E. R. WILLIAMS.

DISINFECTING OR DEODORIZING DEVICE.

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1,349,703. **Patented Aug. 17, 1920.**

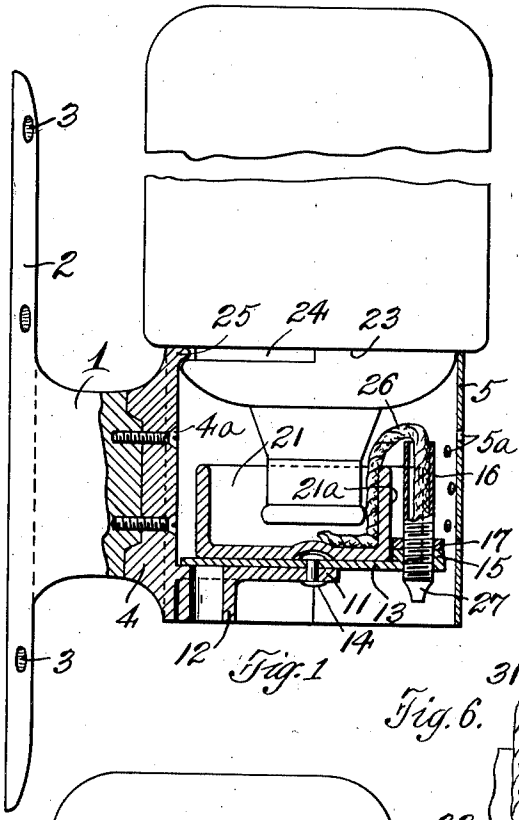

Fig. 1

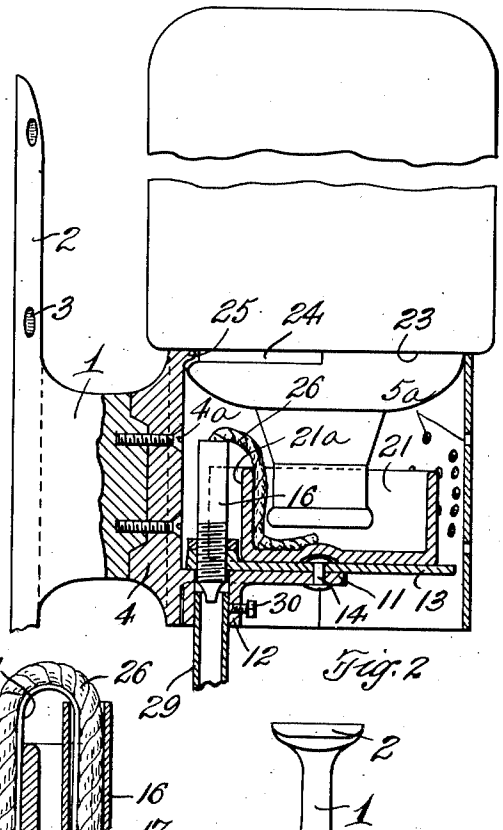

Fig. 2

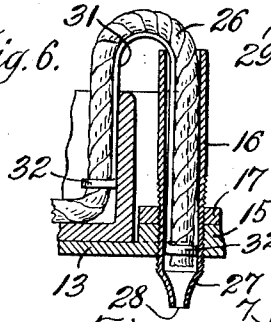

Fig. 6.

