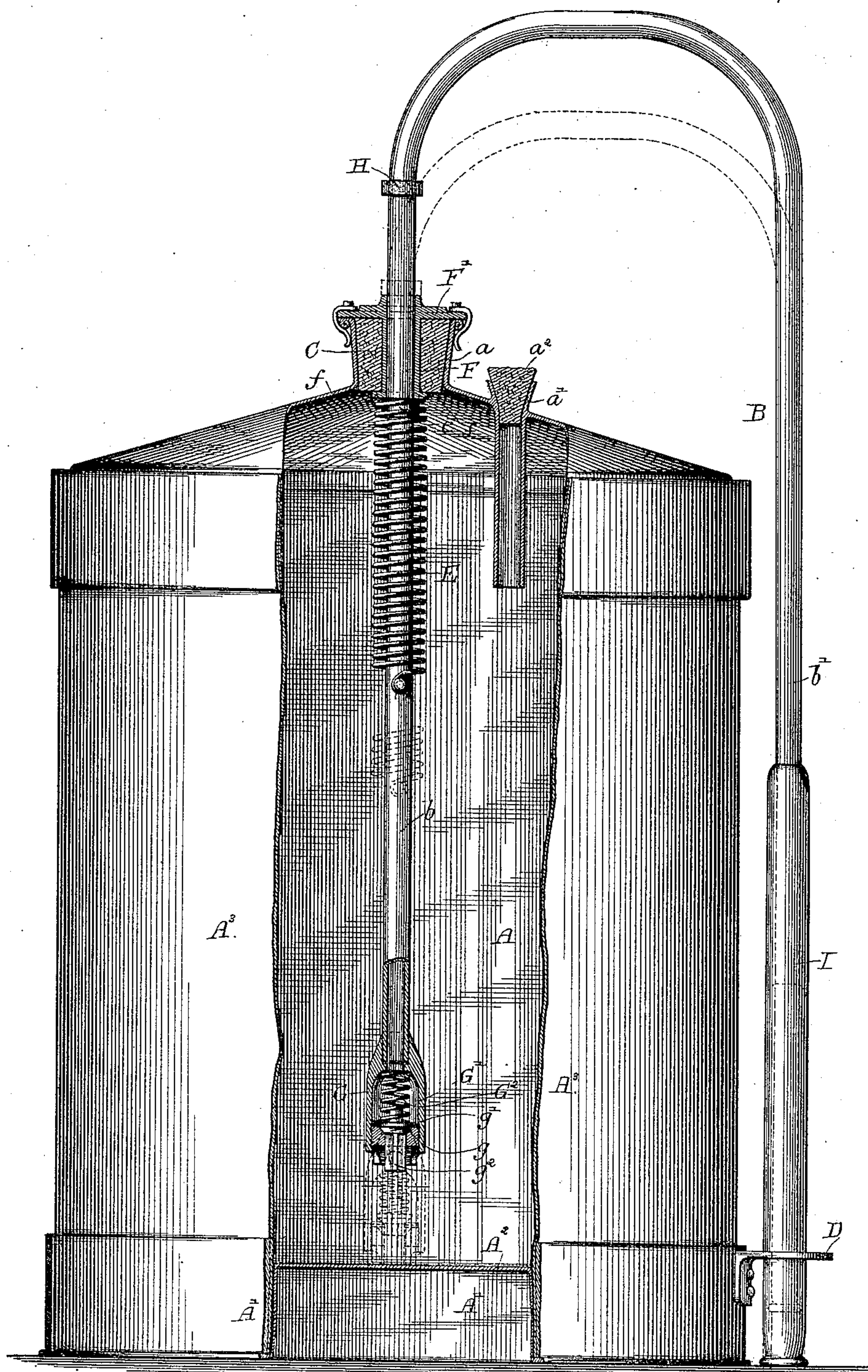


(No Model.)

J. F. THOMPSON.
SIPHON FOR CANS.

No. 442,696.

Patented Dec. 16, 1890.



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UNITED STATES PATENT OFFICE.

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SIPHON FOR CANS.

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To all whom it may concern:

Be it known that I, JAMES F. THOMPSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Siphons; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in siphons intended for drawing liquid from cans, tanks, barrels, or other storage-vessels.

The invention consists in the matter hereinafter described, and pointed out in the appended claims.

