

P. SPITZENBERG.

SIPHON FILLER.

APPLICATION FILED AUG. 17, 1907.

1,041,364.

Patented Oct. 15, 1912.

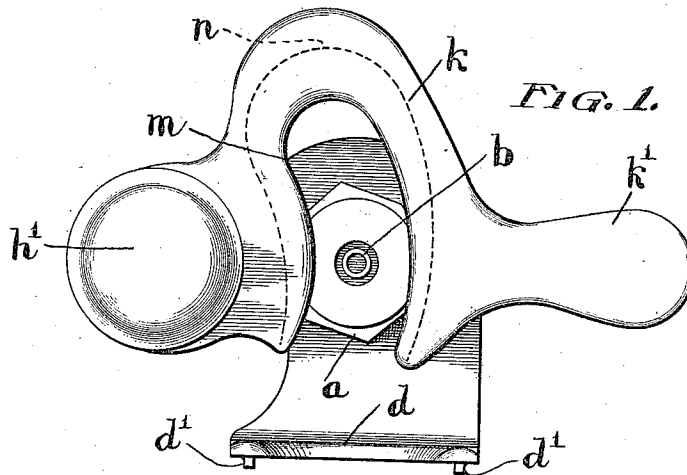


FIG. 1.

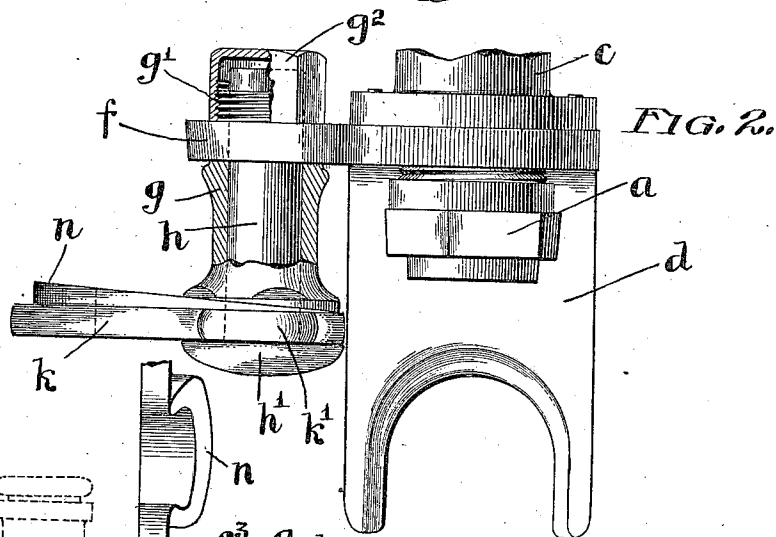


FIG. 2.

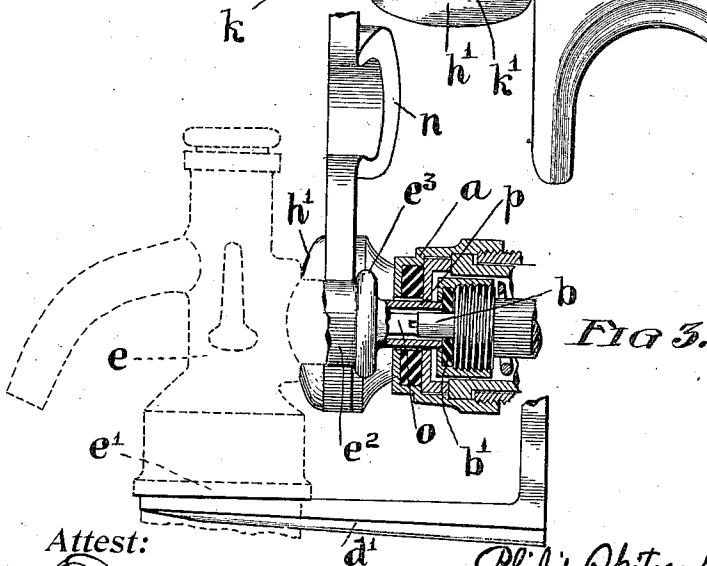


FIG. 3.

