

Improvements in and relating to devices for distributing odors, disinfectants and the like / [Charles Taws Bradshaw].

Contributors

Bradshaw, Charles Taws.
Haseltine, Lake & Co.

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Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

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COMPLETE SPECIFICATION.

**Improvements in and relating to Devices for Distributing Odors,
Disinfectants. and the like ”:**

I, CHARLES TAWS BRADSHAW, of No 2309 South Seventeenth Street, City of Philadelphia, State of Pennsylvania, United States of America, Watchmaker, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement,—

This invention has relation to an improved device for distributing odors, such as perfumes for the purpose of rendering the air in the living room pleasant, or medicated vapors in the sick-room or hospital either for medicinal purposes or for fumigating the atmosphere.

10 The principal object of my invention is to provide a device of the character described to be used in combination with a rotary fan and so constructed as to distribute the vapors throughout the room as the fan revolves.

15 A further object of my invention is to provide means for preventing the odorous agent from dripping or being thrown against the furniture of the room or other support which carries the device. Another object of my invention is to provide simple and efficient means for attaching the odorizing device to the fan.

20 With these main objects in view my invention consists in providing a reservoir adapted to hold the odorizing liquid having means connected with said reservoir for spraying or discharging the said odors as the same is revolved, the air currents produced by the gyrations of the fan blades serving to distribute the odors throughout the room. My invention further consists in providing specific means for securing the device to the fan blades and centering the same on the fan shaft.

25 My invention still further consists in providing means for preventing the odorous liquid from dropping from the atomizing tube and in providing a guard adapted to surround the fan blades having a felt or other absorbent material secured on its interior which will catch any sprays or drops of the odorous liquid which might come from the atomizers.

30 Referring to the accompanying drawing, Fig. 1 is a face view of a rotary fan having my improvement applied thereto. Fig. 2 is a sectional elevation through the odorizing device shown in Fig. 1. Fig. 3 is a rear view of the same illustrating my preferred means for securing the device to the fan blades. Fig. 4 is an enlarged sectional detail through one of the atomizing tubes. Fig. 5
35 is a plan view of a section of the outer guard showing means for adjusting the same. Fig. 6 is a side elevation of one form of disk fan showing my device applied thereto. Fig. 7 is a rear elevation of the device showing a modified form of atomizing tube and a different form of means for attaching the reservoir to the fan. Fig. 8 is a central vertical section through the reservoir and tubes shown in Fig. 7. Fig. 9 is a sectional elevation showing two compartments in
40 the supply reservoir.

[Price 8d.]

Improvements in and relating to Devices for Distributing Odors, Disinfectants, &c.

In carrying out my invention I provide a reservoir 1, for holding the odorous liquid, or other agent. This reservoir comprises a circular receptacle which may have a single compartment or it may be divided into two or more compartments, such for instance as illustrated in Fig. 9 of the drawings in which two compartments are shown. The reservoir is provided with threaded openings, 2, formed in the periphery of the said reservoir diametrically opposite to each other the said openings being adapted for the reception of the atomizing tubes, 3. In my preferred form of tube a milled disk as 4 is provided above the threaded end for the purpose of turning the said tube when it is desired to move the same from the reservoir, 1.

The openings, 5, in each of the tubes taper toward the outer ends of said tube and terminate in a very fine opening as 6. A wire frame as 7 is secured to the ends of the tubes, 3, and is preferably formed in triangular shape as illustrated in Fig. 2 of the drawings. A spreading pad as 8 is supported on this frame which comprises two pieces of felt, or other absorbent material which are sewed, or otherwise secured on each side of the frame, 7, having their lower ends securely wrapped around the ends of the tube, 3, so that any of the odorizing liquid which escapes from the said tubes will be caught by this bag-shaped pad and absorbed thereby. Near the inner end of the openings, 5, of the tubes, 3, I provide a filling, 9, composed preferably of sponge, and across the ends of the said tube I secure a thin disk or diaphragm, 10, having a very fine perforation in its centre which registers with the central opening of the tube but which is much smaller in diameter than the said opening. The object of this is to prevent too much of the odorizing liquid from entering the atomizing tubes.

The rear plate, 11, of the reservoir, 1, is provided in its centre with a projecting conical point, 12, which is adapted to enter a counter-sink provided in the end of the fan shaft for the purpose of centering the said reservoir on the shaft. I provide two sets of spring arms as 13, for securing my device to the fan blades and these arms are secured to the plate, 11, in the manner illustrated in Fig. 3 of the drawings. A pair of lugs, 14, are secured or formed on the plate, 11, and each of these lugs are provided with grooves or channels of a size sufficient to admit the wire which forms the arms, 13. After inserting the wire into the grooves of the lugs, 14, I upset the outer face of the lugs by hammering the same which causes the metal to close or partially close the grooves and firmly hold the wires in position. These wires may also be soldered to more firmly hold them in position. The said arms, 13, are made of spring wire having their free ends bent at an angle to form the hooks, 15, which are adapted to engage the edges of the fan blades. Each set of arms comprises a single wire disposed radially toward the centre of the plate, 11, and having a coil formed in each arm at the points in front of the lugs, 14, so that the tension of the spring in said arms will be exerted against the edges of the fan blades when the device is in position on the fan.

In placing the device in position the conical point 12, is centered against the fan shaft and the spring arms, 13, are pressed toward each other and passed between the opposing edges of the fan blades and when these arms are released the hooks will engage the edges of the fan blades under tension and hold the device firmly in position.

