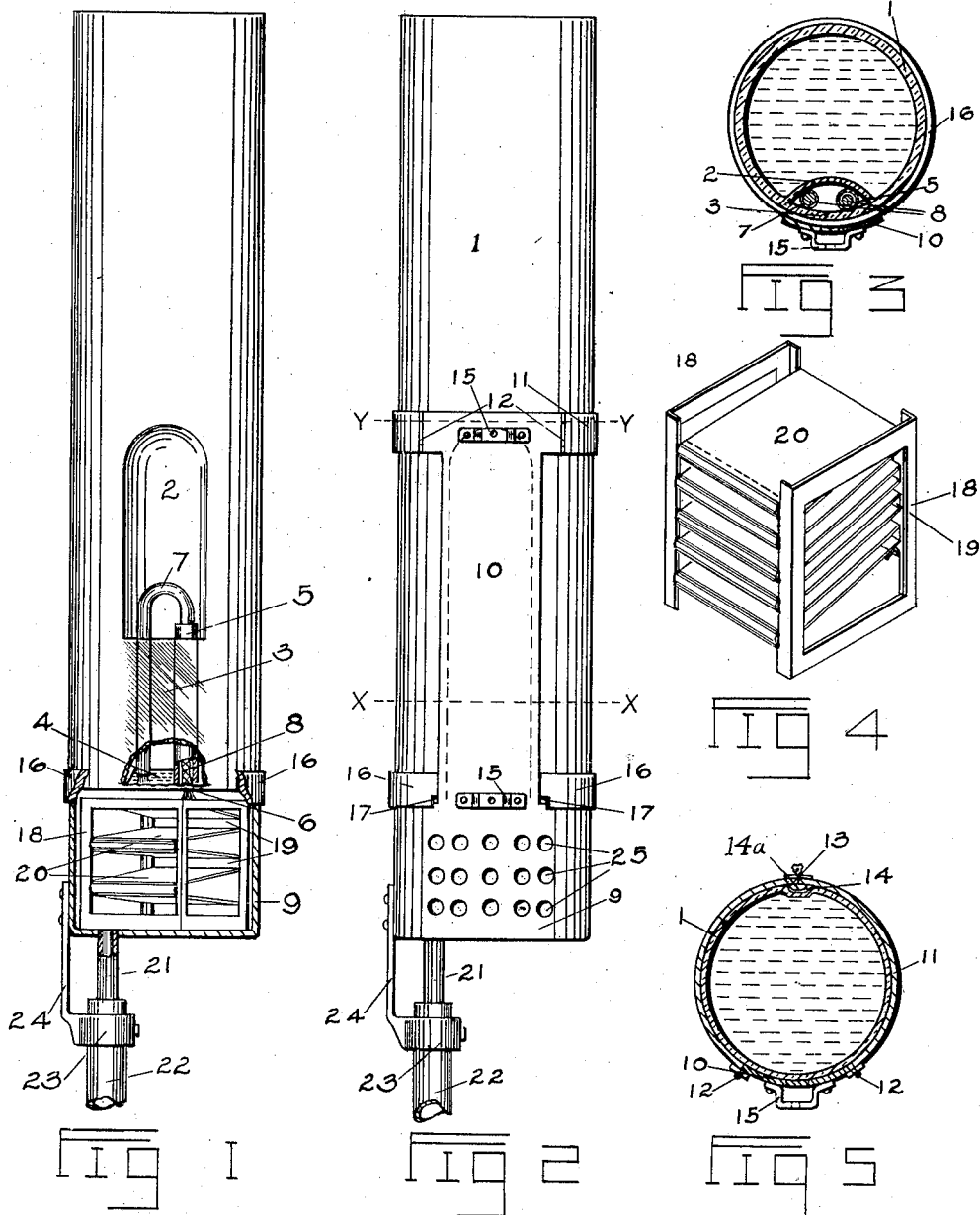


O. M. HITCHCOCK.
DISINFECTING DEVICE.
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1,063,684.

Patented June 3, 1913.



WITNESSES:

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OLGA M. HITCHCOCK, OF DALLAS, TEXAS.

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Specification of Letters Patent.

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Application filed October 6, 1911. Serial No. 653,284.

To all whom it may concern:

Be it known that I, OLGA M. HITCHCOCK, citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Disinfecting Devices, of which the following is a specification.

My invention relates to new and useful improvements in disinfecting devices. Its object is to provide a simple and inexpensive apparatus which will be effective in evaporating and distributing disinfectants, liquid perfumes or other fluids, and which will serve to discharge a regular supply of said fluids, and will further admit of the regulation of the quantity of the fluids consumed by evaporation or discharged in liquid form.

A further object of the invention lies in the provision of a disinfecting device, so constructed that the quantity of disinfectant material remaining in the device will be always readily visible.

A further object is to provide a device of the character described that will be strong, durable, simple in construction, and easily installed, and not likely to get out of working order.

