

(No Model.)

J. P. PUTNAM.
SINK.

No. 403,777.

Patented May 21 1889.

Fig. 1.

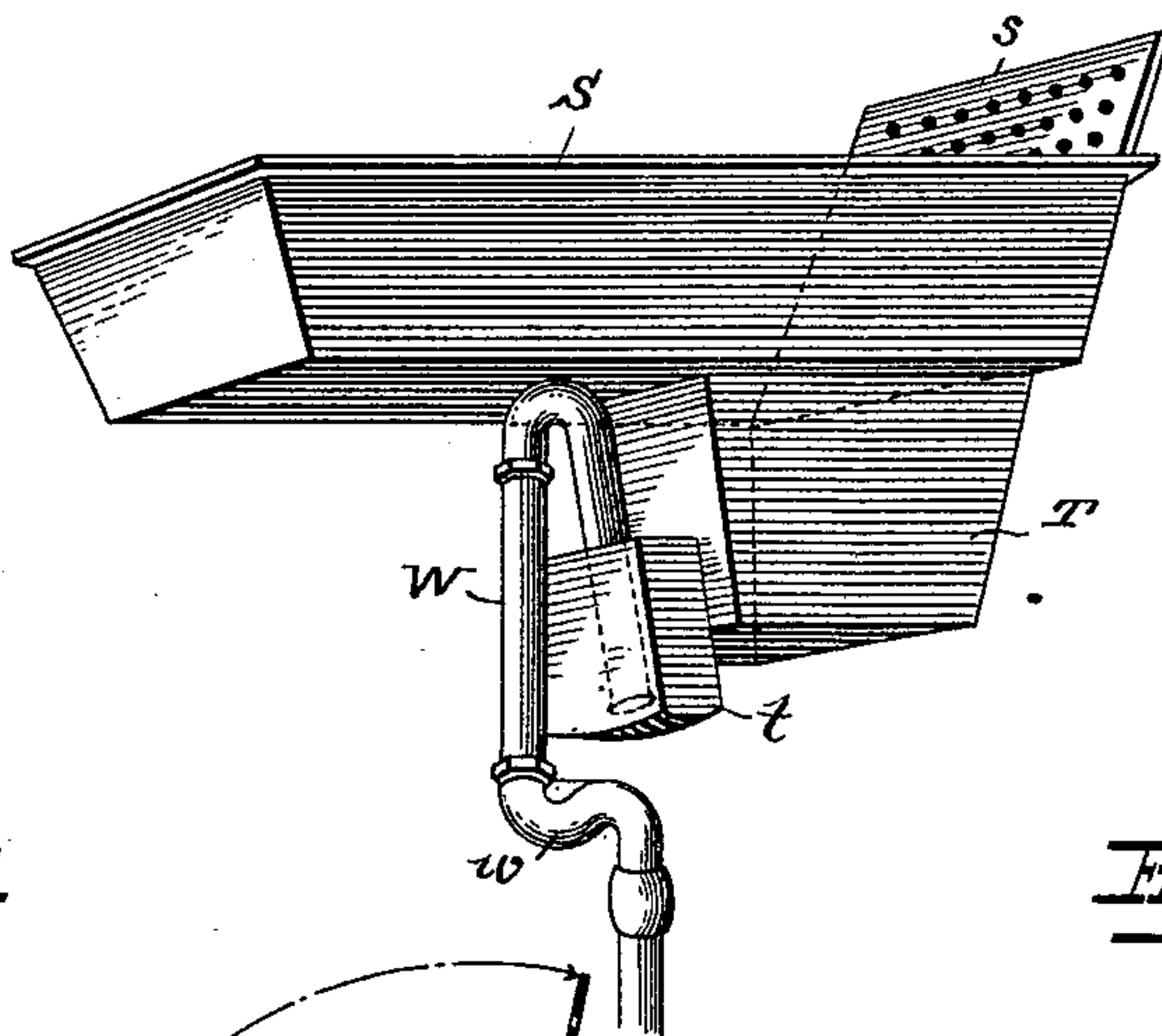


Fig. 2.

