H. H. BURTON.

Urinals.

No. 156,980. Patented Nov. 17, 1874.

Fig. 1

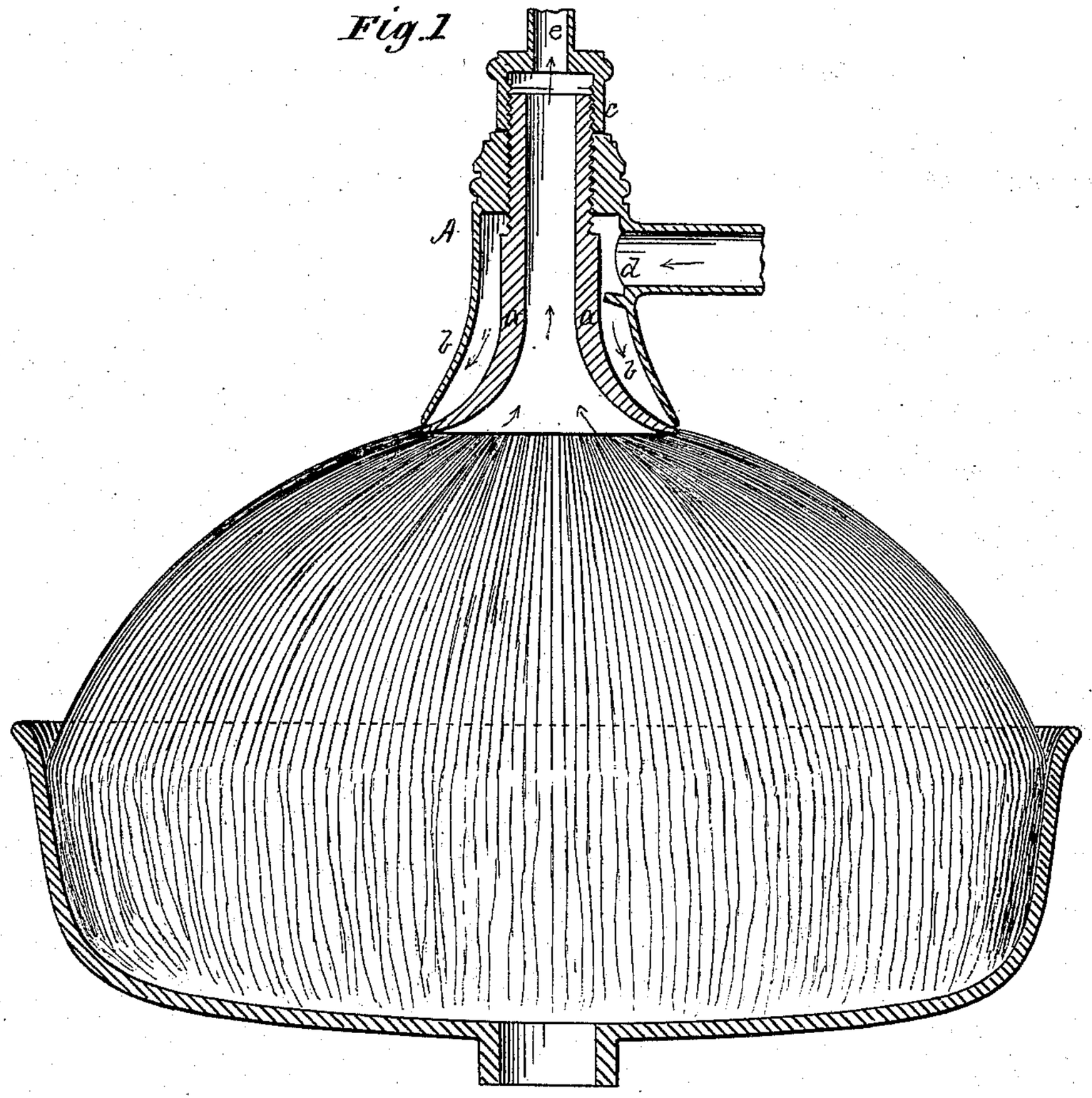
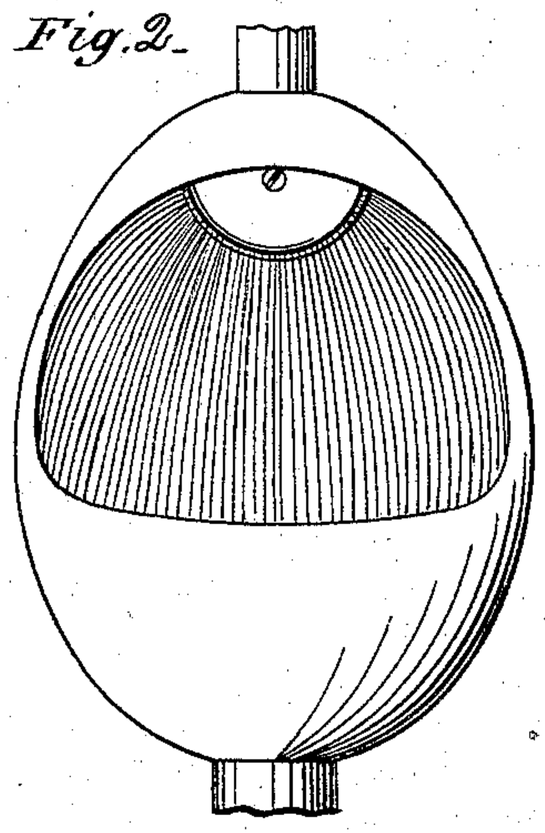