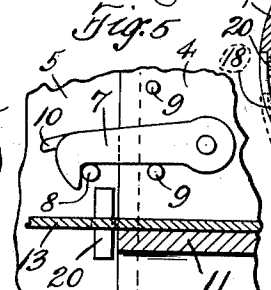

Fig. 5

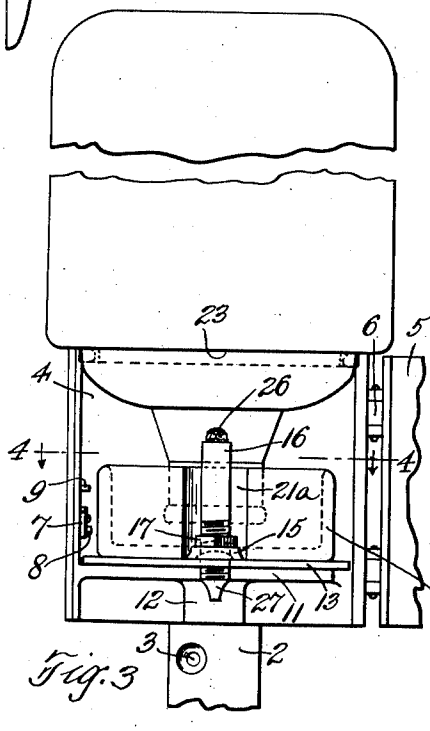

Fig. 3

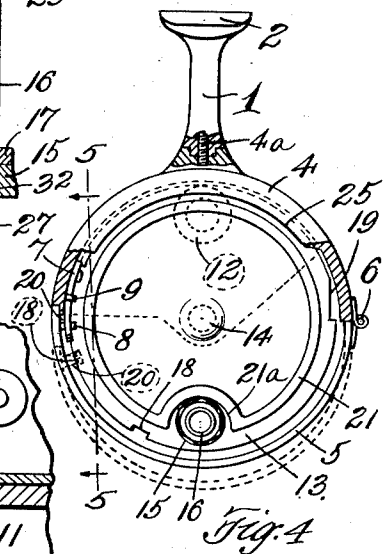

Fig. 4

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UNITED STATES PATENT OFFICE.

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DISINFECTING OR DEODORIZING DEVICE.

1,349,703. Specification of Letters Patent. Patented Aug. 17, 1920.

Application filed September 7, 1917. Serial No. 190,164.

To all whom it may concern:

Be it known that I, EDWARD R. WILLIAMS, citizen of the United States, residing at Sharpsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Disinfecting or Deodorizing Devices, of which the following is a specification.

This invention relates to disinfectors and deodorizers, and more particularly to those employing a liquid disinfectant or deodorant.

The object of the invention is to provide a simple and inexpensive device of this kind which can be readily applied to a supporting surface; which gives a visible indication of the quantity of material in the device; which provides firm support for the receptacle for holding the material and also locks said receptacle in place to prevent its unauthorized removal; which enables the disinfectant or deodorant material to be readily replenished when exhausted; which is capable of being arranged to discharge the material at several different positions so that the device can deliver said material by drip directly to a urinal or closet or to a pipe for conducting it thereto; which embodies means for readily adjusting the rate of flow or discharge of the disinfectant or deodorant liquid; and which can be readily manipulated by one familiar with the device either for the purpose of repair or to replenish the liquid, but nevertheless, is so arranged as to offer material obstacles to a stranger attempting to tamper with the device or remove its parts.

A further object of the invention is to generally simplify or improve the construction of the device so as to enable it to be made cheaply, and whereby it provides firm support for the parts and is strong, durable and not likely to get out of order in service.

Further objects of the invention are in part obvious and in part will appear more in detail hereinafter.

The invention comprises the disinfecting or deodorizing device hereinafter described and claimed.

In the drawings Figure 1 is a sectional elevation through the device, illustrating the same arranged for discharging the material by direct drip; Fig. 2 is a similar view, illustrating the device connected to a conduit for conducting the material to the place of use; Fig. 3 is a front view showing the casing opened; Fig. 4 is in part a plan view and in part a cross section on the line 4—4, Fig. 3, the receptacle being omitted; and Fig. 5 is a detail sectional elevation on the line 5—5, Fig. 4, showing the locking device.