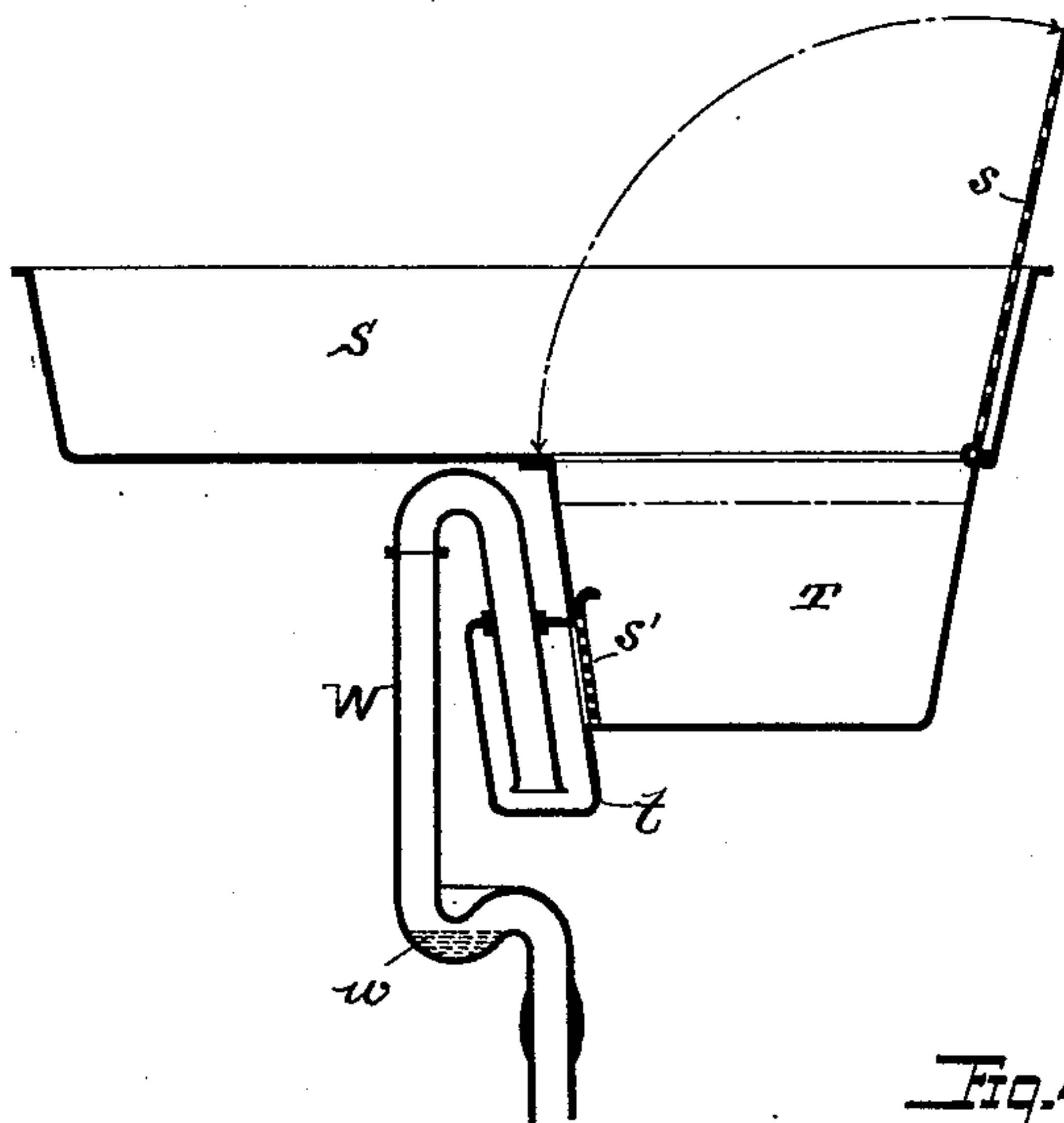


Fig. 3.

