

(No Model.)

G. T. TILDEN.  
SIPHON TANK.

No. 576,006.

Patented Jan. 26, 1897.

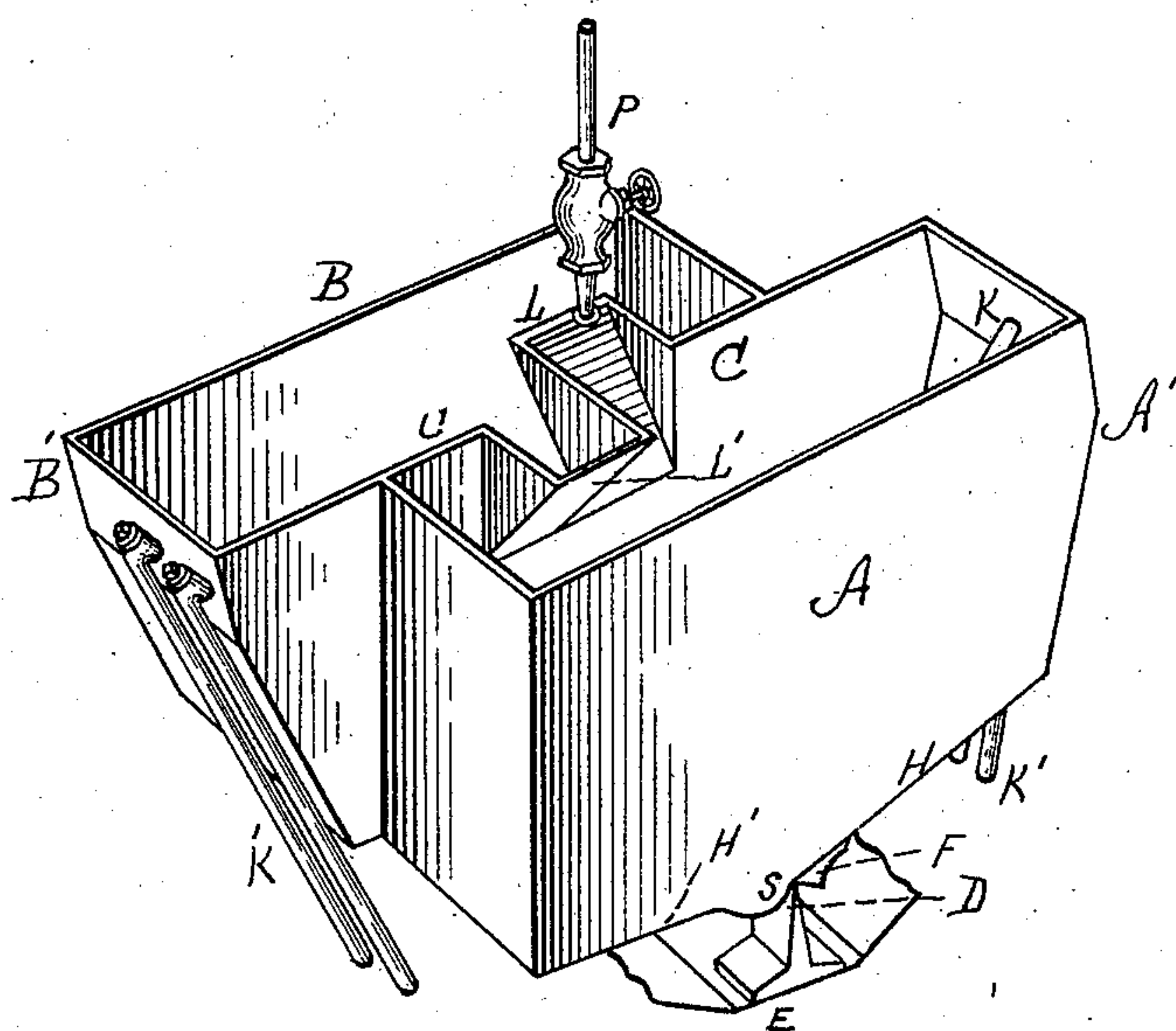
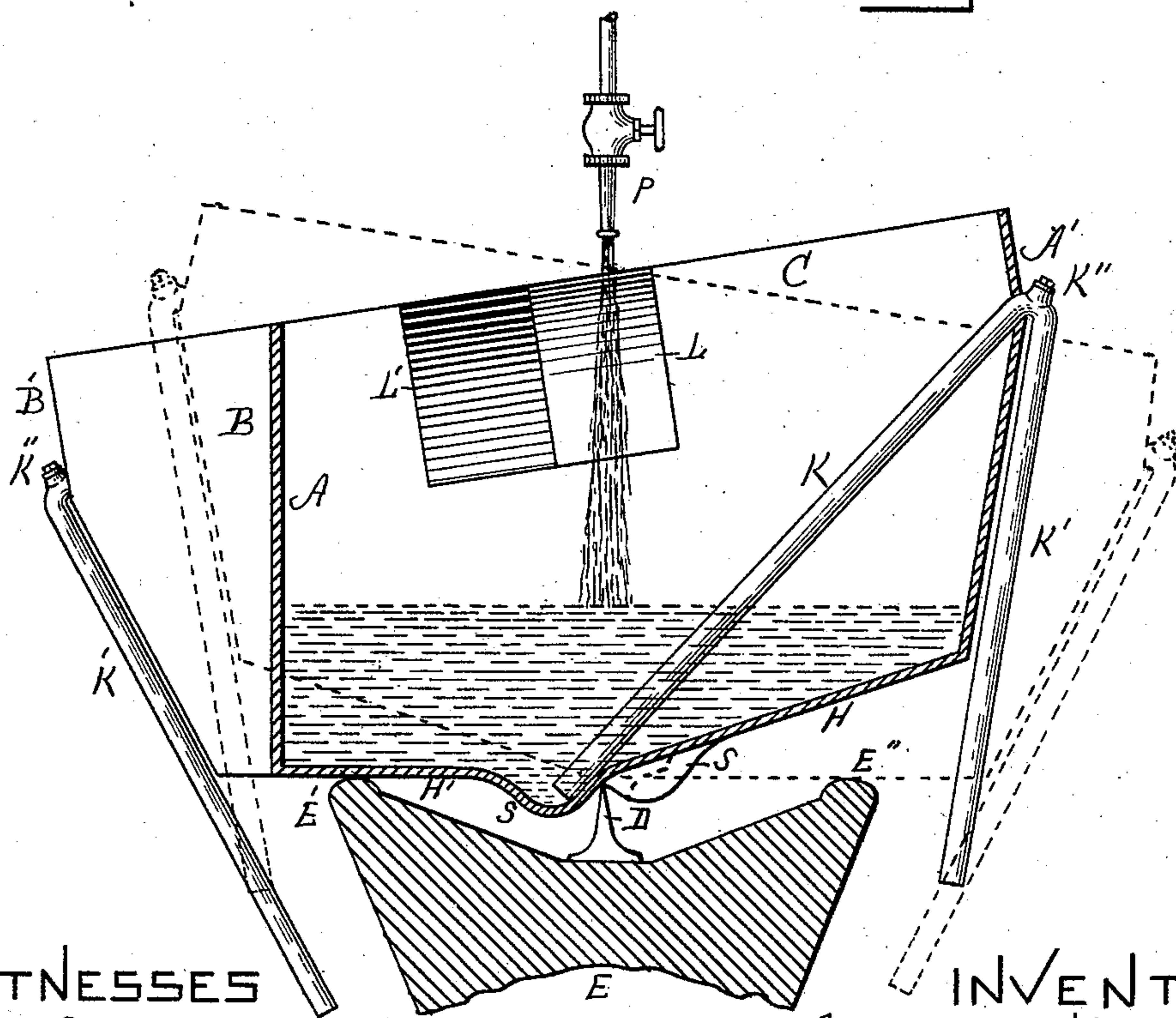


