No. 703,651. Patented July 1, 1902.

W. U. GRIFFITHS.

SPRAY NOZZLE FOR URINALS.

(Application filed Oct. 4, 1901.)

(No Model.)

FIG. 1.

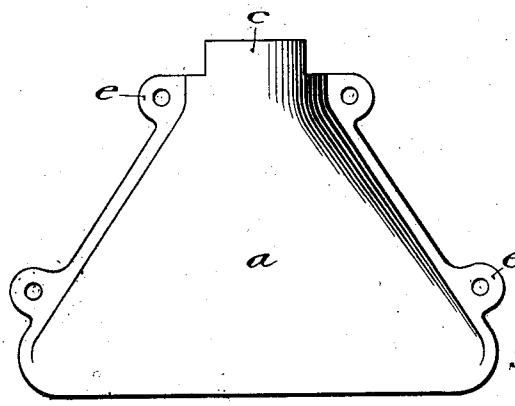


FIG. 2.

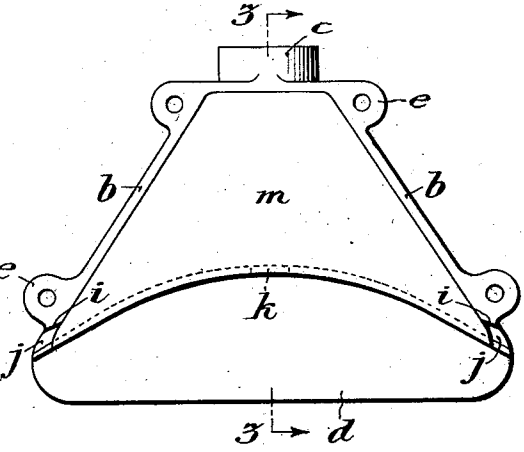
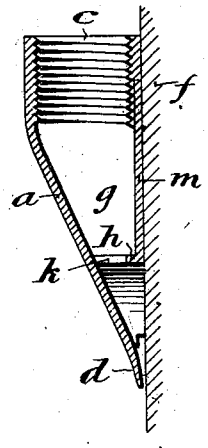


FIG. 3



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WILLIAM U. GRIFFITHS, OF PHILADELPHIA, PENNSYLVANIA.

SPRAY-NOZZLE FOR URINALS.

SPECIFICATION forming part of Letters Patent No. 703,651, dated July 1, 1902.

Application filed October 4, 1901. Serial No. 77,580. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM U. GRIFFITHS, a citizen of the United States, residing in the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Spray-Nozzles for Urinals, of which the following is a specification.

My invention relates to a form of water nozzle which when attached to the water supply pipe of a stall urinal, produces a broadly spreading spray or flow covering the face of the stall.

It is desirable that nozzles of this character shall be of such construction as to produce, with a small water supply, the maximum breadth or spread of the stream or spray delivered; also, that the narrow delivery mouth shall be of such arrangement as to be very readily accessible to a mechanical clearing device, so that it may, when clogged by particles of solid matter received with or in the water, be easily cleared.

In the accompanying drawings, I illustrate the best form now known to me in which my invention may be embodied. Variation in form may, however, be resorted to at the will of the constructor.

In the accompanying drawings,

Figure 1 is a view in front elevation of my improved spray nozzle.

Figure 2 is a view of the same in rear elevation.

Figure 3 is a central vertical section on the dotted line 3–3 of Figure 2. In this figure the device is shown as attached to a wall.

Similar letters of reference indicate corresponding parts.

In the drawings,

a represents the front wall, and *b b* the side walls, of the body, as I term it, of the structure; the convergence of the side walls from their lower to their upper ends imparts to the structure an approximately triangular form in front elevation.

The side walls are conveniently formed as integral continuations of the front wall, and, integral with said front and side walls is formed a neck *c* internally tapped to make connection with a water supply pipe.

The front wall of the structure is inclined from its upper portion to its lower, as shown particularly in Figure 3, the lower edge of said front wall terminating in the lip *d*.

The space between the lip *d* and the wall *f*, and which space is of length determined by the breadth of the nozzle structure, but of very inconsiderable breadth or lateral dimensions—I term the delivery mouth. This mouth delivers the water received through the discharge opening in a wide flat sheet or spray.

The side portions or walls of the structure are conveniently provided with the lugs *e* through which the structure may be attached to the vertical wall *f* of the urinal stall or other fixture.

The rear wall, designated *m*, forms with the front and side walls of the body, the receiving chamber *g* shown in Figure 3. Said rear wall or member is, in the form shown, provided as to its lower edge with an inwardly extending or bottom plate *h* the front edge of which makes contact with and is preferably soldered to the inner face of the front wall *a*.