The accompanying drawing, illustrating my invention, shows an oil-can provided with an orifice in its top, together with a siphon embodying my invention passing through the stopper, which is inserted in said orifice, the can being shown partially in section to render visible the full length of the siphon, and the latter being partially in section to show a valve therein.

As shown in said drawing, A indicates an oil can or tank of familiar construction, having a central orifice *a* in its top and an air-inlet passage *a'*, which is closed by a cork or stopper *a*². The can or tank is shown as provided with the usual marginal strengthening-flange *A'* at its bottom, which extends below the bottom wall *A*² of the can and acts to sustain the latter considerably above the shelf or other horizontal surface upon which the can rests.

B indicates the siphon as a whole, the same consisting of a metal tube bent into U form, with one of its parallel parts or legs shorter than the other. The shorter leg *b* of the siphon is located within the can A and passes at its upper end through a stopper C, which is inserted in the filling-orifice *a* of the can. The said shorter leg *b* of the siphon is adapted to slide in the stopper C, thereby enabling the siphon to be bodily moved vertically when in operative position upon or within the can. The longer leg *b'* of the siphon extends downwardly outside of the can to a point near or below the bottom wall of the same in the usual manner.

D in the drawing indicates a metal guide attached to the outer wall of the can and through which the longer leg *b'* of the siphon passes, said guide serving to hold the longer leg of the siphon in place and to guide it when the siphon is vertically moved. The can herein illustrated is made of sheet metal and surrounded by a cylindrical covering *A*³, of thin wood, applied in a manner heretofore common and well known. In connection with a can of this kind the guide D is preferably made of sheet metal and provided with an aperture for the passage of the siphon and secured to the covering *A*³ by nails or screws in the manner illustrated.

E is a spring applied to the siphon to lift or raise the latter bodily. Said spring, as herein shown, is connected with the stopper C and with the shorter leg of the siphon and acts by its contraction to lift or raise said siphon.

In the particular construction herein shown the spring E is of coiled form and surrounds the leg *b* of the siphon, the lower end of the spring being connected by solder with the siphon and the upper end secured to a sleeve F, which is inserted through the stopper C, and is provided at its lower end with a flange *f*, to which said spring is directly connected conveniently by soldering. The upper end of said sleeve F is attached to a plate F', covering the top of the stopper, and which serves, in connection with the flange *f*, to hold the sleeve in place within the stopper. A collar or shoulder *e*, secured upon the leg *b* of the siphon, serves as a stop to limit the upward movement of the latter under the action of the spring E by contact with the lower end of the sleeve F. The spring E, together with the stop *e*, serves to maintain the siphon in position with its lower end raised considerably above the bottom wall *A*² of the can, except when the siphon is pressed downwardly by hand against the action of said spring. At the lower end of said shorter leg *b* of the siphon is located an inwardly-opening spring-valve, indicated as a whole by G, said valve being held normally closed by the spring which moves it, and being provided with a part attached to or moving with the valve, and which projects outside of the valve and

is so located as to strike against the bottom wall of the can, or to encounter some other stationary part of or upon the can when the siphon is depressed, and thereby open the valve against the action of the valve-actuating spring.

In the particular construction of the parts herein shown the valve G comprises a valve shell or casing G', secured to the lower end of the siphon-tube. Within the lower part of said casing is located a valve-seat *g*, to which is fitted a valve-disk *g'*, having attached to it a stem *g*², which passes downwardly through the valve-seat to a point below the lower end of the valve stem or casing, so that it will encounter the bottom wall A² of the can when the siphon is depressed. A spiral spring G² is placed between the top surface of the valve-disk *g'* and the upper wall of the shell or casing G'. Said spring acts to hold the valve-disk closed against its seat, except when said disk is thrust downwardly by contact of the stem *g*² with the bottom wall of the can or other piece or part of or upon the same. Said stem *g*² is herein shown as provided with vertical ribs, which fit against the sides of the opening in the valve-seat *g*, and thus serve as guides for the valve-disk. The shell or casing G' is preferably extended somewhat below the valve-seat and notched or recessed at its lower margin, so that when the casing strikes the bottom of the can the downward movement of the siphon will be arrested without interrupting the flow of liquid through the valve.