With these and various other objects in view, my invention has relation to certain novel features of the construction and operation, an example of which is described in the following specification, and illustrated in the accompanying drawing, wherein:

Figure 1 is a side elevation of the disinfecting device, the upper portion of its correlated supporting casing being broken away, the lower portion thereof being shown in sections. Fig. 2 is a similar side elevation of the device, showing the same complete. Fig. 3 is a view of the device in cross-section, the section being taken on the line $x-x$ of Fig. 2. Fig. 4 is a detail perspective view of a frame or stand, which is positioned in the bottom of the disinfecting device, and which carries a considerable length of felt, or other absorbent material, through which the liquid must be transmitted before escaping from the casing. Fig. 5 is a view of the device in cross-section, the section being taken upon the line $y-y$ of Fig. 2.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in all the figures, the numeral 1 denotes an elongated

upright cylindrical vessel, preferably of glass. This vessel is provided at one side of its lower portion with a vertically elongated indenture 2, the lower portion of which indenture is provided with an outer wall 3, integral with the walls of the vessel 1, and flush with the surface of said wall. An auxiliary vessel is thus formed within the lower portion of the indenture 2, between the concave wall of said indenture and the outer wall 3 thereof, the bottom of the vessel 1 being extended to form a bottom for the auxiliary vessel. A slot or aperture 4, provided in the lower extremity of the concave wall of the indenture 2 establishes a communication between the vessel 1 and the auxiliary vessel. The top of the auxiliary vessel will be left open, the object of this construction being hereinafter made clear. Within the auxiliary vessel is vertically mounted a tube 5, preferably of glass, the lower extremity of said tube being rigid with the bottom of the auxiliary vessel. This rigid connection may be established during the formation of the parts 1 and 3, or the connection may be established by some mechanical means after the parts 1 and 3 have been formed. The lower extremity of the tube 5 communicates with a small aperture 6 in the bottom of said auxiliary vessel. The upper extremity of the tube 5 receives the end of a tube 7, having the form of an inverted J, the stem of said member being vertical, and terminating adjacent to the floor of the auxiliary vessel.

Within the members 5 and 7 is mounted an absorbent wick 8, one extremity of said wick being made to project slightly from the lower extremity of the tube 7, and the other extremity being passed through the aperture 6, and extending for a short distance below said aperture.

The vessel 1 rests upon the edge of a cup-shaped receptacle 9, having its outer diameter preferably equal to that of the vessel 1. From one side of the receptacle 9, an integral strip 10 extends upwardly, said strip having a width and a height, adapting it to form a closure for the open portion of the indenture 2, thus keeping all dust and dirt from entering said indenture, and thence falling into the auxiliary vessel. The strip 10 is surmounted by a three-part ring 11, inclosing the middle portion of the vessel 1, one member of said ring being integral with the strip 10, and the other two members hav-

ing hinged connection with the first named member at 12, the free ends of the two hinged members being adapted to meet, as indicated at 13, and to be fastened by any common locking device. Opposite to the juncture of said hinged members at 13, a slight indenture 14 is formed in the surface of the vessel 1, said indenture receiving an inwardly projecting loop 14^a carried by the free end of one of the hinged members. It is apparent that by this construction the vessel cannot be separated from its correlated parts 9, 10, and 11 until the connection at 13 has been unlocked. A pair of lugs 15, approximately U-shaped, are attached to the upper and lower extremities respectively of the strip 10, said lugs being adapted to receive any suitable form of supporting means attached to the wall of the room in which the disinfecting device is placed.

In order to hold the lower extremity of the vessel 1 in such a position that it will be supported by the edge of the receptacle 9, a ring 16, having its inner diameter equal to the outer diameter of the receptacle 9, is slipped over the edge of said receptacle, a portion of its surface being allowed to project above said edge to receive the lower extremity of the vessel 1. In order to prevent downward displacement of the ring 16, a wide groove 17 is provided in the lower edge of said ring, the lower portion of the strip 10 being passed through said groove and extended upwardly outside of the ring. The bottom portion of the strip 10 thus prevents downward displacement of the ring 16.

Within the receptacle 9 there is provided a removable rectangular frame consisting of vertical end members 18, and horizontal bars 19 connecting said end members, the members 18 having the form of apertured plates which are integral with the cross-bars 19, the whole being preferably stamped out of one sheet of material. The cross-bars 19 serve to receive an elongated web of felt 20, or other absorbent material, which is extended transversely between the bars of the frame as clearly shown in Figs. 1 and 4. By forcing the web 20 to traverse a zig-zag path from the top to the bottom of its supporting frame, a large surface of the web is exposed to the air, thus facilitating the evaporation of fluid disinfectant matter which the web is adapted to transmit from its upper to its lower extremity.

A short tube 21, depending from the bottom of the receptacle 9, and having communication with the interior of said receptacle, constitutes a discharge outlet. The bottom of the tube 21 will communicate with a flexible tube 22, adapted to conduct fluid disinfectant to the bowl of a water-closet or journal. A collar 23 suspended by an arm 24 from the receptacle 9 serves to hold the tube 22 normally in place upon the tube 21. A

plurality of perforations 25 are provided in the vertical wall of the receptacle 9 to permit the disinfectant fluid which has evaporated within said receptacle to escape and purify the atmosphere of the room.