Fig. 2.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN URINALS.

Specification forming part of Letters Patent No. **156,980**, dated November 17, 1874; application filed November 14, 1874.

To all whom it may concern:

Be it known that I, HENRY H. BURTON, of the city of Washington, in the District of Columbia, have invented a certain new and useful Improvement in Urinals; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and accurate description of my said invention.

Water has long been used in great variety of methods as a sealing medium in stench-traps and other analogous devices; but in all instances known to me the water has been heretofore employed in bulk, occupying an intermediate chamber between the induction-chamber and the conduit. These chambers have been variously constructed, and are illustrated in the "goose-necks," "swinging pans," and diaphragm-chambers long in use and well known.

My invention consists in the novel combination, with a urinal, of a jet-pipe, which throws an unbroken film of water, and is arranged with relation to the induction-aperture of the urinal in such a manner that the said aperture will be effectually sealed by said film of water.

Referring to the drawings, Figure 1 represents a flat basin urinal with the film-discharging jet-pipe located diametrically above the center of the basin. Fig. 2 represents a wall-urinal with the jet-pipe located at the upper side of the opening.

Various other well-known styles of urinal-basins could be shown; but the best method of attaching the jet-pipe to any other style or form of basin will be readily suggested by these illustrations of the best method known to me of sealing two of the commonest forms of basins.

The jet-pipe A is of novel construction, and produces an outline of film never before attained to my knowledge. It will, *per se*, constitute no portion of the invention claimed herein; but under the name of a "fountain jet-pipe" is made the subject of separate and distinct application for Letters Patent. For the purposes hereof it is, however, necessary to state that in operation it discharges the water downward and radially in a thin unbroken film, which, when free to do so, assumes and maintains the form of a hollow globe, and the water leaves the globular film in a more or less solid column, extending downward from the bottom or lower side of the globe. I will further describe the inner bell-plate *a* as being so placed within the flaring bell-mouthed pipe *b* as to afford an annular discharge-aperture at the base of the jet-pipe. The interior bell-plate *a* has a hollow neck, which is provided with an exterior screw, which engages with an interior thread of the neck of the bell-mouthed pipe. By turning the bell-plate on this thread it can be raised or lowered, and by that means the thickness of the film discharged can be increased or lessened as occasion may require. A set-screw, at *c*, effects a secure adjustment of the bell-plate.

