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O. P. CADMUS.
WATER DISTRIBUTER FOR URINAL SLABS.
APPLICATION FILED JULY 10, 1911.

Patented Apr. 22, 1913.

2 SHEETS—SHEET 1.

1,059,343.

Fig. 2.

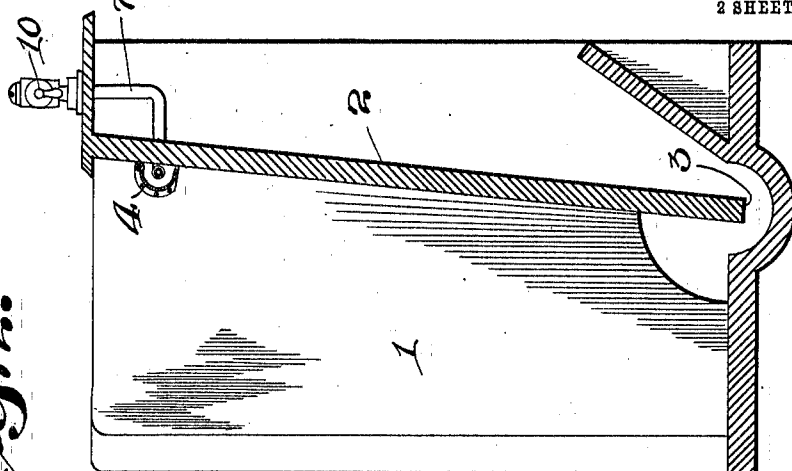
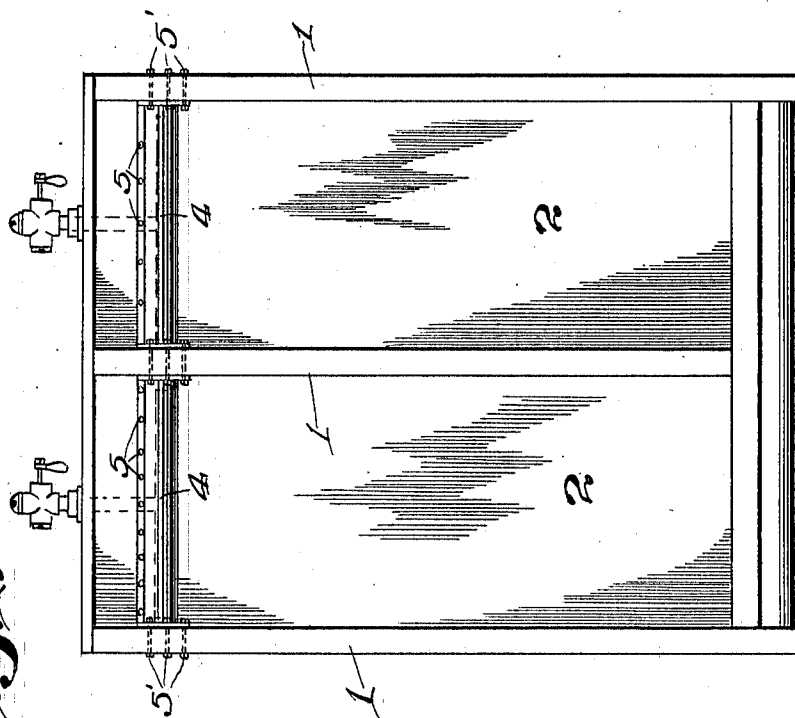


Fig. 1.