The device shown in the drawings comprises a base or body suitably designed for connection to a support and to also carry the different parts of the device. As illustrated said base or body comprises a bar or strap 2 provided with holes 3 through which suitable attaching means, such as screws, may be passed into the wall or other support and which body is connected by an arm 1 to a casing of hollow cylindrical form. As illustrated the supporting member 4 of said casing is rigidly connected to the base or body, either by being integral therewith or by being a separate piece attached thereto by screws 4^a. The front door or closing member 5 of the casing may be provided with a series of small apertures 5^a to promote evaporation of the liquid material from the cup hereafter referred to, and is connected to the supporting member 4 in any suitable manner to permit the casing to be opened, such as by being hinged at one side to the rear member 4 as at 6, its other side being provided with suitable means for connecting or locking it to the rear casing member when in closed relation therewith, as in Fig. 4. The locking means may be of any suitable construction but is shown as a pivoted latching member 7 carried by one of the casing parts, such as the rear member 4 and having a hook end designed to engage with a pin or projection 8 in the other closing member. When the casing member is moved nearly to closed engagement with the supporting member the pin 8 engages and lifts the hook end of the latch, which drops into locking position simultaneously with the closing engagement of the casing members. Swinging movement of the latch is limited in both directions by the pins 9. The latch is further provided on its free end with a tongue or projection 10 enabling it to be lifted for releasing or opening the casing, as will appear.

One of the casing members such as the rear member serves as a support for the working parts of the device. As shown this member is provided near its bottom with a ledge or shelf 11 having a downwardly extending perforated boss 12 at the rear side of the casing for a purpose which will ap-

pear. This ledge or shelf supports a horizontally disposed rotatable plate or table 13, the pivoted connection of said table or plate to the shelf being indicated at 14. At one side of said table or plate is located a threaded opening, preferably in a boss 15, to receive an upwardly extending tube 16 which can be adjusted to any desired vertical position in said threaded opening and locked in said adjusted position by a lock nut 17. Table 13 is provided with one or more small notches 18 and with a longer notch 19, which notches coöperate with a lug or projection 20 upon the front casing member as will more fully appear.

The table or plate 13 supports a cup 21, which preferably is of non-corrosive material, such as glass or the like, and which may be a plain round shallow cup, but is shown as notched or recessed on one side, as at 21a, so as to partially surround the tube 16, thereby enabling a larger cup to be used. This cup rests loosely upon the plate or table and is not attached thereto.

Above the cup and carried by the casing is the receptacle for holding the disinfecting or deodorizing material. This receptacle is in the form of a bottle preferably of transparent material such as glass, supported in inverted position with its mouth or outlet open below the upper level of the rim of the cup 21. This arrangement forms a liquid seal at the level of the bottom mouth and maintains a small quantity of the liquid in the cup so long as any liquid remains in the bottle. The bottle may be of any suitable shape or design and is provided with a shoulder 23 resting on the upper edge of the two casing members and also with an annular groove 24 to receive an inwardly extending rib 25 on the casing. This rib might be formed on both casing members and extend entirely around the periphery of the bottle, but I prefer to arrange the parts in any suitable manner to also prevent rotation of the receptacle in its support. This may be accomplished by a lug on the bottle entering a small recess in the casing or as shown, by forming the rib on only one of the casing members, such as the rear member, with the groove 24 extending only half way around the bottle. This arrangement supports the bottle in the casing before closing the casing, and prevents any vertical or rotative movement of the bottle in the casing after closing it. The bottle therefore can not be removed by one without instruction and can not be turned to conceal advertising matter placed upon its front exposed face.

The liquid to be discharged from the device partly evaporates through the holes 5a, but mainly is conducted to the outside of the casing by a suitable wick 26 a portion of which lies in the liquid contained in the cup 21, and which wick passes over the wall or rim of said cup to the top of the tube 16 and thence downwardly through said tube. The wick may pass clear through the tube but preferably stops short of the lower end of the tube, which is preferably formed as a nozzle 27 having a restricted port or outlet 28.