It will be seen that there is between the bell-plate and the bell-mouthed pipe an annular vertical space, with which the induction water-pipe connects, as at *d;* also, that an open space is afforded by the hollow neck of the bell-plate, which serves as a vent for communication with the stench-conducting pipe *e*, whereby such offensive vapors as are liable to be generated within the urinal may be conducted out of offensive range.

It is to be understood that the jet-pipe constructed as described possesses no novel features claimed by me in this connection, except that the central vent within the bell-plate affords a practicable means for connecting such a flat open basin as is shown in Fig. 1 with a stench-conducting pipe. This hollow neck, affording as it does a stench-passage, constitutes, in combination with an annular discharge jet-pipe and a urinal, one of the mechanical features of my invention. This hollow neck has a marked value in this connection, affording, as it does, a means for conducting vapors from a basin, which, although having an aperture in a horizontal plane, is yet practically and effectually sealed against the exhalation of noxious vapors without in any manner affecting its free receptive capacity.

It is well known that the button jet-pipe, heretofore employed for many years on ornamental fountains, will produce a thin unbroken film extending in all directions from the jet-pipe, and that such a film will as effectually water-seal the aperture of a basin as the film thrown by the novel jet-pipe herein shown; and, therefore, while in a horizontal basin I

prefer to employ my own jet-pipe, I would as willingly employ the ordinary well-known button jet-pipe referred to in connection with the wall urinal-basin shown in Fig. 2. In this latter style of urinals the stench-conducting pipes are usually located within the upper wall of the basin, and, therefore, it is not requisite that the jet-pipe be provided with a hollow neck for connection with a stench-pipe. In both cases the water will extend in an unbroken film from the jet-pipe to the inner walls of the basin.

In the wall-basin shown in Fig. 2 the jet-pipe need not be arranged to discharge the water in all directions, but only toward the side walls and downward, so as to completely guard and seal the aperture. Above the jet-pipe an upper close mechanical connection may be formed with the upper adjacent portion of the basin. In such case the jet-pipe might be fan-shaped, substantially as shown.

With an apparatus of this character a somewhat less quantity of water is requisite than is now generally used for cleansing purposes alone, and it will be obvious that by the thoroughly universal application of the water film to the inner surfaces of the basin, as herein described, there can be no unwashed surfaces on which the sedimentary deposits or salts of urine can accumulate. Aside, therefore, from the water-sealing feature of my invention, it is maintained that the employment of the film-throwing jet-pipe in the manner herein described results in a more complete throwing of water over the inner surfaces of the basins than has heretofore been attained by any jet-pipes as heretofore applied.

As extraneous matter in the water is liable to temporarily clog the discharge-apertures of the jet-pipe, it is advisable to have either the inner or outer member thereof capable of adjustment, substantially as shown, whereby the aperture may be readily widened, so as to get rid of solid matter temporarily retained therein. In practice strainers should be employed in the pipes, through which the water is conducted to the jet-pipe.

I am well aware that jet-pipes arranged to throw numerous fine jets of water have been introduced through spiral-surfaced jet-pipes, whereby a rotating washing-current was attained; also, that pipes with flattened ends have been so arranged as to throw a thin film of water against the opposite walls of the urinal. In such cases, however, the film of water discharged has never to my knowledge been of a form which enabled it to wholly seal the opening of the basin; and I am not aware that prior to my invention a solid unbroken film of water has ever been so distributed in connection with a urinal, that the induction-aperture was practically sealed by said film; and

I therefore claim as new and of my own invention—

1. The combination, with a urinal, of a jet-pipe which throws an unbroken film of water, and is arranged with relation to the induction-aperture of the urinal, substantially as described, whereby the said aperture is sealed by said film, as specified.

2. The combination, with a urinal-basin, of a jet-pipe having an annular discharge-aperture and an interior stench-conducting passage, substantially as described.

HENRY H. BURTON.

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