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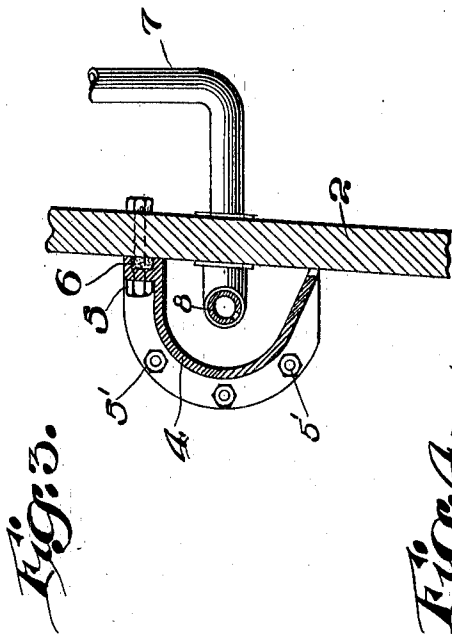
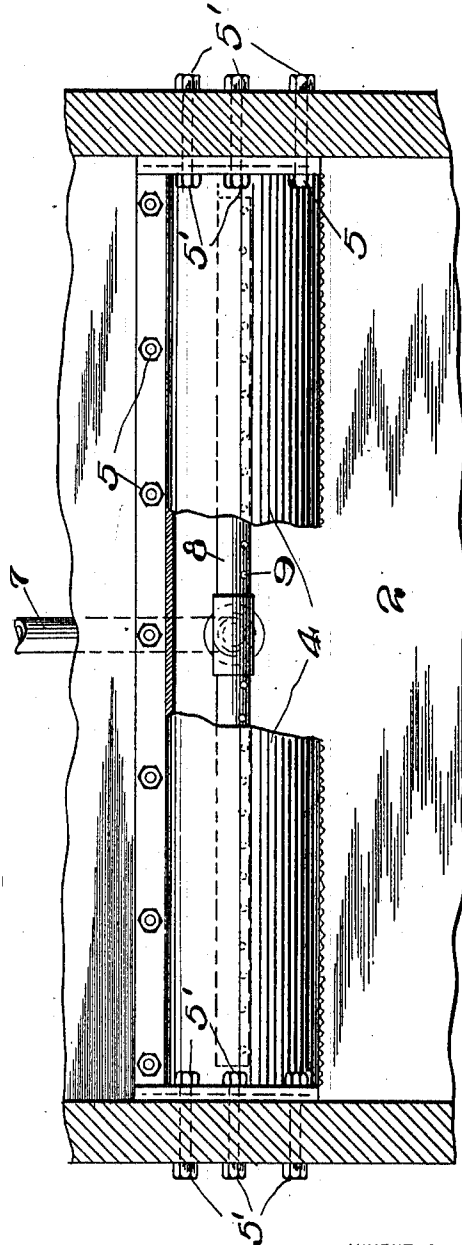


Fig. 4.



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UNITED STATES PATENT OFFICE.

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WATER-DISTRIBUTER FOR URINAL-SLABS.

1,059,343.

Specification of Letters Patent.

Patented Apr. 22, 1913.

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To all whom it may concern:

Be it known that I, OSCAR P. CADMUS, a citizen of the United States, and a resident of Ludlow, in the State of New York, have
5 invented certain new and useful Improvements in Water-Distributers for Urinal-Slabs, of which the following is a specification.

My invention relates to that class of urinals in which a back slab is employed and for sanitary purposes provision is made for causing a stream or sheet of water to flow over the surface of said slab and to be delivered at the bottom in a suitable trough
10 by which it is conveyed away.

The object of my invention is to provide an effective means for securing a uniform distribution over the whole surface of the slab for all of the water delivered on to said surface, and to secure economy in the use of the water by avoiding concentration of the flow on parts of the slab at any stage of the operation. In other words, my invention aims to produce a uniform distribution
20 of all of the water used.

To these ends the invention consists in the novel combination and construction of devices hereinafter described and then specified in the claim.

The invention further consists in a detailed construction of the chamber from which the water is delivered and spread upon the back slab.

In the accompanying drawings, Figure 1 is a front elevation of one form of apparatus embodying my invention. Fig. 2 is a vertical section through one of the compartments. Fig. 3 is a vertical section in enlarged view through the portion embodying the spreader chamber and the distributor. Fig. 4 is an enlarged front elevation of the same part, a portion of the chamber being broken away to show the interior.

The front elevation Fig. 1 shows two
45 compartments of a series of compartments the dividing plates or side plates or partitions of which are marked 1. The back slab indicated at 2 terminates at its lower end in a trough 3, by which the water falling from the lower end of the slab is carried away. Ventilation may be provided at the back as shown by arranging the bottom of the slab intermediate of the back and front edges of the trough.