Attest:

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by *Prothingham Wentworth*
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UNITED STATES PATENT OFFICE.

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SIPHON-FILLER.

1,041,364.

Specification of Letters Patent.

Patented Oct. 15, 1912.

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To all whom it may concern:

Be it known that I, PHILIP SPITZENBERG, a citizen of the United States, residing in the borough of Brooklyn, city of New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Siphon-Fillers, of which the following is a specification, reference being had therein to the accompanying drawings, which form a part thereof.

The invention relates to fillers for siphon bottles, and more particularly to a type thereof adapted to be used for filling bottles having a filling nozzle or port independent of the spout, and designed to be filled without being inverted. In fillers of this character the siphon bottle is placed in position relative to the discharge of the filler, which discharge is controlled by a valve adapted to be automatically actuated by the filling nozzle of the siphon head, and the entire siphon bottle forced toward the filler by a hand lever, thus simultaneously effecting the opening of the discharge valve and the coupling of the siphon bottle to the filler. It has been the practice heretofore to use a lever having movement about both a horizontal and a vertical axis, a construction which necessitates a yielding fulcrum point to allow the lever to accommodate itself to the quantity of movement necessary to accomplish the requisite coupling of parts and opening of valves. This construction also requires means for locking the coupling and operating lever, as otherwise the pressures would disconnect the bottle from the filler. In practice this construction of filler has been found unsatisfactory, as when coupling in order to secure the proper packing of the parts there is a tendency to exert sufficient pressure to not only bend the lever but to wear and otherwise damage the siphon head. The movement of the lever in latching also results in an imperfect packing, and difficulty and inconvenience in removing the bottle from the filler; and the construction of the apparatus is expensive and unreliable in use.

The main object of my invention is to provide a filler wherein the means effecting the coupling of the siphon head to the filler, and operating the filler valve, will have movement upon a fixed fulcrum or pivot, and engage the siphon head and force it toward the filler by a single movement, thus

obviating some of the objections above referred to.

A still further object is to provide a filler wherein any variance in the movement required to effect the proper packing and operation of parts, may be compensated for by a varying degree of movement of the operating lever.

A still further object is to provide a filler wherein the means carried by the operating lever for forcing the coöperating parts of the bottle and the filler together, will have no horizontal movement, thus not only causing the lever to lock the parts in the coupled position and dispensing with any locking mechanism for said lever, but causing all strains to be such as to not bend or break the lever.

A still further object is to provide a filler having an operating lever movable about a horizontal axis, whereby said lever will be so reinforced adjacent to its pivot as to resist horizontal strains placed thereon. And a still further object is to provide a filler which will be compact in form, neat in appearance and inexpensive to produce.

The invention consists primarily in the combination in a filler for siphon bottles, of a discharge, and means controlling the flow of liquid therethrough, with means supporting a siphon bottle adjacent to said discharge, a lever, a cam surface thereon adapted to engage the filling nozzle of a siphon bottle, and a horizontal pivot for said lever off set relative to said discharge; and in such other novel features of construction and combination of parts as are hereinafter set forth and described and more particularly pointed out in the claims hereto appended.

Referring to the drawings: Figure 1 is a front elevation of the filler with the lever lowered to the operative position, the cam surface being indicated in dotted lines; Fig. 2 is a plan view thereof, with the lever raised to permit the positioning of a siphon bottle relative thereto, and Fig. 3 is a section on the line 3—3 of Fig. 2, showing in dotted lines a siphon head in position, and the filling nozzle thereof in full lines.

Like letters refer to like parts throughout the several views.