The device may be used in either of two ways. In Fig. 1 the discharge tube 16 is at the front of the device and is consequently spaced some distance away from the wall or support to which the device is attached. Therefore the liquid discharged from the nozzle 27 will drop or drip directly into a urinal or other device near the wall. To arrange the parts for operation in this manner the casing is opened, the bottle or receptacle is filled with disinfectant or deodorizing liquid and the cup is applied to its seat on the table. The table is rotated to a position in which the wick tube 16 is near the hinge side of the casing where it will not interfere with placing the receptacle in position. The bottle is then inverted and by a quick movement is placed in position with the rib 25 of the stationary casing member entering the groove 24 of the bottle. In this position liquid will flow from the bottle to the cup until the liquid seal is established. The table is then rotated reversely until the desired one of the small notches 18 is slightly in front of the end of the latch 7 and the front member of the casing is then turned back to locking engagement with the rear casing member, during which movement the projection 20 enters the notch 18 and turns the plate or table to its final position until the latch 7 engages with its locking pin 8. In this position the casing is locked closed and by the engagement of the projection 20 with the notch 18 locks the table against rotation, thus holding the wick tube in the desired position to cause the drip to fall into the desired place and at the same time prevents tampering with the device. The bottle is also firmly secured against movement or unauthorized removal. To open the device a suitable small implement, such as a tooth pick or a small nail, is inserted upwardly from beneath the device through the space between the edge of the table and the inner wall of the front member of the casing and by pushing up on the projection 10 the latch is lifted and allows the casing to be opened. This can be readily accomplished by one familiar with the device. but is not so likely to be successfully done by a stranger, there being no outside evidence as to the location of the lock or latch.

In some cases when the device cannot be suitably supported so as to discharge the material by dripping directly to the place to be disinfected or deodorized, said material must be conducted thereto through a

small pipe or conduit. Under these circumstances the tube 16 is unscrewed from the plate so as to permit the plate to be rotated to a position in which the threaded aperture therein is above the boss 12, whereupon the tube is restored to its position in the plate and, because it projects beneath the plate, it prevents rotation thereof on the shelf. One end of a small conduit 29, such as a copper tube, is pushed up into the boss 12 and secured therein by a screw 30, said conduit leading to the place to be disinfected. The cup and bottle are then applied to the device in the same manner as before and the casing closed and locked, the projection 20 entering the long notch 19, and the table remains stationary as the tube is at the rear. With this arrangement the material flows from the bottle to the cup and is delivered by the wick to the nozzle 27 from which it enters into the conduit 29 and is conveyed to the place to be disinfected. The rate of flow of material can be varied by vertical adjustment of the tube 16 on the plate or table 13. If said tube is elevated the length or height of wick above the liquid in the cup is increased, which causes the liquid to travel farther. Hence it takes a longer time to discharge a given quantity by capillary attraction. If the tube is adjusted downwardly the length of exposed wick is decreased and the flow of material is increased. Hence a greater quantity will be dispensed in a given time.

The construction described provides a simple device for distributing liquid disinfecting or deodorizing material to the place of use. It enables the material to be easily replenished, prevents unauthorized removal of any parts of the device and is durable and not likely to get out of order.

The device can also be used as an evaporating device for disinfecting or deodorizing the atmosphere alone, by omitting the wick, in which case the operation of the device is exactly the same as hereinbefore explained, except that none of the liquid drips away, and consequently only the atmosphere is purified by means of the disinfectant or deodorant evaporating through the perforations in the front member of the casing.

The device may also be provided with the wick supporting attachment shown in detail in Fig. 6, although said attachment is not essential and may be omitted if desired. This attachment comprises a narrow metal member 31 having pairs of laterally extending arms 32 located at suitable convenient places along its length or at or near its ends as shown. In assembling the wick in the device the member is bent to U form, as shown in Fig. 6, and the arms 32 are bent to embrace or clasp the wick and enable it to be more readily introduced into the tube and cup and always hold the wick uniformly to maintain a regular flow. Furthermore the member 31 lies beneath the wick and prevents any overflow of disinfectant material outside of the cup and wick tube, as the liquid is guided by and flows along the metal member into either the cup or tube.

Obviously the member 31 is bent or altered in shape to conform to any vertical adjustment of the wick tube. For example; an adjustment of the wick tube to a low point might require the end portion of the strip to be bent parallel with the bottom of the cup. The strip might also have more pairs of arms than as shown in the drawings.

What I claim is:—

1. A disinfecting or deodorizing device, comprising a body adapted for connection to a support and carrying a casing, a cup within said casing, a receptacle for liquid supported directly by said casing and having a bottom outlet in said cup, a wick carrying member movably connected to the casing, and a wick therein for discharging liquid from said cup, said wick by movement of said member being adjustable to different positions circumferentially of said casing to discharge the liquid at different points.

