(No Model.)

O. F. HAGER.

WATER CLOSET DISINFECTOR.

No. 548,870. Patented Oct. 29, 1895.

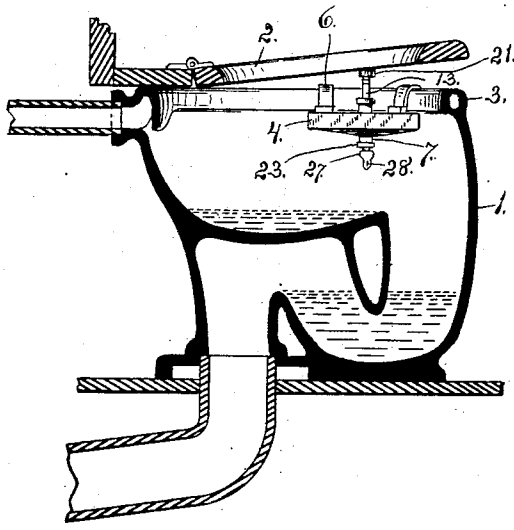

Fig. 1.

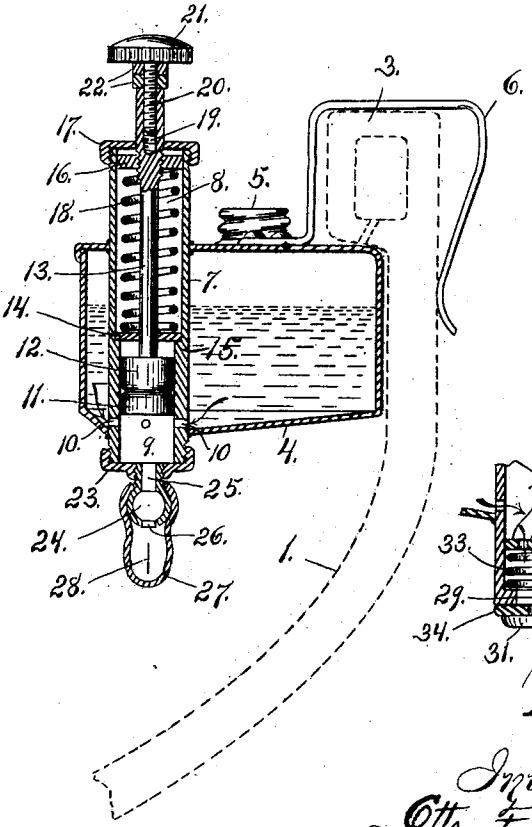

Fig. 2.

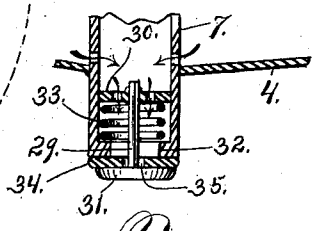

Fig. 3.

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OTTO F. HAGER, OF BUFFALO, NEW YORK.

WATER-CLOSET DISINFECTOR.

SPECIFICATION forming part of Letters Patent No. 548,870, dated October 29, 1895.

Application filed July 24, 1895. Serial No. 557,008. (No model.)

To all whom it may concern:

Be it known that I, OTTO F. HAGER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Water-Closet Disinfectors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in water-closet disinfectors, its object being to provide an apparatus for the purpose stated which can be removably attached to the bowl of the water-closet and operated by the hinged seat.

To that end my invention consists of a reservoir for holding the disinfecting-liquid, provided with means for removably attaching it to the rim of the bowl, a cylinder rigidly secured to the reservoir and passing vertically through the same, the interiors of the cylinder and reservoir communicating with each other, and means within the cylinder and operated by the water-closet seat for ejecting a measured quantity of the disinfecting-liquid into the bowl.

My invention further consists of other details of construction, all of which will be fully hereinafter described and claimed.

In the drawings, Figure 1 is a central vertical section of a water-closet bowl and seat with my improved apparatus attached. Fig. 2 is an enlarged central vertical section of the apparatus, and Fig. 3 is a sectional detail of a modified form of exit-opening of the cylinder.

Referring to the drawings, 1 is the water-closet bowl, and 2 is the hinged seat.

My improved disinfecting apparatus, which is designed to be removably secured to the rim 3 of the bowl 1 of the form shown, (or to any other of the various forms now in use,) is constructed as follows:

