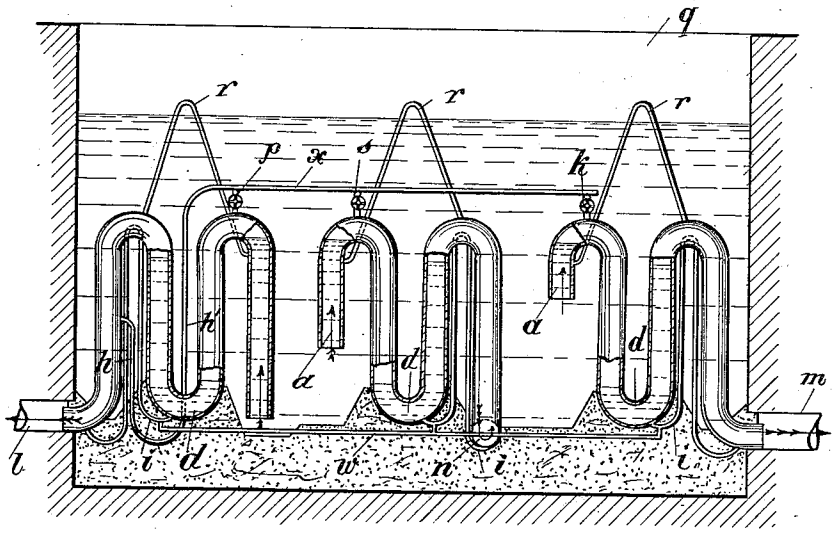
J. HERZFELD.

INTERMITTENTLY ACTING DOUBLE SIPHON.

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1,077,471.

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UNITED STATES PATENT OFFICE.

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INTERMITTENTLY-ACTING DOUBLE SIPHON.

1,077,471. Specification of Letters Patent. Patented Nov. 4, 1913.

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To all whom it may concern:

Be it known that I, JULIUS HERZFELD, a subject of the Emperor of Germany, residing at Schöneberg, near Berlin, Germany, have invented certain new and useful Improvements in Intermittently-Acting Double Siphons, of which the following is a specification.

The present invention relates to improvements in siphons particularly intermittently acting double siphons.

The principal conditions for bringing about an accurate working of the hitherto used siphons need not to be taken into consideration in the construction of double siphons according to the present invention. The only condition which must be met, and upon which the automatic, immediate and reliable action of the siphon depends, is the previously determinable accumulation or choking of the water in the collecting tank to a given height as will be hereinafter described. The water supplied which may be conducted to the tank in any suitable manner, may be supplied very slowly, it may even be supplied by drops only without in any way impairing the accurate and quick action of the double siphon system. The means employed for obtaining this object consists in the provision of a compensation of the pressure between the two siphon chambers by means of a communication pipe, after the water seal has automatically been displaced from the pipe provided for the ventilation of the siphon, so that the lock liquid, separating the two siphon chambers and required for the intermittent action is reproduced in the blow-out tube when the tank is empty, and can never be carried away by the action of the siphon. In consequence of the accurate action obtained by these means, the siphon according to the present invention can be used for flushing purposes of all kinds, such as sewerage systems, or any other pipe systems for water-closets and finally also for measuring purposes.

In the accompanying drawing forming part of this specification the object of the present invention is illustrated in its preferred form as an example, in side view with the tank in section.

With the known siphons it frequently occurred that the water seal was carried away in the blow-out tube because the air could not enter the arms of the siphon either in a proper manner during or after the discharge, of the siphon, either from the water inlet or the discharge end, or from both ends, whereupon the siphon would refuse to provide a further automatic flood. The proper entrance of air into the siphon may be rendered possible by properly dimensioning the lowest water level in the tank at the discharge of the siphon under due consideration of the drop of the drain by accordingly arranging the discharge opening or by other complicated accessorial constructions. The double siphon according to the present invention will however obviate the necessity of all careful calculations and such accessorial constructions, as the pressure compensating pipe will by its combined action with the blow-out tube produce the hereinbefore mentioned accurate action of the double siphon in the most simple manner.

The figure illustrates the principal construction and form of such a double siphon and shows three double siphons in the flushing tank q, the upper bends of which communicate by means of a pipe x. This pipe x constituting a blow-out tube is bent for the purpose of producing a water seal h and enters with its end into the discharge of one of the three double siphons. In the pipe x are provided the valves p, s and k, which are opened or closed accordingly as one or several siphons are to flush. The tank q has three discharge outlets l, m, n to the system of conduits. For carrying off the water falling back into the middle bend d after each discharge period, three auxiliary siphons i are provided which communicate with each other by means of a pipe w, so as to insure an absolutely safe discharge from all three bends d. For controlling the quantity of water with which the individual conduits extending from the tank are flushed, the inlet pipes of the siphons are of different heights with relation to the water level. If they are made all of the same length, the tank will be uniformly emptied by all three siphons after the common water seal has been removed. If the inlet pipes are made of different lengths the siphon with the shortest inlet pipe will break off first, then the one with the next longest pipe will follow, and finally the one with the longest pipe.

I claim:

1. In combination with a tank having a plurality of outlets, a series of intermittently acting double siphons for the several outlets of said tank, a common blow-out tube closably connected to said siphons and serving as an auxiliary water seal for all the siphons, auxiliary means for carrying off the water remaining in the lower bend of said siphons, and a common pipe connecting said auxiliary means, substantially as described.

2. In combination with a tank having a plurality of outlets, a series of intermittently acting double siphons for the several outlets of said tank, a common blow-out tube closably conected to said siphons and serving as an auxiliary water seal for all the siphons, auxiliary siphons adapted to carry off the water remaining in the lower bends of the siphons, and a common pipe connecting said auxiliary siphons, substantially as decribed.

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

JULIUS HERZFELD.

Witnesses:
HENRY HASPER,
WOLDEMAR HAUPT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."