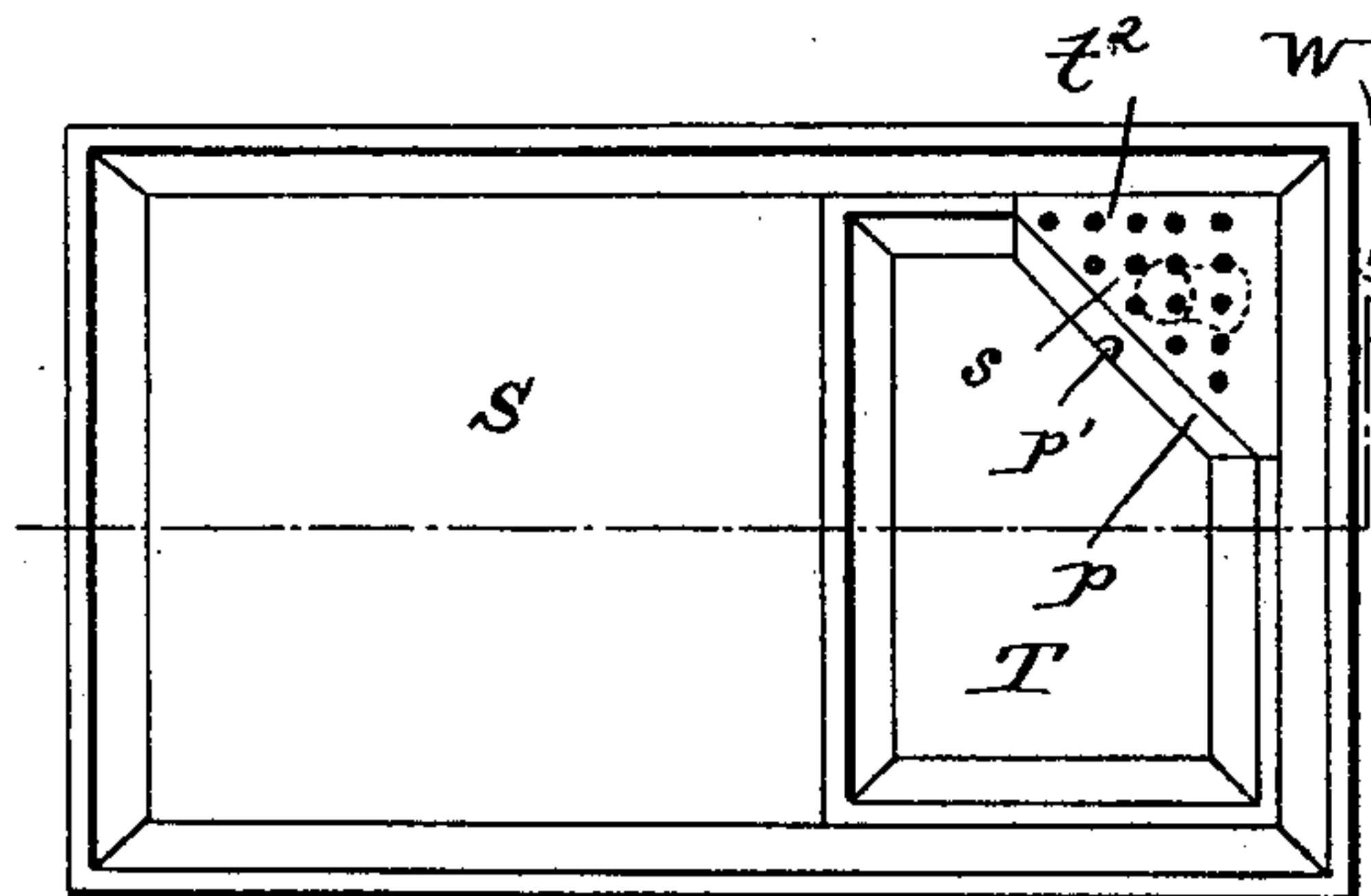
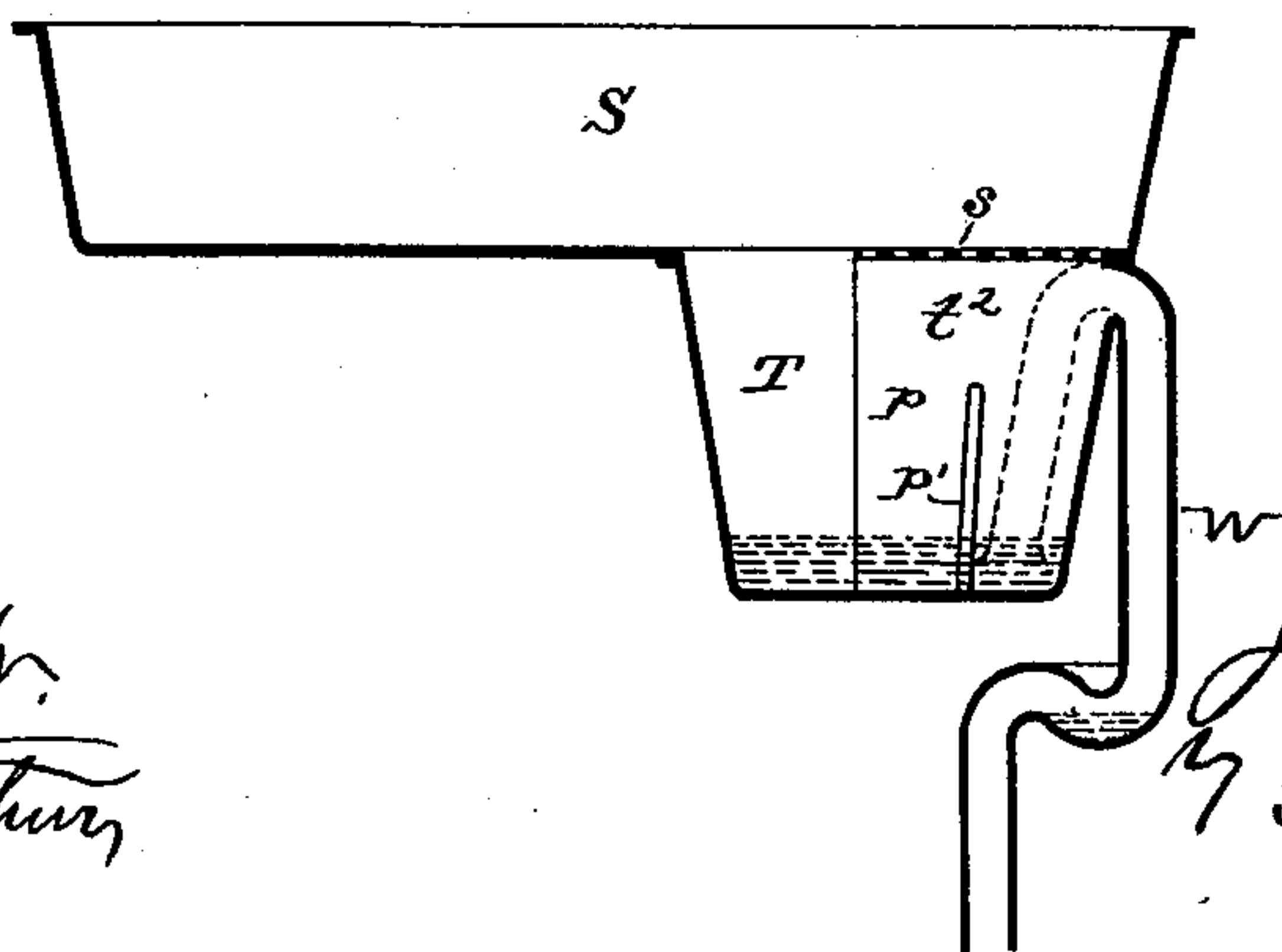