In the embodiment of my invention shown in the drawings, I have shown the device as applied to an automatic fluid discharge

mechanism comprising a coupling part *a* containing a valve *b* adapted to be actuated through the coupling of a siphon bottle thereto and a pipe connection *c* adapted to be placed in communication with a tank or other source of supply not shown, in any desired manner. The valve *b* is capable of reciprocation within the fitting *a* as shown in Fig. 3, and inasmuch as the construction of this valve forms no part of the invention, a further description thereof will not be entered into. Carried by this discharge mechanism is a forwardly projected yoke *d* which is positioned below the member *a* with the fork forwardly thereof. The arrangement of this yoke is such as to permit the head of the siphon bottle *e* to be inserted therein in a manner to cause the split ring *e'* thereof to engage said yoke thus retaining the bottle in the desired position relative to said discharge mechanism. *d'* *d'* are merely reinforcing webs for the horns of said yoke. Also mounted on the discharge mechanism is a laterally extended plate *f* carrying thereon a hollow boss *g* the opening in which extends upon a horizontal plane substantially parallel with the coupling member *a*. While I preferably position this boss to one side of the said discharge mechanism, its exact location is largely a matter of convenience it being merely necessary that it should be offset relative to said mechanism with the boss thereon extending on a substantially horizontal plane. Mounted in this boss *g* is a pivot pin *h* having an enlarged head *h'* the function of which will appear more fully hereinafter. The said pin is permanently secured within the said boss in any desired manner and may be free to rotate or be fixed as desired. To insure neatness of structure I provide the boss *g* with screw threads *g'* rearwardly of the plate *f* and inclose the end of said boss and the pivot pin *h* with the hollow screw cap *g*². Loosely mounted on the pin *h* between the cap *h'* thereof and the forward end of the boss *g* is a lever *k* having an operating handle *k'*. Substantially centrally of this operating lever *k* is an opening *m* the sides of which are parallel and on a curve concentric with the pivot pin *h*, and of a radius such as to bring the center line of said opening in substantial alinement with the center of the member *a*. Rising from the rear surface adjacent to the lower edge of the lever *k*, is a cam surface *n* extending upon curved lines conforming to those of the opening *m*, the highest point of said surface being above the top of said opening. It will thus be seen that by pivotal movement of said lever any object disposed between it and the member *a* will be gradually forced toward said member through this movement alone, the enlarged head *h'* presenting sufficient reinforcement to the lever to resist outward

strains occasioned by this mode of operation.

The type of siphon bottle *e* in connection with which this filler is designed to be used, is provided with a cap *e*² having an end flange *e*³, the opening *m* being adapted to straddle said cap and the cam surface *n* to engage the flange *e*³ thereon.

o represents the stem of the valve mechanism adapted by contact with the valve *b* to open the valve in the seat *e*, and *p* represents a nozzle adapted to encircle the stem of the valve *b* and engage the packing of said valve as *b'* to simultaneously pack the valve and open same.

The operation of the filler is substantially as follows: When it is desired to fill a siphon bottle the head *e* thereof is placed within the yoke *d* with the split ring *e'* resting upon the forks thereof, the cap *e*² being presented toward the coupling part *a* with the nozzle *p* encircling the stem of the valve *b* so as to bring the end of said nozzle into close proximity with the packing ring *b'* of said valve mechanism *b*. When so positioned the cap *e*² is directly beneath the lever *k* and in the direct path of the opening *m* thereof. To effect the desired coupling of parts and the automatic operation of the valves of the filler and the siphon head when such are employed, it is merely necessary to bring the lever *k* downward until the cam surface *n* thereof engages the rim *e*³ of the cap *e*². Thereafter by further depression of said lever said cam surface will gradually force the entire siphon bottle toward the coupling part *a* packing the nozzle *p* of the cap *e*² with relation to the valve mechanism *b*. When the desired packing has been so effected, the lever *k* is merely left in this position, thus retaining the parts in the coupled position and holding them against the pressures inserted upon the siphon bottle by the inflowing water. As the waters being discharged into the bottle are ordinarily under from 150 to 200 pounds pressure, it will be seen that these strains will be substantial. The enlarged cap *h'*, however, will present sufficient contact surface to the lever adjacent to its pivotal point to resist any such strains and maintain a tight joint thus avoiding leakage while filling the bottle. The cam surface being disposed on both sides of the opening *m* will exert such pressure upon the siphon head as to insure a direct movement toward the coupling part *a* thus avoiding a breaking or binding of parts. It will also be observed that the quantity of movement of the siphon bottle is dependent upon the extent of pivotal movement of the lever *k* thus permitting said lever to be used with the same degree of efficiency with caps wherein the flanges *e*³ are of different thicknesses or the nozzles are of different lengths. The construction

of this lever is therefore such as to compensate for any wear of the parts, thus always permitting the formation of a tight joint between the siphon head and the filler. The curve of the opening *m* is designed to permit variance in the amount of depression of the lever without such a side thrust as will tend to bind the parts of the head and the filler together.

