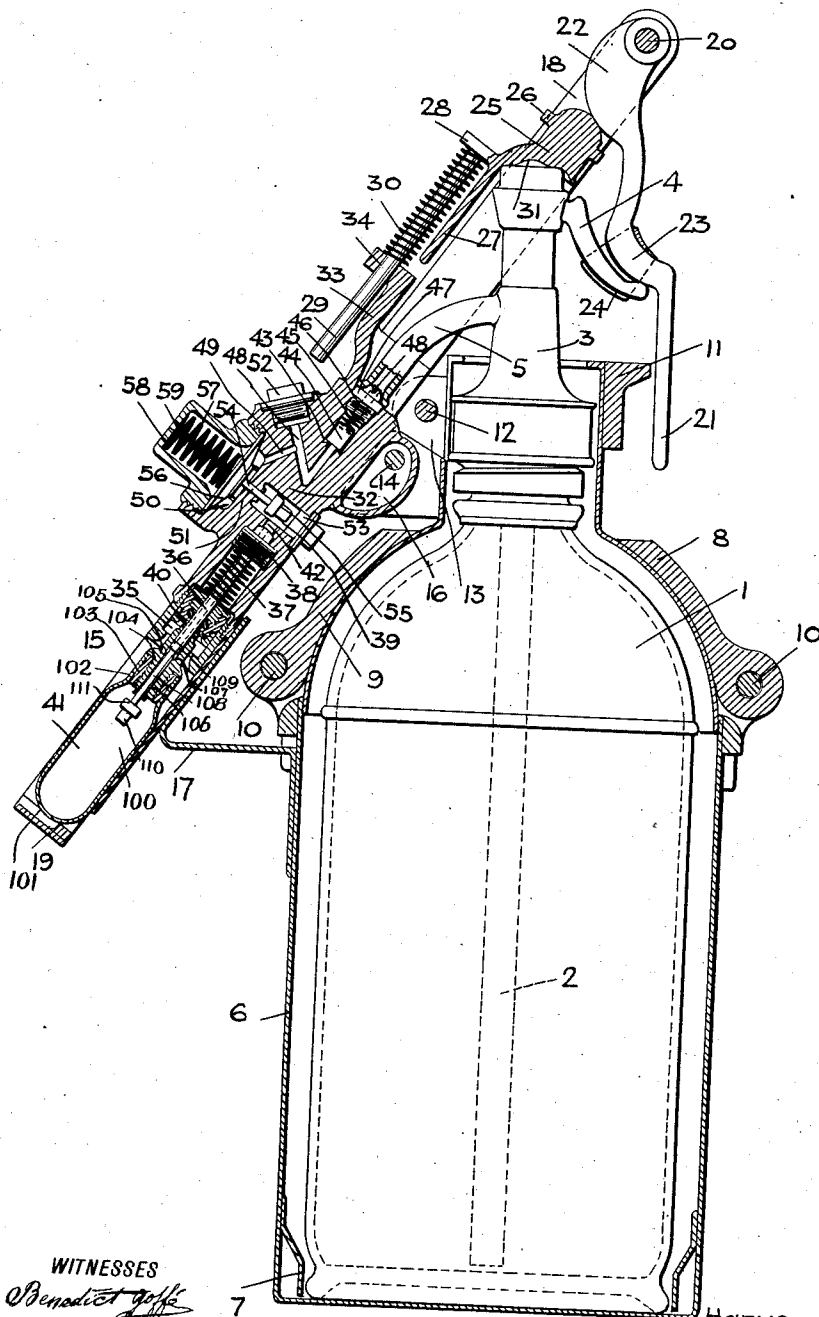


H. S. WINSOR.
SIPHON CHARGING MECHANISM.
APPLICATION FILED MAY 15, 1912.

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SIPHON-CHARGING MECHANISM.

1,063,145.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARVEY S. WINSOR, a citizen of the United States, and a resident of the city of New York, Sheepshead Bay, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Siphon-Charging Mechanism, of which the following is a full, clear, and exact description.

My invention relates generally to siphon charging mechanisms and, more particularly, it is directed to a construction embodying improved features, whereby siphons may be quickly and safely charged.

The principal object of my invention is to provide a siphon charging mechanism embodying a substantial structure and a number of cooperating parts, whereby siphons may be charged with a gas contained in a suitable cartridge in a quick and safe manner.

Other objects and advantages of the invention, not particularly set forth at this time, will appear as the description thereof proceeds, it being noted that the parts set forth and described in the drawings are merely typical and illustrative of what may be used to accomplish the purpose of the invention, such parts being capable of various changes in design and relation among themselves.

Reference is to be had to the accompanying drawing, forming part of this specification, and showing a vertical sectional view of a siphon with the charging mechanism and the cartridge in operative position.

