

(No Model.)

2 Sheets—Sheet 1.

J. TUCKER.  
URINAL.

No. 524,150.

Patented Aug. 7, 1894.

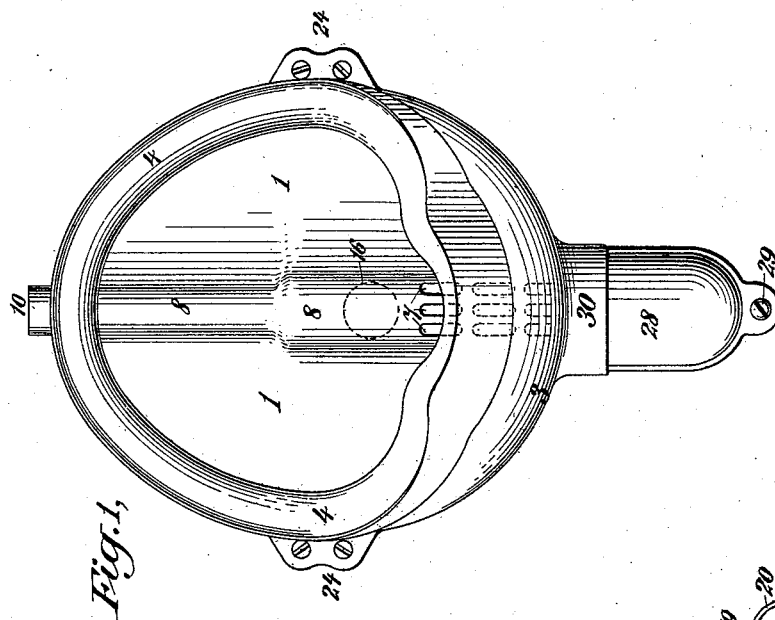


Fig. 1.

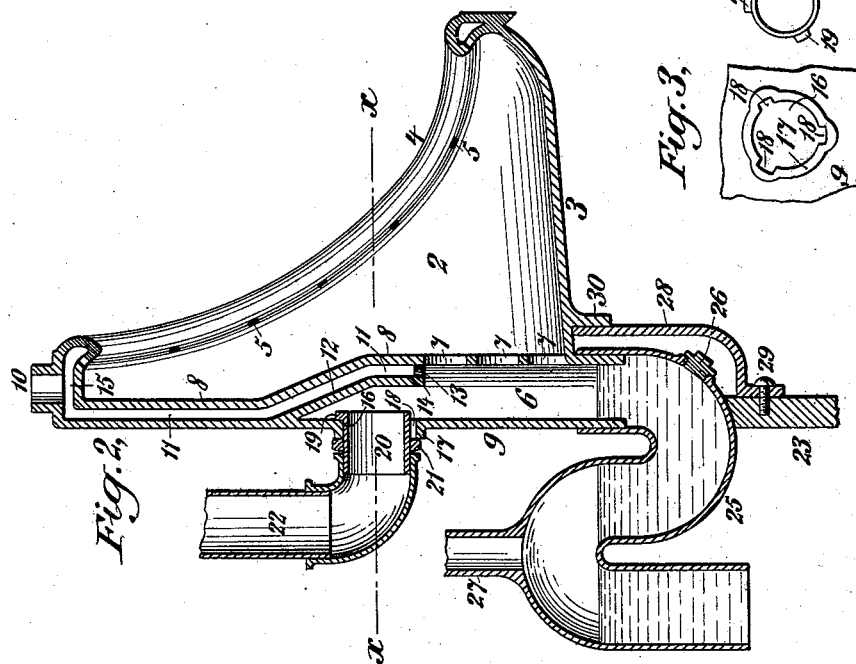


Fig. 2.

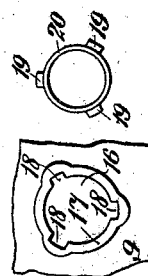


Fig. 3.

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*Jacob Felbel*  
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Fig. 5.

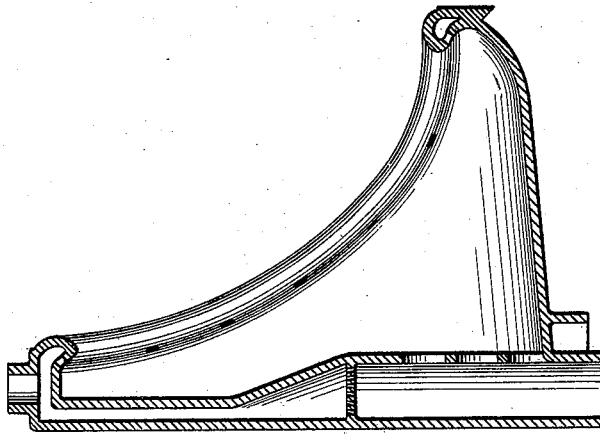
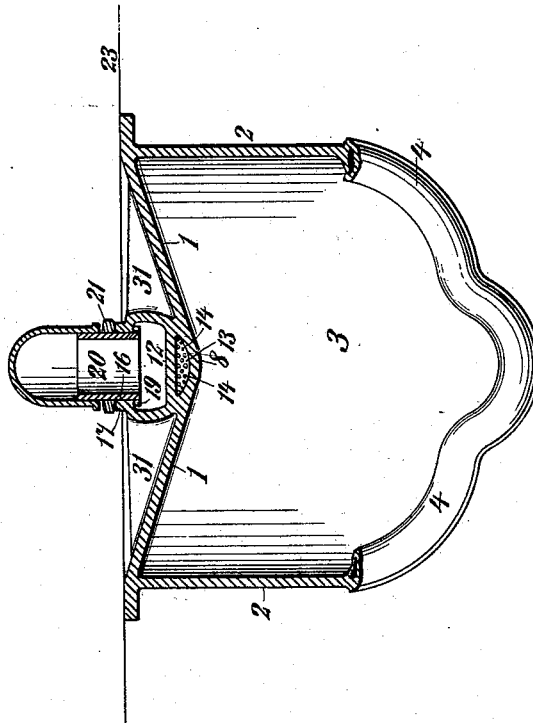


