

UNITED STATES PATENT OFFICE.

JOHN G. WHITE, OF CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN EARTH-URINALS.

Specification forming part of Letters Patent No. 104,089, dated June 7, 1870.

To all whom it may concern:

Be it known that I, JOHN G. WHITE, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented a Dry-Earth Urinal; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention relates to the construction of a dry-earth urinal adapted for use in sleeping-rooms, public offices, and other apartments, and preferably made as a representation of a wardrobe, book-case, or other upright piece of furniture.

The invention consists, primarily, in a urinal having its opening in the side or through the side wall of a case, and having combined with it a source of supply of dry earth or other absorbent from a reservoir, and provision for discharge of the absorbent from the urinal-chamber into a receptacle beneath.

The invention also consists in combining, with a urinal-chamber and a suitable valvular arrangement for controlling the supply and discharge of the absorbent, a hopper or reservoir having a discharge-spout or conductor arranged directly over the urinal-chamber, and so that the absorbent falls directly from it to the bottom of the said chamber.

The invention also consists in the employment, in a dry-earth closet, of a system of flap-valves, each dropping to discharge the absorbent; also, in the peculiar relative arrangement and operation of the respective valves and in the method of working them; also, in the employment of a stirrer operated by the pull mechanism that actuates the valves.

The drawing represents a urinal embodying my invention.

A shows a front elevation of the mechanism, the doors of the case being thrown open. B is a sectional elevation. C is an end view; D, a plan.

a denotes the case that incloses the operative mechanism, said case being preferably made with upper and lower parts, having their respective doors *b* and *c*, to give the urinal an unobjectionable appearance, or to make it correspond in general appearance with other

articles of furniture in the apartment where is to be placed.

The lower part of the case is made wider than the upper portion, or so as to form a projection on one side, for location of the compartment or chamber *d*, which constitutes the urinal proper, the opening *e* to the same being arranged in the end of the case, as shown at B, C, and D, so as to be most conveniently accessible to the person using the urinal. The lower part of the urinal-chamber *d* extends below the opening *e* and discharges into the lower part, *a'*, of the case *a*, the discharge-opening *f* having a flap-door, *g*, hinged at one side of it, and dropping down, as seen at B.

Into the top of the urinal-chamber *d* extends a spout or conductor, *h*, leading from a hopper or reservoir, *i*, located in the upper part of the case *a*, this hopper or reservoir containing the supply of dry earth or other pulverulent absorbent, a charge from which is to be discharged into the urinal-chamber whenever the urinal is used.

In the spout or conductor *h*, between the hopper *i* and the urinal-chamber, are two flap-valves, *k l*, each dropping down to open the passage through the spout, and being raised and extending across the passage to close it, the two valves being operated alternately, so that as either one closes the other one opens.

The three drop-flap valves *g k l* are respectively attached, by links *m n o*, to the inner arms of bent levers *p q r*, whose outer arms are jointed to a slide-rod, *s*, said levers being fulcrumed, as seen at A and C.

The slide-rod is held in normal position, as seen at A, by a suitable weight, or by a spring, *t*, and in this normal position the levers *p q r* hold the three flap-valves in the position shown at A, the bottom valve, *g*, closed against the bottom of the urinal-chamber, the spout-valve *k* dropped to the side of the spout, opening the passage by it, and the hopper-valve *l* raised or closed across the spout.

The top of the slide-rod *s* is jointed to a lever, *u*, fulcrumed at *v*, and extends across to the end of the case over the urinal-chamber, its front end having jointed to it a pull, *w*, the knob of which is within easy reach of the hand. Supposing the hopper or reservoir to be charged with dry earth or other suitable ab-

sorbent, the apparatus is operated and operates as follows: After the discharge of the urine into the urinal-chamber *d* the user draws down the pull *w*, thereby drawing up the slide-rod *s*, which actuates all the bent levers and the flap-valves connected thereto. The urinal-valve *g* drops, as seen at B, entirely and instantly opening the bottom of the urinal-chamber, and letting fall therefrom the dry earth in the urinal-chamber, with the urine absorbed thereby. At the same time the spout-valve *k* is raised, and forms a partition across the spout between the hopper and the urinal-chamber, and prevents passage of dry earth into the urinal-chamber, and simultaneously with the movements of the two valves *g* *k* the hopper-valve *l* drops, and forms a free passage from the hopper into the spout, the space between the valve *k* and the bottom of the hopper forming a charge-containing chamber, which becomes filled with the absorbent when the valves are in these positions. The user of the urinal now releases the pull, when the valve-rod actuating mechanism automatically returns the valves to their normal positions, by which return the valve *g* is raised and closed against the bottom of the urinal-chamber, the valve *l* is raised and closes the bottom of the hopper, preventing further discharge of the absorbent from the hopper, and the valve *k* is dropped and lets a charge of the absorbent down into the urinal-chamber, leaving the apparatus ready for use again. By this means all of the urine is absorbed and escape of gases into the apartment is prevented, the apparatus being, in every respect, cleanly. From the urinal-chamber the charged dry earth drops into any suitable receptacle placed beneath in the lower portion of the case *a*, and the inodorous accumulations may remain in this receptacle until it becomes full, and may then be removed with the same freedom that would be used in the removal of so much dry ashes from a grate.

To prevent lodgment of the absorbent just above the discharge-opening at the bottom of the hopper or reservoir, I employ a stirrer, *x*, on the end of a rod fixed to the lever *u*, this

stirrer being driven forward each time the valve *l* falls, and agitating the absorbent, so that its fall into the spout is insured.

It will be observed that the hopper-spout or conductor is located directly over the urinal-chamber and its valve *g*, so that the dry earth falls by gravity to the bottom of the urinal-chamber, and does not have to be thrown laterally into the same.

It will also be observed that by the employment of the flap-valves all obstruction of the passages is prevented, and the perfect freedom of operation of all of the valves is insured—a result which is impossible of attainment if rotary valves, slide-valves, or valves rising upward to open the passages are employed.

I claim—

1. A dry-earth urinal opening through one of the vertical walls of a case, *a*, and having a source of supply of dry earth or other absorbent to the urinal-chamber, and provision for discharge of the absorbent from said chamber into a suitable receptacle beneath it.

2. Also, the combination, with a urinal-chamber, *d*, located between the hopper *i*, above it, and a receptacle, *a'*, beneath it, of a suitable valvular mechanism for controlling the supply and discharge of the absorbent.

3. Also, in combination with a dry-earth closet or urinal, a system of flap-valves, each dropping to discharge the absorbent, and being raised to close its passage, one or more being always closed.

4. Also, in combination with the urinal-chamber and the hopper and conductor, the valves *g*, *k*, and *l*, arranged as shown, and operated by a mechanism which closes valve *k* when valves *g* and *l* are opened, and automatically closes valves *g* and *l* when valve *k* is opened.

5. Also, in combination with the hopper and its conductor, a stirrer or agitator, *x*, operated by the pull mechanism, substantially as described.

JOHN G. WHITE.

Witnesses:

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