H indicates a collar or gasket of rubber or similar material placed around the siphon above the stopper C and adapted to come in contact with the upper edge of the sleeve F when the siphon is depressed, so as to make a tight joint at this point and prevent the leakage of the liquid outwardly through the joint between the stopper and the siphon. Such collar or gasket H will be used only when it is desired to fill the siphon in starting the same by tipping the can bodily until the liquid from the can fills the entire length of the siphon-tube. When it is desired to fill the tube in this manner, the siphon is pressed downwardly until the valve G is opened and the collar or gasket H comes against the top of the stopper, after which the can may be tipped while holding the siphon in this position until the liquid flowing from the can reaches the lower end of the siphon or begins to flow therefrom, when the siphon may be immediately released, whereupon the closing of the valve will retain the charge of fluid within the siphon-tube, and it will be in readiness for subsequent or immediate use in drawing liquid from the can. The gasket H can of course be moved or shifted in the tube to correspond with the varying sizes of different cans. The joint between the siphon and stopper may be made sufficiently tight to prevent the escape of fluid at this point without the use of a packing or gasket, but for ordinary

purposes the joint will be loose enough to allow the tube to slide freely in the stopper, in which case the gasket will preferably be used.

It will of course be understood that after the siphon is once filled in the manner described or otherwise it may be used for an indefinite length of time without refilling, inasmuch as the closing of the valve G will prevent the charge of fluid from flowing from the siphon, even when the latter is held with its ends downward, atmospheric pressure at such time preventing the escape of fluid from the longer leg of the siphon.

The siphon may be charged or filled in other ways than as above described—as, for instance, by inverting it and pouring fluid into one of its ends when the valve G is held open or by applying air-pressure to the liquid within the can when said valve is similarly held open—as, for instance, in the apparatus illustrated the siphon may be depressed until the valve is opened and the air-space about the tube is closed by the gasket H, and air may then be blown into the opening *a'* until the siphon becomes filled with liquid.

After the siphon is once filled or charged and it is desired to draw liquid from the can, it is only necessary to depress the siphon until the valve-stem strikes the bottom of the can or other part located in position to be encountered by the stem, when the valve will be opened and the liquid will begin to flow through the siphon and will continue to flow until the siphon is released or allowed to rise, and the valve is again closed. It will of course be seen that the same spring which operates to close the valve, if made of sufficient strength, will also lift the tube and one spring only may therefore be employed to perform both functions. The use of a second spring acting upon the siphon-tube to sustain the latter a considerable distance above the lowermost limit of its movement is of advantage, however, for the reason that the lower end of the outer or longer leg of the siphon may thereby be sustained a considerable distance below the bottom or lower edge of the can when the siphon is in use, thus enabling the lower end of the siphon to be brought into position more convenient for filling a lamp or other vessel from the siphon.

The use of a can having a flange or rib A' at its bottom is of advantage, as the presence of such flange or rib enables the outer leg of the siphon to be made considerably longer than the other leg.

I indicates a sliding sleeve, which is placed upon the lower end of the leg *b'* of the siphon, to extend the same downward. Such sleeve is of great advantage in filling lamps or other vessels when the same cannot be conveniently held close to the siphon proper—as, for instance, when the can rests on a shelf and it is desired to place the lamp or other vessel on a table below it while being filled or to meet inequalities in the height of the vessels to be filled.

The external part of the siphon may be made of rubber or other flexible tubing when the liquids used are of such character as to admit of the use of such tubing.

5 I claim my invention—

1. A tank or vessel combined with a siphon provided with a valve at the lower end of its shorter leg, and having a stem or projection attached to the movable part of the valve and
10 extending outside of the valve-casing, and a spring applied to lift the siphon, substantially as described.

2. A tank or vessel combined with a siphon provided with a spring-actuated valve at the
15 lower end of its shorter leg, and having a stem or projection extending outside of the valve-casing, and a spring applied to the siphon for lifting the same, substantially as described.

3. A tank or vessel and a stopper combined
20 with a siphon sliding in said stopper, said siphon being provided with a spring-actuated valve at the lower end of its shorter leg and

having a stem or projection extending outside of the valve-casing, and a spring engaging the siphon and stopper for lifting the former. 25

4. The combination, with a tank or vessel and a stopper, of a siphon sliding in the stopper and provided with a valve at its lower end, and a collar or gasket upon the siphon to close the joint between the siphon and the
30 stopper when the siphon is depressed, substantially as described.

5. The combination, with a vessel and a stopper, of a siphon sliding vertically through the stopper and an external guide on the ves-
35 sel for the longer leg of the siphon, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

JAMES F. THOMPSON.

Witnesses:

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GEORGE W. HIGGINS, Jr.