Fig. 4.



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# UNITED STATES PATENT OFFICE.

JOHN TUCKER, OF NEW YORK, N. Y.

## URINAL.

SPECIFICATION forming part of Letters Patent No. 524,150, dated August 7, 1894.

Application filed October 28, 1893. Serial No. 489,353. (No model.)

### *To all whom it may concern:*

Be it known that I, JOHN TUCKER, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Urinals, of which the following is a specification.

My invention has for its main objects, first, the provision of means for flushing the outlet of a urinal independently of and in addition to the usual wash-out flush for the bowl; and, secondly, the provision of means for venting the said outlet and the parts in open communication therewith.

To these ends my improvements consist in the various features of construction and combinations of devices hereinafter more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a front view of a urinal embodying my improvements. Fig. 2 is a central vertical section of the same. Fig. 3 is a detail view of the vent boss and the end of the ferrule or thimble, which enters the same. Fig. 4 is a horizontal sectional view taken at the line *x, x* of Fig. 2; and Fig. 5 is a central vertical section showing a urinal containing that improvement which relates to the outlet flushing means, but omitting that relating to the venting means.

In the several views the same parts will be found designated by the same numerals of reference.

The urinal illustrated is of the single-lipped or cradle type, and comprises a back 1, sides 2, and sloping bottom 3, the whole constituting a bowl or receiver, the upper edge of which is provided with a flushing-rim 4, conforming to the contour of the bowl, and perforated at 5 at various localities to discharge water down upon the back, sides, and bottom of the bowl to cleanse the same. At about the center of the back of the bowl and in rear of the latter at its lower portion is formed or provided a vertical passageway or pipe which constitutes the outlet 6, of the bowl and communicates therewith preferably by three rows of oblong openings 7 in the front wall 8 of the pipe, which wall extends up from the bottom of the bowl substantially to the top of

the urinal and joins the upper portion of the flushing rim 4. The back wall 9 of the said pipe also extends up to the upper portion of the flushing rim and connects with the inlet-nozzle or horn 10 of the urinal. About half-way up, the front wall 8 is preferably inclined rearwardly and upwardly for a short distance and then proceeds up parallel with the back wall to form a flushing-conduit 11, for the outlet 6, over which it is directly located and with which it is in open communication.

Referring more particularly now to Figs. 1 to 4, it will be observed that by the addition of a wall or member 12 the flushing-conduit 11 is extended to the forward side of the outlet and terminates just above the upper tier of the slots 7, where it is provided with a bottom 13, which is provided with a series of perforations 14 so made or disposed as to throw numerous small jets or streams in various directions and in a manner such as to thoroughly wash down the walls of the outlet at all portions from the upper ends of the top row of slots. The upper end of the flushing-conduit 11 communicates with the flushing-rim 4, at 15, and both flushing means receive their water from the common inlet nozzle or horn 10.

The straight, back wall 9 is formed with a circular opening 16, in rear of the lower portion of the flushing-conduit and above the plane of the perforated bottom or spreader thereof. Surrounding the opening on the outside is a boss 17, provided with three grooves 18 extending through the wall 9, for the passage therethrough of a similar number of lugs 19 on a metallic thimble or ferrule 20, which, after such passage, is partially rotated to cause said lugs to engage the inner surface of the wall 9. A clamp-nut 21 is then applied to hold the ferrule securely in position. To the outer projecting end of the ferrule is connected an elbow, and to this a ventilating-pipe 22 leading to fresh air, preferably through the roof.

The back 1 of the bowl is preferably made to incline or slope forward from its outer edges and merge or vanish into the central, protruding outlet and flushing-conduit, for the purpose of preventing the inwardly-projected streams or jets from the flushing-rim striking

against the outlet and flushing-conduit and splashing, which they would be apt to do if the back 1 were made to set parallel with and back against the house or room wall, or slab

23. The outer edges of the back 1 are provided with perforated ears 24, for the attachment of the urinal by screws or bolts.

The outlet 6 extends below the bottom of the bowl, as a neck, to receive the inner end of a metallic trap 25, which may have a trap-screw 26, and a back-air pipe 27.