It will be observed that the lever *k* is subjected to strains in but one direction aside from those resulting from the re-action in forcing the parts of the coupling together and when the strength of the material is in a line of this pressure. No direct pressure on the lever toward the discharge mechanism is necessary and consequently the bending of the lever incidental to other apparatus above referred to is avoided. It will also be observed that the pivotal support of the lever *k* is fixed in that the sole movement if any, will be a pivotal movement within the boss *g*. This strain not only avoids a complicated mechanism, but gives permanency and reliability to the structure. The turning of the lever *k* thus insures the forward movement of the coupling part of the siphon head without providing any means about the pivot *h* to adapt the lever to this change of position of said part, the cam surface *k* compensating for such a change. No locking mechanism is required because of the positive movement of parts and the continuous engagement of the cam surface with the flange *e*³.

It is not my intention to limit my invention to the precise details of construction shown in the accompanying drawings as such may be varied without departing from the spirit and scope of the invention. I believe it to be new, however, to effect the coupling of the siphon bottle with the discharge of the filler mechanism by means of the lever carrying the cam surface adapted to engage the coupling part of the siphon bottle which lever moves in a fixed plane about a horizontal axis, and intend to claim such broadly.

Having described the invention, what I claim as new, and desire to have protected by Letters Patent, is:—

1. In a siphon filler, the combination with a discharge and means controlling the flow of liquid therethrough, of means supporting a siphon bottle adjacent to said discharge, a lever, a cam surface thereon adapted to engage the filling nozzle of a siphon bottle, and a horizontal pivot for said lever off-set

relative to said discharge whereby the bottle will be forced toward said discharge by the wedging action of said cam surface, and said pivot will absorb all strains on said lever.

2. In a siphon filler, the combination with a discharge and means controlling the flow of liquid therethrough, of means supporting a siphon bottle adjacent to said discharge, a lever having an opening having parallel curved sides adapted to engage the filling nozzle of a siphon bottle, a cam surface thereon adjacent to and curved in conformity with each of said sides of said opening, said surface rising gradually from a point adjacent to the bottom of said lever, and a horizontal pivot concentric with said curved sides, for said lever off-set relative to said discharge.

3. In a siphon filler, the combination with a discharge and means controlling the flow of liquid therethrough, of means supporting a siphon bottle adjacent to said discharge, a lever having an opening having parallel curved sides, a cam surface thereon adapted to engage the filling nozzle of a siphon bottle, adjacent to and curved in conformity with each of said sides of said opening, said surface rising gradually from a point adjacent to the bottom of said lever, a hollow horizontal boss offset relative to said discharge, a pivot pin for said lever mounted in said boss, and an enlarged head for said pin whereby strains on said lever will be transmitted to said pivot pin.

4. In a siphon filler, the combination with a discharge, and means adapted to be automatically actuated by the application of the bottle thereto controlling the flow of liquid to said discharge, of a fixed yoke positioned below said discharge and projected forwardly thereof and parallel therewith, whereby a siphon is supported adjacent to said discharge and held in alinement therewith, and means adapted to engage the siphon while supported by said yoke and force it within said yoke and into engagement with said discharge and the automatically operative means controlling the flow of liquid therethrough.

In witness whereof I have hereunto affixed my signature this 15th day of August, 1907, in the presence of two witnesses.

PHILIP SPITZENBERG.

Witnesses:

MARION E. SPITZENBERG,
EVELYN M. SPITZENBERG.