The plate *h* is preferably of arched form, as shown in Figure 2, its respective extremities extending somewhat beyond the respective edges of the rear wall, a short distance below the lower ends *i* of the side walls.

Lateral delivery openings *j* are, as shown, bounded above by the ends *i* of the walls *b*, in front by the marginal portions of the front wall, and below by the extremital portions of the arch plate *h*.

The water escapes through said respective openings *j* in opposite directions away from the body of the structure.

k is a discharge-opening in the central portion—longitudinally considered—of the plate *h*, said opening existing above the inwardly extending lower portion of the front wall *a*, so that water delivered from the receiving chamber through it will encounter said wall and its lip and be in flowing down said wall and lip deflected into a wide thin stream, which emerges below between the lip *d* and the wall *f* in a fan shaped spray or sheet.

The water from the distributing chamber in addition to discharging through the delivery opening *k* also as stated passes out through the openings *j*, located at the respective sides of the structure, and the streams delivered

through said last mentioned openings are flattened more or less by the deflecting action of the overhanging side edges of the front wall, and by contact with the wall *f*.

The openings *j* are so located that the streams issuing through them join the respective edges of the flat volume of water discharged between the horizontal portion of the lip *d* and the wall *f*, with the result that the aggregate liquid sheet delivered is of very considerable spread.

As will be understood, any particles of sufficient size delivered with the water into the structure, will be caught between the rear face of the lip and the wall *f*, at some little distance above the lower edge of said lip, with the result that any tendency of the water, the evenness of the flow of which may be disturbed by said particles, to spray forwardly away from the wall *f* will be prevented by the depending edge of said lip.

Particles of matter thus caught may be very readily removed by the insertion of a thin implement between the lip and the wall on which the structure is supported, the narrow passage in which said particles are caught being readily accessible to any ordinary implement, held in a vertical position,—and with such position of the implement the wall does not interfere.

The openings *j k* are of such diameter that they will not be clogged by any matter ordinarily carried with the water, any clogging due to particles in the water, which may occur, taking place between the lip *d* and the wall *f*, as described. The localization of the clogging action of water carried particles at this point, and the ease with which access may be had for the removal of the particles, renders the apparatus one in which uniformity of flow of water, and the consequent efficiency of the structure, may be very readily and easily maintained.

Having thus described my invention, I claim—

1. A spray nozzle for urinals, &c., consisting of a body or wall having an inclined lower portion terminating in a lip adapted to form, with a wall or fixture on which the structure may be mounted, a narrow delivery mouth, and means for supplying water to the space between said lip and said wall or fixture, said means having a water discharge opening of diameter in excess of the breadth of the delivery mouth beneath it, substantially as set forth.

2. A spray pipe nozzle including a body having an inclined lower portion terminating in a lip adapted to form, with a wall on which the structure may be located, a narrow delivery mouth, a rear wall connected with the body above said lip to form with said body a receiving chamber, the structure including an aperture of breadth or diameter in excess of that of the delivery mouth referred to, opening from said receiving chamber to discharge water from the receiving chamber upon said inclined lower portion, substantially as set forth.

3. A spray pipe nozzle including a body having an inclined lower portion terminating in a lip adapted to form with a wall on which the structure may be located a narrow delivery mouth, a rear wall connected with the body above said lip to form with said body a receiving chamber, the structure including a discharge opening in the base of said receiving chamber, and apertures adapted to discharge water from the respective sides of the receiving chamber, substantially as set forth.

4. A spray pipe nozzle including a front wall having an inclined lower portion terminating in a lip adapted to form with a wall on which the structure may be located a narrow delivery mouth, a rear wall the lower edge of which is of arched form and is connected to the front wall above the lower edge of the latter to form a receiving chamber, a discharge aperture, of breadth in excess of the mouth referred to, formed in the central portion of the bottom of said chamber, and discharge apertures opening through the lower portions of the respective sides of the structure, substantially as set forth.

5. A spray nozzle including the front plate having the sides, the inclined lower portion, and the lip, said sides terminating above the lower edge of said lip, a rear plate, an arched bottom plate connected to the lower edge of the rear plate, and the inner face of the front plate, respectively, and embodying an aperture in its central portion, substantially as set forth.

6. A spray nozzle including the front plate having the sides, the inclined lower portion, and the lip, said sides terminating above the lower edge of said lip, a rear plate, an arched bottom plate connected to the lower edge of the rear plate, and the inner face of the front plate respectively, and embodying an aperture in its longitudinal central portion, the respective ends of said bottom plate extending beyond the respective lower edges of the rear plate below the lower ends of the side walls, substantially as set forth.

In testimony that I claim the foregoing as my invention I have hereunto signed my name this 2d day of October, A. D. 1901.

WILLIAM U. GRIFFITHS.

In presence of—

S. SALOME BROOKE,

THOS. K. LANCASTER.