4 indicates the spreader chamber which is preferably a chamber of any suitable form

adapted to hold water and to deliver the same onto the surface of the slab in a thin or fine stream or streams near its top. The said chamber may be of any desired form.
60 The form shown is a trough supported against the surface of the slab, the said trough and the wall of the slab cooperating to form a container of water. For delivering the water from said container to the
65 back surface of the slab the lower edge where it engages the slab may have one or more narrow or fine openings for which purpose the said edge may have an irregular serrated or wavy outline, as indicated
70 more clearly in Fig. 4, thus causing the water to flow in a series of fine streams which coalesce in a sheet shortly after their escape. The end walls of the chamber may be formed in whole or in part by the dividing
75 plates or sides 1 of the compartments. In this case the ends of the trough 4 abut against said plates in a substantially water-tight manner. The trough may be supported against the back plate by suitable
80 bolts 5 passing through a flange at the edge, suitable packing as indicated at 6 being employed to make a water-tight joint. Similar bolts 5' may pass through flanges at the end of the trough to hold it in a water-tight
85 manner by the use of suitable packing against the plate 1.

The water received within the chamber from a suitable supply pipe 7 is delivered within the spreader and distributed therein
90 in as nearly a uniform manner as practicable through substantially the whole length of the chamber by a distributor of any desired form and having one or any desired number of openings. The supply pipe 7
95 which passes through the back wall preferably of the chamber connects at or about the center of a distributor, and the latter is, for illustration, shown as consisting of a pipe having a number of perforations 9 that are
100 preferably graduated from the center toward the ends of the pipe, being larger toward the ends or being arranged more closely to one another so as to compensate for any diminution of head and cause a
105 practically uniform quantity of water to be delivered from end to end of said distributor. This provision in the construction of the distributor is particularly useful where the head in the pipe 7 is not great, but with
110 large head or pressure in 7, is of diminished importance, and I do not confine my inven-

tion therefore to any particular construction of the distributor itself.

Prior to my invention the water from the openings of a distributor was delivered directly against the slab with the result that any irregularity in the flow of water from the distributor in the direction of its longitudinal axis results in inequality in the flow of water on the surface of the slab, parts thereof receiving more than the necessary amount and others receiving little and being practically unwetted. This is particularly apt to be the case when the flow of water through the pipe 7 begins, there being at such time a tendency to a superabundant flow at the portion of the distributor near the point of connection of the supply pipe. Furthermore, even after the flow in the pipe 7 is established there is a tendency to uneven distribution thereafter which can only be compensated for in part by suitable graduation or other arrangement of the openings in the distributor, as already explained. The first-named tendency to uneven distribution on the slab is counteracted in my invention by delivering the water from the distributor into a spreader chamber from which it may flow to outlets spreading the water upon the slab. To further insure uniform distribution the openings from the distributor are arranged to direct their stream or streams in the manner shown against a spreader plate within the spreader chamber, which plate is by preference a wall of the chamber itself.

In the operation of this class of devices it is ordinarily desirable that the supply of water should be intermittent and of short duration but should be somewhat prolonged upon the surface of the slab, and for this reason it is preferable that the pipe 7 should feed into the chamber at such a rate that the same will fill or partly fill, in which case after the supply is shut off water will flow from the chamber and be spread for some time upon the surface of the slab.

The surface upon which the distributor delivers the water may be any surface with-

in the spreader chamber, but is preferably the inner surface of a wall thereof.

I do not limit myself to any particular form of distributor nor to any particular means for causing it to deliver water in substantially uniform amount through the whole length of the chamber, nor do I limit myself to any particular relation in the rate of supply of water to the chamber and escape therefrom, nor to any particular form or manner of supporting the spreader chamber. The supply to the pipe 7 may be controlled and made intermittent by any desired means as for instance by a valve typified as 10 and operated, constructed or controlled in any desired manner. Also it is to be understood that the delivery of water from the spreader chamber upon the surface of the slab may be by any means for causing the water passing therefrom to flow on the back slab as a thin sheet.

As will be seen, what I call the spreader chamber, operates in effect to modify the action of the distributor which receives the water under the head with which it is delivered by pipe 7 and to cause it to flow with diminished head and in a uniformly distributed condition over the surface of the back slab.

What I claim as my invention is:

In a urinal, a water-holding spreader chamber consisting of a trough a side wall of which consists of a portion of the back plate or slab of the urinal, and having its lower edge serrated and engaged with the face of said slab, and its upper edge engaged in a water-tight manner with the face of said slab while its ends are supported in a water-tight manner against dividing or side plates of a compartment.

Signed at New York in the county of New York and State of New York this 27th day of June A. D. 1911.

OSCAR P. CADMUS.

Witnesses:

E. MEURLING,

IRENE LEFKOWITZ.