Any suitable siphon 1 is provided with the usual interior tube 2 extending to the valve contained in the head 3, the valve being operable through the handle 4, the outlet being through the nozzle 5. The siphon, when it is to be charged, is placed within the casing 6, preferably of metallic material, the lower inside portion of which is provided with a number of resilient offsets 7 against which the lower edge portion of the siphon is adapted to contact as the device is moved about, these resilient offsets taking up any shock, due to movement of the siphon within the casing, whereby handling of the outfit is rendered more safe. The top of the casing is hemispherical and preferably made up of two similar parts 8, 9, pivoted to the main portion or casing 6 by means of pins 10, the part 8 being provided with a strap 11 which extends there-

around, the ends of which are separated and provided with openings through which a movable pin 12 extends; the part 9 is provided with an offset or lug 13 having an opening through which the said pin 12 extends, the two parts forming the hemispherical top of the casing being thereby held in engagement with each other with the siphon securely positioned within the casing.

Movably carried on the outside of the casing 6 and normally supported on the pin 14 carried by a portion of the before-mentioned lug or offset 13 is the charging mechanism indicated as a whole by 15; the under side thereof is provided with an opening 16 which extends around the said pin 14, movement of the charging mechanism on the casing 6 within certain limits being thereby permitted. One side of the casing 6 is provided with a shelf or support 17 against which the lower portion of the charging mechanism rests, the mechanism being movable with respect to the support or shelf 17, while in engagement therewith.

The charging mechanism 15 is made up of two parts; one of the parts is essentially a rectangular frame, having the sides 18 connected together by an end 19, the upper end of the frame being provided with a transversely extending pin 20 on which a handle or lever is pivotally mounted, this lever comprising the handle end 21, the cam end 22, and the intermediate curved portion 23, along opposite sides of which the spaced projections 24 extend, the said projections being adapted to embrace the handle 4 of the valve of the siphon when the siphon is being charged, the under side of the curved portion 23 of the lever engaging the said handle 4.

Slidably mounted between the sides 18 of the beforementioned frame is the head 25, provided with suitable offset guides 26, whereby it is held in position between the said sides, this head being provided with a forwardly extending portion 27, and with an offset 28 from which a forwardly extending pin 29 extends, the pin being encircled by a helical spring 30; the under side of the forwardly extending portion 27 adjacent the head 25 forms a pocket 31 adapted to receive and bear against the upper end of the head of the siphon in order to provide a suitable support when the charging is being accomplished, the said cam end 22 of the lever at the upper end of the charging mech-

anism engaging the said head 25 and bringing it closely adjacent the head of the siphon as the curved intermediate portion of this same handle or lever engages the outer end of the handle 4 of the siphon valve in order to open the valve and maintain it in such position.

The second part of the charging mechanism 15 is made up of the valvular element 32 mounted between the sides 18 of the beforementioned frame, the upper end of this element being provided with an arm 33, having an opening 34 therein through which the said forwardly extending pin 29 of the head 25 extends, one end of the said helical spring 30 bearing against the outer end of this arm so that, when the said lever or handle mounted on the pin 20 at the upper end of the movable frame, is out of engagement with the handle 4 of the siphon, the spring 30, by engagement with the said head 33 and the offset 28 carried by the movable head 25, will maintain the said handle in an elevated position, at the same time holding the two parts of the charging mechanism in fixed relation.

The lower end of the valvular element 32 is provided with a chamber 35 in which is a spring-pressed hollow valve rod 36, the spring being designated 37, the upper end of the spring bearing against a screw-threaded plug 38, the said valve rod 36 being provided with an opening extending therethrough which communicates with a transversely extending chamber 39 within the valvular body; the outer end of this rod 36 is also provided with packing material 40 adapted to closely engage the upper open end of the valve contained in the cartridge 41, it being noted that in the drawing the relation of the parts is such that the said rod 36 has been entered into the open end of the cartridge in order to open the said valve therein and permit the gas to pass through the opening in the rod, leakage being prevented by the engagement of the said packing material 40 with the peripheral portion of the upper end of the cartridge. Between the upper end of the said open valve rod 36 and the transversely extending chamber 39 in the valvular element is a passageway 42. Adjacent the upper end of the valvular member and contained within a chamber 43 is a plug 44, against the upper end of which a helical spring 45 bears, the end of this chamber being closed by a screw-threaded plug 46 contained within a resilient washer 47 and having a passageway extending therethrough, the end 48 of the said plug 46 extending beyond the washer 47 and forming a protuberance adapted to be extended into the open end of the nozzle 5 of the siphon when the same is being charged, as shown in Fig. 1; this chamber 43 in the valvular element com-

municates with the said intermediate chamber 39 through the medium of the V-shaped passageway 48 and a second passageway 49, the second passageway communicating with a chamber 50, the said intermediate chamber 39 also communicating with this chamber 50 through the medium of a valve-controlled opening 51, the outer end of the said V-shaped passageway is closed by a removable plug 52, while the lower end of the said intermediate chamber 42 is closed through the medium of a removable plug 53, both of which can be easily taken out when it is desired to clean the chambers or passageways. Within the said intermediate chamber 39 is a movable valve comprising a spindle 54 having an enlarged end 55, the upper end of the spindle engaging a flexible washer 56, against which a helical spring 57 engages, this spring being contained in a suitable cap 58 having an opening 59 through its upper end; the spring 57 normally maintains the valve in this chamber in the position shown in the drawing. Should the pressure, however, of the gas in the cartridge 41 be excessive, such pressure will close this valve against the tension of the spring 57, whereby such excessive pressure is prevented from being communicated to the siphon. The stem 54 of the valve is not of the same shape as the opening 51 through which the stem extends, the outside of the stem being provided with a number of cut-away portions forming channels through which the gas normally passes.