2. A disinfecting or deodorizing device, comprising a body adapted for connection to a support and carrying a casing, a cup within said casing, a receptacle for liquid supported directly by said casing and having a bottom outlet in said cup, a wick carrying member movably connected to the casing, and a wick therein for discharging liquid from said cup, said wick by movement of said member being adjustable to different positions circumferentially of said casing to discharge the liquid at different points, said member being adjustable vertically to vary the rate of discharge of liquid by said wick.

3. A disinfecting or deodorizing device, comprising a body adapted for connection to a support and carrying a casing, a cup within said casing, a receptacle for liquid supported by said casing and having a bottom outlet in said cup and having its upper portion exposed above the casing, and means carried by said casing and engaging the lower portion of said receptacle for preventing its removal therefrom.

4. A disinfecting or deodorizing device, comprising a body adapted for connection to a support, a casing carried thereby and including two relatively movable coupled members, means for locking said members in coupled relation, a cup within said casing, and a receptacle for liquid supported by said casing with its upper portion exposed above the same.

5. A disinfecting or deodorizing device, comprising a body adapted for connection to a support, a casing carried thereby and

including two relatively movable coupled members, means for locking said members in coupled relation, a cup within said casing, a receptacle for liquid supported by said casing with its upper portion exposed above the same, and means carried by said casing and arranged when the casing is closed to prevent removal of the receptacle therefrom.

6. A disinfecting or deodorizing device, comprising a body adapted for connection to a support, a casing carried thereby and including two relatively movable coupled members, a cup within said casing, a receptacle for liquid supported by said casing, a wick carrying member movably connected to one of the members of said casing, and a wick carried thereby for discharging liquid from said cup, said wick carrying member being adjustable to different positions circumferentially of said casing to cause the wick to discharge the liquid at different points.

7. A disinfecting or deodorizing device, comprising a body adapted for connection to a support, a casing carried thereby and including two relatively movable coupled members, a cup within said casing, a receptacle for liquid supported by said casing, a wick carrying member movably connected to one of the members of said casing, a wick carried thereby for discharging liquid from said cup, said wick carrying member being adjustable to different positions circumferentially of said casing to cause the wick to discharge the liquid at different points, and means engaging the wick carrying member when the casing members are in coupled relation for preventing movement of said wick in the casing.

8. A disinfecting or deodorizing device, comprising a casing, a table rotatable therein and provided at one side with a wick, means for locking said table in any one of a plurality of positions to which it may be turned, and a liquid holding cup carried by said table.

9. A disinfecting or deodorizing device, comprising a casing, a table rotatable therein and provided at one side with a wick, means for locking said table in any one of a plurality of positions to which it may be turned, a liquid holding cup carried by said table, and a receptacle having a bottom outlet within said cup supported above said outlet by said casing.

10. A disinfecting or deodorizing device, comprising a body adapted for connection to a support, a casing carried thereby, a table rotatable therein, a wick tube at one side thereof, a cup on said table, and a receptacle for liquid supported by said casing.

11. A disinfecting or deodorizing device, comprising a body adapted for connection to a support, a casing carried thereby, a table rotatable in said casing, a wick tube at one side thereof, a cup on said table, and a receptacle for liquid supported by said casing, said wick tube being vertically adjustable relatively to said table.

12. A disinfecting or deodorizing device, comprising a body adapted for connection to a support, a casing carried thereby, a table in said casing and at one side provided with a wick, a cup on said table, and a receptacle for liquid supported by said casing, said table being rotatable in said casing and said receptacle being non-rotatable therein.

13. A disinfecting or deodorizing device, comprising a body adapted for connection to a support, a casing carried thereby, a table in said casing and at one side provided with a tube carrying a wick, a cup within said casing independent of said table and into which said wick also extends, and a receptacle supported by said casing above and independently of said cup and having an open bottom entering said cup.

In testimony whereof I affix my signature.

EDWARD R. WILLIAMS.