Fig. 1.



WITNESSES  
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Fig. 2.

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# UNITED STATES PATENT OFFICE.

GEORGE T. TILDEN, OF MILTON, MASSACHUSETTS.

## SIPHON-TANK.

SPECIFICATION forming part of Letters Patent No. 576,006, dated January 26, 1897.

Application filed May 15, 1896. Serial No. 591,602. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE T. TILDEN, a citizen of the United States, residing in Milton, in the county of Norfolk and State of Massachusetts, have invented a new and Improved Siphon-Tank, of which the following is a specification.

This construction comprises a tank or receptacle suitable for holding water or other liquid, and a siphon or siphons, the said tank being so supported and the siphon or siphons so combined or arranged therewith that the tilting down or dipping of the tank induces siphonic action, said tilting or dipping being produced by the supply of water thereto and through the action of gravity. By this means a continuous or intermittent discharge of liquid is produced, continuous if the inflow and outflow are equal and intermittent if the inflow is less than the outflow.

The preferable construction, and that illustrated in the accompanying drawings, comprises two rigidly-connected tanks or one tank with two distinct and separate chambers, the two being so pivotally supported that while one tank is being emptied by the siphon tube or tubes extending thereinto the other is being filled by the supply-pipe. These tanks therefore moving together alternately tilt or dip and discharge by siphonic action and swing up and are filled, one tank being filled while the other is discharging, and vice versa.

This improved tilting siphon-tank may be used for supplying water to water-closets, for the emptying of receptacles containing sewage, and in many other positions and conditions where continuous or intermittent discharge of water or other liquid is desired.

The nature of my invention is fully described below, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a pair of rigidly-connected tanks (or a tank with two separate chambers) embodying my invention. Fig. 2 is a longitudinal vertical section showing my improved siphon-tank in operation.