Fig. 4.



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UNITED STATES PATENT OFFICE.

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SINK.

SPECIFICATION forming part of Letters Patent No. 403,777, dated May 21, 1889.

Application filed January 13, 1888. Serial No. 260,640. (No model.)

To all whom it may concern:

Be it known that I, JOHN PICKERING PUTNAM, of Boston, Massachusetts, have invented a new and useful Improvement in Sinks, of which the following is a specification.

The invention relates to a sink provided with a flush-tank immediately connected therewith and in turn provided with an automatically-operating discharge-pipe, whereby the waste waters and drippings of the sink are held back until a sufficient quantity has accumulated to insure the cleansing of said discharge-pipe and pipes connected therewith, and are then discharged independently of the control of the person using the sink either to cause the discharge or to prevent it.

It consists in certain details of construction, some of which are applicable to the automatically-operating flush-tank independently of the sink, and of these more especially it consists in a provision for retarding the flow of water to the discharge-siphon of the flush-tank, and thereby admitting air thereto before the flush-tank is emptied. The flush-tank is formed with two chambers—one a receiving chamber or receptacle for the drippings of the sink or water of operation and the other a discharging-chamber provided with an automatic discharge-siphon, the said receiving-chamber leading horizontally into the said discharging-chamber by a vertical opening or passage-way reaching substantially to the bottom of the said receiving-chamber and narrower than the said receiving-chamber.

I am aware that automatically-operating flush-tanks have heretofore been used in connection with sewerage systems; but there has been no way devised hitherto to my knowledge to prevent the accumulation of grease and kitchen refuse in the small waste-pipes immediately connected with sinks. I am also aware that flush pots or tanks constructed to be operated by hand have been used with sinks; but these in practice have failed through the persons in charge leaving the outlet open, and thus permitting refuse, even bones and similar solid matters, to be swept into it to clog the trap and pipes. By my device I remedy these difficulties, and not only is grease prevented from accumulation by virtue of the principle of the flush-tank, but

at the same time the construction and mode of operation attending the construction are such that no bones or other solid matters can under any circumstances gain access to the pipes.

