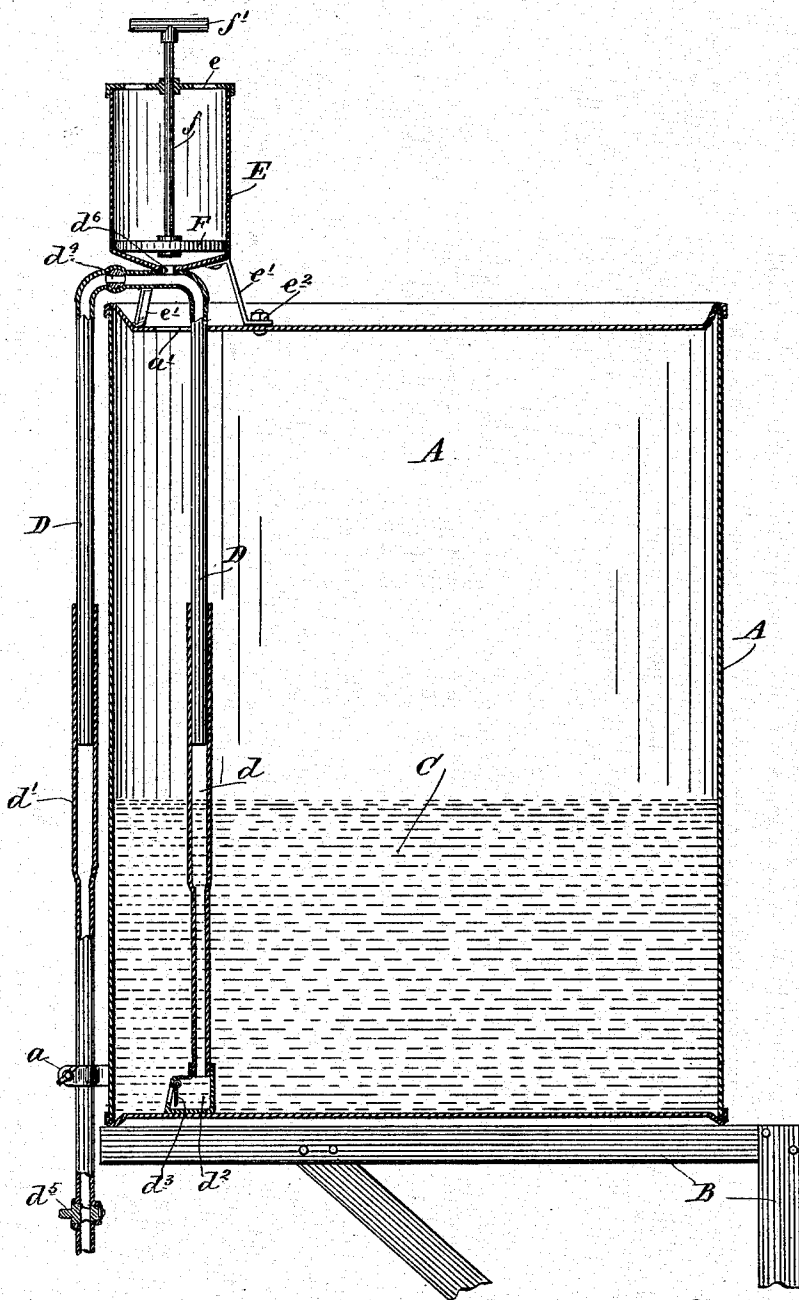


(No Model.)

J. A. CAMP.
SIPHON.

No. 518,663.

Patented Apr. 24, 1894.



Witnesses.
A. H. Opsahl
Rant. D. Morland.

Inventor.
James A. Camp
By his attorney.
Jas. F. Williamson

UNITED STATES PATENT OFFICE.

JAMES A. CAMP, OF MINNEAPOLIS, MINNESOTA.

SIPHON.

SPECIFICATION forming part of Letters Patent No. 518,663, dated April 24, 1894.

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To all whom it may concern:

Be it known that I, JAMES A. CAMP, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Siphons; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to siphons and has for its object to provide, first, a siphon tube which may be readily adjusted for application to vessels of different depths; and second, to equip the siphon with a conveniently arranged and efficient pump for starting the siphon action.

To these ends, my invention consists in the novel features of construction and novel arrangement of the parts which will be hereinafter fully described and be defined in the claim.

The preferred form of my invention is illustrated in the accompanying drawing, wherein like letters refer to like parts.

The figure is a vertical central sectional view, illustrating the invention, as applied to an ordinary oil can or tank.

A is the oil-tank, which as shown, is supported on a bracket or shelf B.