An explanation will now be given with regard to the use and operation of the above described disinfecting device.

In filling the vessel, 1, this vessel will be made to assume a horizontal position, and the fluid will be gradually poured into the indenture 2, from which it will enter the vessel through the aperture 4. By adopting this process, the air within the vessel will be free to escape as the liquid gradually takes its place. In order to refill the vessel 1, there will be no necessity of removing the casing comprising the parts 9, 10, and 11 from the wall to which said casing is attached. By simply unlocking the hinged members of the ring 11, the vessel 1 may be readily lifted from its casing, and may be quickly and easily replaced after having been filled. Glass is specified as a preferable material of which to construct the vessel 1 for the reason that such material will permit the quantity of fluid within the vessel to be easily observed, so that there need be no doubt as to the proper time at which to replenish the vessel. After the vessel has been filled, and placed within its casing, there will be a small quantity of fluid at the bottom of the auxiliary vessel, said fluid being retained by the wall 3. The depth at which this fluid stands will be equal to the vertical dimensions of the aperture 4, and the air pressure acting upon this fluid will prevent it rising to a greater height than that specified. The fluid will be gradually removed from the auxiliary vessel, however, due to the capillary action of the wick 8, which will gradually absorb the fluid and transmit it through the tubes 7 and 5 to the absorbent web 20. Due to the combined effect of capillary action and gravity, the fluid will gradually travel from the upper to the lower extremity of said web, a considerable quantity of the fluid being evaporated during such travel. As previously stated, the evaporated fluid will escape into the room through the apertures 25 and will serve to purify the atmosphere of the room. After the device has begun operation, the web will be permanently super-saturated with disinfectant fluid, and the excess of fluid will slowly drip from the lower extremities of the web to the bottom of the receptacle 9, from which it will escape by the tube 21 into the tube 22, and thence to any place where disinfecting or deodorizing is necessary.

It is to be noted that the J-shaped tube 7 is not rigidly fixed in relation to the tube 5, but may be vertically adjusted within the last named tube by increasing the height at which the tube 7 is mounted, and also in-

creasing the length of the wick, the quantity of flow may be decreased. It is intended that the fluid be very gradually removed from the vessel 1 by the wick 8, so that it
 5 will be necessary to replenish said vessel only at long intervals.

As the level of the fluid within the vessel is gradually lowered, the strength of the vacuum in the upper portion of the vessel
 10 will be correspondingly increased, until the air becomes so rare that exterior atmospheric pressure will cause air bubbles to pass through the aperture 4 and rise through the fluid in the vessel 1 to the upper portion of
 15 said vessel.

By locking together the two hinged members of the ring 11, and providing one of said members with a projection adapted to enter a concave recess in the outer surface of the vessel 1, it is apparent that the removal of said vessel from its casing by unauthorized parties is prevented. The locking device serves both to prevent upward displacement of the vessel 1, or to prevent the rotation of said vessel in its supporting casing. The prevention of rotation is an essential feature, since it is desirable to keep the indenture 2 constantly covered by the strip 10, which strip is secured to the wall. If, by rotation of the vessel 1, the indenture 2 could be made to occupy a position opposite to that of the strip 10, an opportunity would be given for unauthorized parties to tamper with the wick, and dust and dirt would be able to enter the indenture and accumulate in the auxiliary vessel.

It is apparent that the details of construction and proportion of parts for the above invention may be varied without sacrificing
 40 its advantages or departing from the spirit thereof, and the device is therefore presented

as including all such changes and modifications as come within the scope of the following claims.

What I claim is:

1. In a disinfecting device, the combination with a cup-shaped receptacle having its vertical wall perforated, of an elongated strip vertically extending from the rim of said receptacle, horizontal annular segments
 50 hinged to the upper extremity of said strip, a locking device attached to the free ends of the annular segments, a ring surrounding the cup-shaped receptacle adjacent to the rim of the latter and extending somewhat above it, and a lug on the inner side of
 55 one of the annular segments.

2. In a disinfecting device, the combination with a cup-shaped receptacle having its vertical wall perforated, of an elongated strip vertically extending from the rim of said receptacle, horizontal annular segments hinged to the upper extremity of said strip, an upright cylindrical vessel resting on the rim of the cup-shaped receptacle, and held
 60 in position by the annular segments, a lug provided on the inner side of one of the annular segments, said lug adapted to project into an indenture provided in the upright cylindrical vessel, and a frame which is composed of horizontal and vertical members,
 65 contained in the cup-shaped receptacle, said frame supporting an absorbent fabric which is given a zig-zag form by the horizontal members of said frame.

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

OLGA M. HITCHCOCK.

Witnesses:

L. MORRIS,

J. I. MURRAY.