Referring to the chamber 43 in the upper end of the valvular element, it will be noted that the plug 44 normally closes one end of the V-shaped passage 48 so that in the event of back pressure from the siphon after the siphon valve is open, such pressure will not carry over the charge of water in the siphon into passageways and chambers described.

A cartridge is set forth in the drawing, the structure of which especially adapts it for use as a medium of containing liquefied gas under suitable pressure, the manner of disposing of the siphon-charging outfit being that a number of such cartridges may be used with one charging mechanism so that, when the siphon becomes empty, it may be placed in the valve mechanism and the gas from a new cartridge entered into the siphon, whereby the water therein becomes charged. This siphon comprises a substantially cylindrical metallic body 100 having a substantially hemispherical bottom 101, the bottom being preferably integral with the other portion of the body, whereby seams and joints are avoided in order to provide for greater safety. The upper end of the body 100 is constricted in order to form a neck 102, the neck receiving an interiorly threaded sleeve 103, which is preferably of brass, the upper end of the body

being overturned, as at 104, in order to engage the upper end of the sleeve and to provide a tight joint. The sleeve 103 is prevented from turning with respect to the body or the neck of the cartridge by means of inwardly extending protuberances formed in the body of the cartridges which engage the sleeve, the sleeve being preferably of softer material.

Carried by the cartridge and in screw-threaded engagement within the sleeve 103 is a valve which comprises preferably the body member 105 having a passageway 106 extending therethrough, the upper end of the passageway terminating in an enlarged recess 107; within the passageway 106 is the valve proper, a spindle 108, the upper end of the spindle being provided with an element such as a screw 109 in engagement therewith, whereby the spindle is prevented from dropping into the cartridge when the same is emptied. The lower end of the spindle is provided with a head 110, the upper portion of which is counterbored, as at 111, into which the narrow or lower end portion of the body member 105 engages, the parts being held in such engagement by reason of the pressure within the cartridge, leakage being thereby prevented. It will be noted that the side portions of the said element 109 at the upper end of the spindle 108 is provided with longitudinally extending openings 112, whereby an outlet or inlet for the gas is provided, the sides of the spindle 108 being also provided with removed portions or channels, or slots, through which the gas may pass.

When it is desired to charge a siphon of water, the siphon is placed within the casing 6 and the parts 8 and 9 are brought to closed position, the cartridge 41 being placed at the lower end of the frame of the charging mechanism and between the sides 18, the upper open end 107 of the cartridge receiving the longitudinally extending valve rod 36 which extends into the chamber 35 at the lower end of the valvular element; the handle or lever, at the upper end of the charging mechanism, is then turned about the pin 20 until the cam portion 22 thereof engages the head 25, and the intermediate curved portion 23 of the handle or lever engages the end of the handle 4 of the siphon, whereby the valve of the siphon is opened. The movement of the handle or lever about the pin 20 causes movement of the frame portion of the charging mechanism relatively to the valvular portion, the result being that the frame with the cartridge therein is moved against the said valve rod 36,

whereby the valve rod enters the cartridge and opens it, the gas then having access through the chambers and passages described into the open end of the nozzle 5 of the siphon, and thence to the interior of the bottle. After the bottle has been charged, the handle or lever is again moved about the pin 20 in order to close the valve of the siphon and to bring the open end of the nozzle 5 out of engagement with the projecting end 48 of the plug 46 at the outer end of the chamber 43, the back pressure of the siphon being prevented from spreading through the chambers and passages by reason of the movable plug 44 within this chamber which engages the open end of the V-shaped passageway 48, thereby effectively closing it.

The mechanism herein described and claimed provides a simple and efficient structure especially adapted for use in small places or for use in the home, where it is inconvenient or impossible to obtain a supply of carbonated water from manufacturers, it being clear that the size of the different parts and the material of which they are made, will depend largely upon the size of the siphons with which they are to be used, as well as the pressures to be maintained in such siphons.

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

An apparatus of the class described, comprising the combination of a receptacle for containing a siphon, a charging mechanism adapted to carry a cartridge containing a compressed gas, the said charging mechanism comprising parts movable relatively one to the other, the said parts being spaced and adapted to form a pocket for receiving the cartridge, one of the parts being provided with a hollow valve rod for engaging the valve in the cartridge, means carried by the same part and adapted to engage the spout of the siphon, the said part being provided with valves and passageways between the said hollow rod and the spout engaging means, and a device for moving said parts, whereby the hollow valve rod will move the valve of the cartridge, thereby placing the interior thereof in communication with the interior of the siphon.

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

HARVEY S. WINSOR.

Witnesses:

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LAURENCE J. GALLAGHER.