Figure 1 is a perspective view of a sink provided with my improvement. Fig. 2 is a vertical section of the same. Figs. 3 and 4 are respectively a plan and a vertical section of a modification.

S is the sink proper.

T is the receiving-chamber of the flush-tank, let into the bottom of the sink, as shown, and separated therefrom by a strainer, *s*, which is hinged to the sink proper and forms a portion of the bottom of the sink as well as a lid to cover the tank; and *t* is the discharging-chamber, opening out of the chamber T, as shown.

The opening between the two chambers in the apparatus shown at Figs. 1 and 2 reaches to the bottom of said receiving-chamber and is of the full width of the discharging-chamber, but does not (and this is essential, for a reason hereinafter to be pointed out) take up the whole width of the wall of the receiving-chamber on the side of the discharging-chamber. The bottom of the chamber *t* is sunk below the bottom of the chamber T and has a small superficial area as compared with the bottom of the chamber T, for purposes that will hereinafter appear.

W is a siphon, forming with a weir-chamber, *w*, in its long arm the automatic discharge-pipe of the apparatus. Its short arm enters the discharging-chamber *t* to a depth below the level of the bottom of the receiving-chamber T, and it will be observed that the chamber *t* and the short arm of the siphon form in construction a trap for the entire apparatus. The bend of the siphon W is substantially at the level of the top of the tank T. A strainer, *s'*, is placed in the passage-way between the two chambers, but is not necessary for the proper working of the invention.

The operation is as follows: The waste water of the sink accumulates in the chamber T until it reaches the level of the bend of the siphon, when water will begin to flow over the bend and siphonage will take place with the aid of the weir-chamber *w*. This siphon-

age will continue until the level of the water has been so reduced as to let air into the siphon, and this will happen before all the water in the chamber T has run out, for the following reason: During the first portion of the siphonage, while the water in the receiving-chamber remains at a considerable depth, the operative passage-way between the two chambers is sufficiently large—*i. e.*, wide and deep—to furnish to the discharging-chamber as much water as the siphon is taking therefrom; but when the water gets low in the receiving-chamber only a shallow body of water can pass from one chamber to the other, and the water at each side of the passage-way is retarded and a quantity sufficient to feed the siphon does not flow through, and, air getting into the siphon, stops siphonage before the water ceases flowing from chamber to chamber. After the siphonage is stopped the tailing or remainder of the flow from chamber T to chamber *t* will fill chamber *t* sufficiently to form a seal at the mouth of the siphon, and thereby-trap both sink and tank. This construction permits the entire contents of the receiving-chamber to flow out at each discharge.

In the modification shown at Figs. 3 and 4 the discharging-chamber (in this instance marked *t*²) is at one corner of the flush-tank considered as a whole and a barrier between the two chambers to check the flow of water from one to the other and to the mouth of the siphon, and thus cause air to enter the siphon, takes the form of a partition, *p*, having a long narrow perpendicular slot, *p'*. The bottoms of the two compartments being at the same level, the operation is slightly modified. After the water gets well down in the two compartments the flow through the slot *p'* is too slow to feed the siphon, and, as in the other apparatus, air gets in and breaks the siphonage, while the water walls up in the receiving-chamber behind the partition. A

portion of this water afterward passing through the slot restores the level in the two chambers, and at the same time restores the seal of the trap in this form of construction, however, leaving water in both chambers.

It is requisite that the width of the opening or passage-way between the two chambers shall be narrow enough proportionally to the capacity of the siphon to check the flow of water from chamber to chamber and break the siphonage while sufficient water yet remains in the receiving-chamber to restore the seal of the trap.

I claim—

1. A sink provided with a flush-tank consisting of a receiving-chamber and a discharging-chamber, the former leading horizontally into the latter through a vertical opening or passage-way reaching to the bottom of said receiving-chamber and narrower than said receiving-chamber, and the latter furnished with an automatic discharge-siphon, the operative capacity of the passage-way between the two chambers during the last part of the operation being smaller than that of the siphon, substantially as described.

2. A flush-tank consisting of two chambers, a receiving-chamber and a discharging-chamber provided with a siphon discharge-pipe, the said receiving-chamber leading horizontally into said discharging-chamber through a vertical opening or passage-way, while the bottom of said discharging-chamber is sunk below the level of the bottom of said receiving-chamber, and the inlet-mouth of said siphon is in said sinkage, the operative capacity of the passage-way between the two chambers during the last part of the operation being smaller than that of the siphon, substantially as described.

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