For the purpose of concealing the trap a shield 28 may be employed, which may be secured by a screw 29, the upper end of the shield being merely slipped behind a depending flange 30, on the under side of the bowl.

The bowl, the outlet, and the flushing-conduit, in fact all of the parts excepting the venting-pipe and the trap, are made integral or of a single piece of porcelain or earthenware.

The bowed or V-shaped back 1 and the outlet and conduit may be more firmly united or connected together by means of ties or strengthening ribs 31, made integral with these parts as shown at Fig. 4.

In operation it will be understood that the flushing water, proceeding from a tank or other source of supply, as usual, enters the inlet-nozzle or horn 10 and divides at 15, part entering the flushing-rim 4 and part the flushing-conduit 11, the former discharging over the walls of the bowl and emptying through the slots into the outlet 6, and trap, and the latter discharging onto and washing down the inner surfaces or bore of the outlet, which it is as necessary to thoroughly cleanse as the bowl itself.

In emptying the bowl's contents into the outlet, under the force of the water from the flushing-rim, the interior walls of the outlet are necessarily thoroughly splashed or splattered, and in prior constructions are therefore rendered foul and dangerous to health.

In my improved urinal, the walls of the outlet are thoroughly flushed or cleansed at each flushing of the bowl and hence the contrivance as a whole is a much more desirable and sanitary one than any heretofore made. With the outlet flush, there is little if any liability of foul odors arising, but in the event of any such emanations they will be carried off by the vent-pipe and thus the urinal fixture and the air in the apartment in which it is located will be kept clean and pure.

Referring now to Fig. 5, the urinal is of substantially the same construction as that heretofore described with the exception that the urinal vent is omitted and the outlet-conduit slightly differently formed. In this modification, the perforated bottom, rose, or spreader of the flushing-conduit extends entirely across the interior of the outlet, instead of only part way, this being possible because of the elimination of the urinal-vent shown in the other figures. The operation of this form of the urinal is substantially the same as that shown

at Fig. 2, as far as the bowl-flushing and outlet-flushing means are concerned.

Various other changes in detail construction and design may be made without departing from the gist of my several improvements.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a urinal, of the bowl, the flushing-rim therefor, the vertical outlet, arranged back of the plane of the bowl, and the outlet flushing-conduit, arranged in rear of the bowl in line with the outlet and terminating above the same.

2. The combination, in a urinal, of the bowl, the flushing-rim therefor, the vertical outlet arranged back of the plane of the bowl, the flushing-conduit arranged in line with the outlet and terminating above the same, and the inlet-nozzle or horn adapted to supply flushing water to both the flushing-rim and flushing-conduit.

3. The combination, in a urinal, of the bowl, the flushing-rim therefor, the centrally-arranged vertical outlet, and the bowl-back inclined forwardly from opposite sides of the outlet and joining the same at its front side or face.

4. The combination, in a urinal, of the bowl, the flushing-rim therefor, the centrally-arranged vertical outlet and integral flushing-conduit, and the bowl-back inclined forwardly from opposite sides of the outlet and the flushing-conduit and joining the faces of the same.

5. The combination, in a urinal, of the bowl having a forwardly-bowed back, and the vertical outlet and flushing-conduit arranged centrally in rear of said back and formed integral therewith.

6. The combination, in a urinal, of the bowl having a forwardly-bowed back, the vertical outlet and flushing-conduit arranged centrally in rear of said back, and the strengthening ribs, the whole being made integral.

7. The combination, in a urinal, of the bowl having a flushing-rim and back delivery, the outlet in rear of the bowl, and the flushing-conduit in line with and formed integral with the bowl and the outlet and provided at its lower end with a perforated bottom or spreader.

8. The combination, in a urinal, of the rear delivery bowl, the outlet back of the same, the aligning flushing-conduit, and the vent leading directly from said outlet.

9. The combination, in a urinal, of the rear delivery bowl having a flushing-rim, the outlet, the flushing-conduit made integral therewith, and the vent arranged in the outlet above the discharging end of the flushing-conduit.

10. The combination, in a urinal, of the bowl having a flushing-rim, the trap, the outlet in rear of the bowl and attached directly to the trap, the flushing-conduit in line with and over the outlet, and the outlet-vent.

11. The combination, in a urinal, of the bowl

having a flushing-rim, the outlet and the flushing-conduit, formed by the walls 8, 9 and 12, and the vent opening formed in the wall 9.

12. The combination, in a urinal, of the bowl  
5 having a flushing-rim, and a bowed-back, the outlet and the flushing-conduit formed by the walls 8, 9 and 12, the slots formed in the wall 8, the vent-opening formed in the wall 9, and the common inlet-nozzle, the whole be-  
10 ing formed of a single piece of earthenware.

13. The combination, in a urinal, of the bowl having a flushing-rim and the perforated

back wall 8, the vertical outlet in rear of said perforations, and the vertical flushing conduit made integral with said outlet and as a 15 continuation thereof and terminating above said perforations.

Signed at New York city, in the county of New York and State of New York, this 25th day of October, A. D. 1893.

JOHN TUCKER.

Witnesses:

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JACOB FELBEL.