C is the liquid in the can, assumed to be oil.

D d d' is an extensible siphon tube, of which D is the body section or siphon proper, and d d' are extensible sections having telescoping joint connections with the ends of the section D, and constituting respectively, the receiving and the delivery end sections of the siphon. The lower end of the receiving section d is enlarged to form a valve-box d^2 , in which works a check-valve d^3 , which valve acts to permit the free flow of the liquid into the tube from the can, but prevents the return or reverse flow of the said fluid. This check-valve is as shown and preferred, in the form of a hinged leaf, gravity held in a position slightly opened. In virtue of this construction a very slight flow of the fluid into the tube will suffice to throw the valve into its extreme open position, while the slightest return pressure will act to close the valve.

d^4 is a stop-cock located in the section D, at the crown of the siphon; and d^5 is a simi-

lar stop-cock located in the lower end of the delivery section d' and below the column of liquid in the tank A.

E and F are respectively the cylinder and piston of the pump for starting the siphon action in the siphon tube. The bottom of the pump cylinder is secured (by solder or otherwise) to the crown of the siphon section D, and is in communication with the same through an opening d^6 located at a point on the siphon inward of the stop-cock d^4 . The piston F has a rod or stem f , which works through the upper skeleton-like head e of the cylinder E and is provided at its upper end with a handle f' for operating the same. The pump cylinder, as shown, is provided with feet e' , adapted to be removably secured to the top of the can A by bolts and nuts e' and e^2 , for supporting both the pump and the siphon in their working position. The delivery section d' of the siphon tube is preferably subject to the action of a spring clamp α on the exterior of the can by which the said section is guided and may be held in any desired adjustment. This clamp serves to securely hold the said section in its properly adjusted position and to stay the whole siphon tube against lateral movement. In the application shown, the receiving end d d^2 of the siphon tube is inserted into the tank A through an opening α' in the top of the tank. It is evident that this siphon tube, together with its pump, may be interchangeably used in connection with any number of tanks or vessels of different depth, in virtue of its portable and adjustable features. It will be understood, of course, that any suitable device for securing the siphon tube and pump to the vessels may be employed. In placing the tube in position on the vessel, the receiving section d is extended or withdrawn to its greatest length; and is then inserted into the vessel and adjusted to the depth of the same, by forcing the body section D into the said section d , after the valve-box d^2 has struck the bottom of the vessel. The delivery section d' is then so adjusted as to afford the proper overpoise for the siphon action.

The operation is simple. The siphon being placed in position, one of the stop-cocks d^4 d^5 is closed to stop the inflow of air from the delivery end, and then the pump piston

F is drawn upward. This action of the piston, will suck the liquid C from the tank A up through the receiving branch of the siphon tube, into the chamber formed in the pump cylinder under the piston, thus filling the said receiving branch of the siphon and partially filling the said chamber in the cylinder. Both of the stop cocks d^4 d^5 should now be opened. Then, by forcing the piston F downward, the liquid in the pump cylinder E will be forced through the delivery branch of the siphon tube, thus starting the siphon action. In the action just described, the valve d^3 in the valve box d^2 prevented the return flow of the column of liquid from the receiving branch of the siphon, under the downward movement of the piston F. This valve, while desirable, is not absolutely necessary; for without the valve d^3 , by a quick action of the piston, on the down stroke, enough of the liquid from the cylinder would be forced into the delivery branch of the siphon tube to fill the same, and hence to start the siphon action. In the operation thus far described, only one of the stop-cocks d^4 d^5 would be required. These stop-cocks have, however, additional functions. When it is desired to stop the siphon action permanently, until again started by the pump, the stop cock d^4 will be closed. When, however, it is desired to stop the flow through the tube, for but a short interval of time, and without breaking the si-

phon action of the tube, the stop cock d^5 will be closed, thus holding an over poisoning column of liquid in the delivery branch, of the siphon; which, when released by opening the said stop-cock d^5 will again become active to start the flow through the siphon tube. If the pump cylinder E, be made of the proper size relative to the siphon D d d' , the stop-cock d^4 may be dispensed with and an air vent with stop plug or cover be substituted therefor at the crown of the siphon for breaking or stopping the siphon action.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

The combination with the siphon-tube, constructed with telescoping branches, the inner branch of which terminates in the valve-box having the check-valve, and the outer section of which is provided with a pair of stop cocks, one located at the crown of the siphon outward of the pump, and the other of which is located at a point below the liquid level, and the pump located on the crown of the siphon and in communication therewith, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES A. CAMP.

Witnesses:

JAS. F. WILLIAMSON,
E. F. ELMORE.