Similar letters of reference indicate corresponding parts.

A and B are two similar tanks placed side by side and rigidly connected or united, but so set with relation to each other that the

discharge end of each tank projects beyond the opposite end of the other tank. In the drawings the two tanks constitute a single structure, the wall C separating the tanks and being common to both. This structure is supported centrally pivotally in any suitable manner, the means shown in the drawings consisting of a knife-edge D, extending vertically from a suitable base E, whose portions E' E'' serve to limit the movement of the tanks. This support E is so arranged that the tanks will tilt longitudinally, that is to say, on parallel vertical planes, and the bottom of the tanks is provided with a suitable grooved construction F to prevent slipping. On substantially the line of support the bottom of the tanks makes a bend so that said bottom consists of the two portions H and H', which form an obtuse angle.

The outer or projecting ends A' and B' of the tanks are each provided with one or more siphons, (two being shown in the drawings,) the short legs K of which extend into the tanks and the long legs K' of which extend down outside the tanks. These siphons extend through the ends A' B' of the tanks at a height previously ascertained to produce the below-described operation of the siphons.

The wall C, which separates the two tanks, is formed into two guideways or troughs L and L', the former extending into the tank B and leading into the tank A, and the latter projecting into the tank A and leading into the tank B. A supply-pipe P is located substantially over the line of the partition C at the point where it is intersected by the line of the pivotal support D, with the result that the water from the supply-pipe will be guided by the trough L into the tank A in case the end A' of said tank is tipped up, or by the trough L' into the tank B in case the end A' of the tank A is tilted down.

Supposing the supply of water from the pipe P to be continuous and to be over the trough L and guided thereby into the tank A, the water rises in said tank until it reaches such a height that, by reason of the shape and the location of the pivotal support thereof, its weight causes the end A' of the tank to tilt down, thus carrying the connecting-point K' between the two legs K and K' of the siphon



below the level of the water. This causes the siphon or siphons in the tank A to begin to operate and said tank to be gradually emptied by the siphonic action, such tank meantime resting on the pivot D and the portion E'' of the base. When the tank A is tilted down, the trough L' is brought under the water-supply, so that while the tank A is being emptied by siphonic action the tank B is being filled by the supply-pipe. When said tank B is filled to such a point that it overbalances the tank A, the end B' of said tank B will tilt down and the siphons connected therewith be brought wholly below the level of the water and begin to empty said tank, continuing until it is tilted up by the weight of the water, which has meantime been pouring into the tank A, said tank A having rested during this process on the pivot D and support E'. Thus the outer ends A' B' of the tanks dip or tilt down alternately, bringing their siphons alternately into action and producing an intermittent discharge, that is to say, a discharge first from one tank and then from the other, and practically it is well to have the inlet-pipe of smaller diameter than the siphon-pipe, so that the discharge may be quick and of course intermittent. These discharges may be brought to a common outlet or be led off in different directions, as desired.

It will readily be seen that a single tank could be used instead of the combined tanks or two-chambered tank illustrated, in which case the tank would, when filled, dip, thus producing siphonic action, would discharge, and after it had partially emptied itself recover its original position and be refilled, all practically without interrupting the siphonic action.

A depression S is preferably formed in the bottom of each tank, into which depression the leg K of the siphon can extend, thus enabling the tank to be emptied more completely.

Having thus fully described my invention,

what I claim, and desire to secure by Letters Patent, is—

1. A siphon-tank, comprising two tanks or receptacles adapted to hold liquid and rigidly secured to or integral with each other; a common support therefor of such a character that the opposite ends may be alternately tilted or moved up or down, said tanks or receptacles being of such shape and so set with relation to each other that the admission of liquid into one tends to overbalance the other; a siphon or siphons secured to one tank at one side of the point of common support, and to the other tank at the opposite side thereof; and a liquid-supplying apparatus set substantially over said point of support and adapted to discharge only into the tank whose end containing the siphon is uppermost, said siphons being arranged to commence to discharge at the moment when the end at which they are placed is moved down, substantially as described.

2. The herein-described siphon-tank, consisting of the two tanks or receptacles A, B rigidly connected by the common wall C, said tanks being set reversely and with their outer ends A' and B' extending beyond the opposite ends of the tanks B and A respectively, and said wall C being formed with the guideways or troughs L, L' extending into the tanks B and A respectively; the support consisting of a base provided with the edge D and lower rests E', E'' on opposite sides of said edge; a liquid-supplying apparatus placed centrally over the tanks and adapted to supply the tanks alternately by means of said guideways or troughs as said tanks tilt on the edge D; and one or more siphons secured within the tanks at their projecting ends and extending therefrom, whereby siphonic action is induced in the tanks alternately by the tilting thereof, substantially as set forth.

GEORGE T. TILDEN.

Witnesses:

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