



# UNITED STATES PATENT OFFICE.

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## DISINFECTING DEVICE.

985,350.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, JAMES KNEEN, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Disinfecting Devices, of which the following is a specification.

This invention relates to disinfecting devices especially adapted for use in connection with urinals, and the principal object of the same is to provide means whereby the drip of the disinfecting material may be regulated to insure a constant and uniform feed, and also means whereby disinfecting fumes may be discharged from the device.

In carrying out the objects of the invention generally stated above, it will be understood, of course, that the essential features thereof, are necessarily susceptible of changes in details and structural arrangements, one preferred and practical embodiment of which is shown in the accompanying drawings, wherein:—

Figure 1 is a view in elevation, partly in section, of the improved disinfecting device. Fig. 2 is a horizontal sectional view taken on the line X—X, Fig. 1. Fig. 3 is a similar view taken on the line Y—Y, Fig. 1. Fig. 4 is a top plan view of the discharge chamber. Fig. 5 is a plan view of a valve stem cap forming a part of the invention. Fig. 6 is a vertical sectional view of a cup-shaped washer also forming a part of the invention.

Referring to said drawings by numerals, 1 designates a receptacle adapted to contain suitable disinfecting liquid, said receptacle being provided with a fastening lug 2 adjacent its upper end which engages a bayonet slot 3 of a cover 5, to removably hold said cover in sealing engagement with said receptacle. The bottom of receptacle 1 is provided with a central opening 6 through which the upper end of a valve chamber 7 projects, said upper end having an out-turned annular flange 8 that engages over the edge of said opening. The inner edge of said flange provides a valve seat 9. The lower end of valve chamber 7 is externally threaded, and intermediate its ends, said chamber is provided with a horizontal guiding diaphragm 10 having a central opening 11 formed through it, said central opening being surrounded by smaller openings 12.

A valve stem 13 is slidably mounted in

chamber 7 and is guided in its movements by the diaphragm 10, the upper end of said stem projecting into receptacle 1 and provided with a valve 14. Said stem is also provided with a flat and preferably triangular flange 15 the three corners of which contact with the inner surface of chamber 7 to center the stem therein, and at the same time permit liquid to flow past said flange. The lower end of stem 13 is threaded and has a perforated cap 16 and a perforated washer 17 mounted thereon, the perforations of said cap and washer being in alinement. A spring 18 is coiled about the lower end of stem 13, one end of said spring bearing against cap 16 and the other end bearing upon the undersurface of diaphragm 10. Said spring exerts a tension tending to move stem 13 longitudinal of chamber 7 to seat valve 14.

A tubular discharge chamber 19 has an internally threaded end adapted to be engaged with the externally threaded lower end of valve chamber 7. A bottom 20 is provided for chamber 19, said bottom having a central opening 21 formed through it. A tapering spout 22 depends from bottom 20. Sponge or other absorbent material 23 rests on bottom 20, and a cup-shaped washer 24 is interposed between said material and stem washer 17. Said cup-shaped washer is provided with a central opening 25.

Receptacle 1 adjacent its lower end is provided with an external flange 26 which acts as a stop for the end of a casing 27 that is fitted over the lower end of said receptacle. Said casing 27 incloses valve chamber 7 and terminates in a pendent discharge outlet 28 that is in alinement with the spout 22 of chamber 19. At its upper portion, casing 27 is provided with an annular row of openings 29, and on its inner surface at a point below said openings, said casing is provided with an annular shelf on which disinfecting balls 31 of camphor or any other desired material are arranged so that their fumes will escape through openings 29.

In use, receptacle 1 is suspended over a urinal and filled with disinfecting liquid. Discharge chamber 19 is adjusted on valve chamber 7 so that washer 24 will be caused to lift valve stem 13 against the tension of spring 18 thereby unseating valve 14 and permitting the liquid to flow through valve chamber 7 to the absorbent material. Spring

18 obviously exerts a downward pressure on stem cap 16 and washer 17, so that cup-shaped washer 24 compresses the absorbent material so that the disinfecting liquid is automatically expressed therefrom so that it will drip through spout 22 of chamber 19 and outlet 28 of casing 27. As will be understood, the pressure exerted by spring 18 to express the liquid from the absorbent material 23 may be regulated by adjusting chamber 19 on valve chamber 7 and to facilitate such adjustment, chamber 19 has a nut shaped flange 7<sup>a</sup> at its upper end so that it may be grasped by a turning tool.

It will also be readily understood that the various parts of the invention may be separated, which permits a thorough cleaning to be made, and also facilitates repair and the like.

What I claim as my invention is:—

1. A disinfecting device comprising a receptacle, a valve chamber depending from the bottom thereof, a valve stem slidable in said chamber, a valve carried thereon for closing the inlet end of said chamber, a discharge chamber adjustably connected to said valve chamber, a cap for the said stem, a spring coiled about said stem and exerting a pressure on said cap to slide said stem, and means in said discharge chamber and actuated by the pressure of said spring for regulating the flow of disinfecting liquid from said discharge chamber.

2. A disinfecting device comprising a receptacle, a valve chamber depending therefrom, a valve stem slidable in said chamber, a valve at one end of said stem, a perforated cap at the other end of said stem, a perforated washer carried by said cap, a spring coiled about said stem and exerting a pressure on said cap to seat the valve, a discharge chamber adjustably secured to the valve chamber, absorbent material in said discharge chamber, and a washer seated on said material and actuated by the pressure of said spring to cause said absorbent material to deliver liquid at a regulated rate from said discharge chamber.

3. A disinfecting device comprising a receptacle, a valve chamber depending therefrom, a discharge chamber adjustably connected to said valve chamber, absorbent material in said discharge chamber, and means slidable in said valve chamber for exerting a compression on said material.

4. A disinfecting device comprising a receptacle provided with a discharge outlet, a valve chamber depending from said outlet, a valve controlling said outlet and having a stem projecting through said chamber, a discharge chamber depending from the valve chamber, absorbent material in said discharge chamber, means actuated by said valve stem for compressing the absorbent material, and a casing depending from the receptacle and inclosing the valve and discharge chambers.

5. A disinfecting device comprising a receptacle, a valve chamber depending therefrom, a valve having a stem slidably mounted in said chamber, perforated washers mounted upon the lower end of said valve stem, a discharge chamber adjustably secured to said valve chamber, absorbent material in said discharge chamber, and a cup shaped washer seated upon said absorbent material and the flange of said cup shaped washers contacting with said perforated washers.

6. A disinfecting device comprising a receptacle, a valve chamber depending therefrom, a valve having a stem slidably mounted in said chamber, a discharge chamber adjustably secured to said valve chamber, the bottom of said chamber being provided with a central opening, and a tapering spout formed at the bottom of said chamber and in alinement with said central opening and absorbent material within said discharge chamber.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES KNEEN.

Witnesses:

H. C. SCHROEDER,  
E. G. GRAY.