4 is a metallic reservoir, preferably of elongated configuration, the vertical wall resting against the inner surface of the bowl being curved to conform to the curved surface of the bowl and the opposite vertical wall being straight. A reservoir of this configuration will not extend too far within the bowl, while its length will give it sufficient capacity for holding a considerable quantity of the disinfecting-liquid, which is admitted through an opening in its top wall closed by the screw-threaded stopper 5. Two spring clips or hooks 6 6 are secured to its top wall at each end, and with these the reservoir is removably secured to the rim 3 of the bowl 1. While I have shown this form of fastening as being of a simple type and of easy adjustment, I do not wish to confine myself thereto, as other equivalent forms could be equally well employed. 7 is a cylinder rigidly secured to the reservoir 4 and passing vertically through the same. The interior of this cylinder consists of the upper spring-chamber 8 and the lower piston-chamber 9, of slightly-smaller diameter than the chamber 8. A series of orifices 10 in the piston-chamber 9 of the cylinder 7 afford communication from the reservoir 4 to the piston-chamber. The piston is composed of the lower portion 11 and upper portion 12, both rigidly secured to the lower end of the piston-rod 13. The upper portion or sucker 12 operates to draw the liquid into the cylinder as the piston-rod ascends and the lower portion or sucker 11 operates in the opposite direction or downwardly to force the liquid out into the bowl. Naturally the liquid enters the piston-chamber by gravity; but if a second supply of liquid is quickly used the upper sucker causes a quick filling of the piston-chamber for that purpose. Above the piston and loosely surrounding the rod 13 is the metal disk 14, which rests upon the shoulder 15 on the inner surface of the cylinder. 16 is another metal disk in screw-threaded engagement with the piston-rod just under the screw-threaded cap or cover 17. Between these two disks 14 and 16 and surrounding the piston-rod is interposed the spiral spring 18. A screw-threaded socket 19 in the upper end of the piston-rod is adapted for the adjustable reception of the screw-threaded pin 20, having rigidly secured to its upper end the milled head 21. Leather or rubber washers 22 are employed to hold the head 21 rigidly in position when it is adjusted above the upper end of the piston-rod, as shown. The

lower end of the cylinder 7 is provided with the removable screw-threaded cap 23. A hollow knob 24, provided with the hollow shank 25, is in screw-threaded engagement with the cap 23. The knob 24 has an aperture 26 upon its lower side. An elongated rubber bulb 27, provided with one or more slits 28, is sprung over the knob 24, and the apparatus, assembled as just described, is ready for operation. As the seat 2 descends to its position upon the bowl, it presses down with it the head 21 and attached rod 13 and piston 11 12. This has the effect of forcing a portion of the disinfecting liquid which has passed down into the bulb 27 out through the slits 28 and into the bowl 1. When the pressure on the seat is removed, the piston and its rod are forced up by the spring 18, and in their ascent more of the liquid is sucked into the cylinder through the orifices 10, ready for the next ejection. The slit or slits 28 close as soon as the downward pressure of the piston ceases and hold the liquid in the lower end of the cylinder and the bulb until the next downstroke of the piston.

In place of the slitted rubber bulb 27 the modified construction shown in Fig. 3 may be employed, of which 29 is a stem carrying rigidly upon its upper end the perforated metal disk 30 and upon its lower end the plain flat-metal disk 31. Interposed between the upper disk 30 and the interior annular shoulder 32 is the spiral spring 33, and interposed between the lower disk 31 and the lower end of the cylinder 7 is the leather or rubber disk 34, provided with a central aperture 35 for the passage of the stem 29. In operation as the piston descends it strikes and carries down with it the stem 29 and its two attached disks, which serves to open the lower end of the cylinder 7 and release a portion of the disinfecting liquid, which has passed down through the apertured disk 30 into the lower end of the cylinder. When the piston ascends, the spiral spring 33 forces the parts in closed engagement with the lower end of the cylinder and confines the liquid until again released as before.

It will be seen that my improved disinfecting apparatus is adapted for attachment to and operation with any form of closet-bowl provided with a hinged seat. It can be quickly adjusted in position and as quickly removed. It is simply and inexpensively constructed and is at all times perfectly reliable in its action.

I claim—

1. A disinfecting apparatus for water-closets consisting of a reservoir for holding the disinfecting liquid provided with means for removably attaching it to the rim of the bowl, a cylinder rigidly secured to the reservoir and passing vertically through the same the interiors of the cylinder and reservoir communicating with each other and means within the cylinder, and operated by the water-closet seat for ejecting a measured quantity of the disinfecting liquid into the bowl.

2. A disinfecting apparatus for water-closets, consisting of a reservoir for holding the disinfecting liquid provided with means for removably attaching it to the rim of the bowl, a cylinder rigidly secured to the reservoir and passing vertically through the same, the interiors of the cylinder and reservoir communicating with each other and a spring-pressed piston and rod within the cylinder adapted to be forced down by the water-closet seat to eject a measured quantity of the disinfecting liquid into the bowl.

3. A disinfecting apparatus for water-closets, consisting of a reservoir for holding the disinfecting liquid provided with means for removably attaching it to the rim of the bowl, a cylinder rigidly secured to the reservoir and extending vertically through the same, the interiors of the cylinder and reservoir communicating with each other and means within the cylinder and operated by the water-closet seat for ejecting a measured quantity of the disinfecting liquid into the bowl the lower end of the cylinder being provided with a self-closing outlet passage which opens under pressure.

4. A disinfecting apparatus for water-closets, consisting of a reservoir for holding the disinfecting liquid provided with means for removably attaching it to the rim of the bowl, a cylinder rigidly secured to the reservoir and passing vertically through the same, the interiors of the cylinder and reservoir communicating with each other and a spring pressed double reversely acting piston and rod within the cylinder adapted to be forced down by the water-closet seat to eject a measured quantity of the disinfecting liquid into the bowl the lower end of the cylinder being provided with a self-closing outlet passage which opens under pressure.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OTTO F. HAGER.

Witnesses:
H. C. DIEHL,
W. T. MILLER.