A circular guard, 16, is provided around the fan blades for catching any drops or sprays which escape from the pad, 8. This guard comprises an outer band, 17, which may be adjustably secured to the wire guard usually carried by rotary fans as shown in Fig. 1 of the drawing, or if the fan is not provided with a stationary guard this band, 17, may be supported by a frame which can be braced to the fan motor such for instance as the arms, 18, shown in Fig. 1 of the drawings. The interior surface of the band, 17, is provided with a lining of felt, or other absorbent material as 19. The purpose of this is to catch any drops or sprays which might be thrown by the atomizers during the

Improvements in and relating to Devices for Distributing Odors, Disinfectants, &c.

revolving of the fan and prevent the same from being thrown around the room and upon the table or other fan support. When a detachable band is used the same must be adjustable so as to fit the stationary guard of the different makes of fans and to accomplish this I provide a longitudinally disposed slot, 20, in one end of the band into which the screw, 21, which is carried by the other end of the band fits. A thumb nut, 22, is threaded on the screw, 21, and forms means for securing the two ends of the band together in their adjusted position.

In operation, as the fan is caused to revolve the liquid in the reservoir, 1, will be agitated by centrifugal force and will pass through the small opening in the diaphragm, 10, carried by the inner ends of the tubes, 3, into the central opening, 5, of each tube. The sponge, 9, prevents the said liquid from feeding too freely through the tube. The liquid then passes through the tubes and out through the small openings 6, and is caught by the pads, 8, which become thoroughly saturated with the odorous liquid and as the said liquid evaporates the blast created by the revolving fan blades will distribute the odors throughout the room. Any drippings which might escape from the pads, 8, will be caught by the felt guard, 19, and the odors arising from this guard as it becomes saturated will also be distributed throughout the room in the same manner so that none of the material used is lost.

In Fig. 7 of the drawings the atomizing tubes are shown as curved at their free ends and the ends of the tubes are tapered or flattened out for the purpose of partially closing or reducing the opening at this end of the said tube so that a very fine spray will escape when the device is in operation. The interior of the tubes of this construction are provided with wicks 23, which extend from the ends of the tubes to the reservoir, 1. The wicks may simply enter the reservoir or they may be curled around inside the said reservoir so as to become thoroughly saturated with the odorous liquid.

In the construction shown in Fig. 8 the rear face of the reservoir, 1, is made in the form of an inverted cone, the purpose of this being to allow of the device being centered against the end of the fan shaft when being applied to the fan. In Figs. 6 and 7 the tubes are shown in such a proportion as to extend out to a point near the ends of the blades, this being the point of greatest agitation in fan motors.

In Fig. 7 I have shown a modified form of securing means for the reservoir consisting of the flexible wires, 24, which are held to the reservoir by means of the straps, 25, the said wires being twisted around the fan blades thereby holding the reservoir securely in position.

My invention can also be applied to ceiling fans by securing the reservoir, 1, directly to the fan blade at a point near the central pivot and having one tube, such as 3 extending from the reservoir to a point near the free end of the fan blades. I have found my device to be very useful in the sick-room for distributing medicated vapors and especially advantageous in hospitals for this purpose. It has also received great favor for ordinary household and office use in furnishing a pleasing perfume to the atmosphere.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In a device for distributing odors the combination of a closed reservoir adapted to hold the odorous liquid, openings provided in the periphery of said reservoir, atomizing tubes threaded into said openings and a cap or bag composed of absorbent material secured over the discharge ends of the atomizing tube for the purpose described.

2. In a device for distributing odors, the combination of a revolving reservoir adapted to be carried by the shaft of a rotary fan, hollow tubes threaded into openings provided in the periphery of the said reservoir, a perforated diaphragm secured over the inner end of the tube, a filling of absorbent material provided

Improvements in and relating to Devices for Distributing Odors, Disinfectants, &c.

in the end of the tube adjacent to the said diaphragm and a cap or socket composed of absorbent material secured over the free ends of the atomizing tube, substantially as described.

3. The combination with a revolving fan of a receptacle or reservoir adapted to hold an odorous fluid, atomizing tubes communicating with the said reservoir, radially disposed spring arms secured to the rear of the reservoir and oppositely disposed hooked ends provided on said spring arm adapted to engage the opposing edges of the fan blades and hold the device in position, substantially as described. 5

4. The combination with a revolving fan, of a reservoir carried thereby adapted to hold an odorous liquid, atomizing tubes connected with said reservoir, and a guard having an interior covering of absorbent material extending around the circle of rotation of the fan blades, for the purpose of arresting any of the odorizing liquid which escapes from the atomizing tubes, substantially as described. 10

5. The combination with a revolving fan, of a reservoir carried thereby adapted to hold an odorous liquid, radially disposed atomizing tubes connected with said reservoir, a circular guard surrounding the fan blades, means for supporting said guard, and an adjustable band having its inner surface composed of absorbent material carried by the said guard, for the purpose, substantially as described. 15 20

6. The combination of a closed receptacle or reservoir, screw-threaded apertures formed in the periphery of said reservoir, radially disposed tubes threaded into the said apertures, means for checking the flow of liquid through said tubes, a skeleton frame secured to the ends of the tubes, and a pocket composed of absorbent material supported by the skeleton frame having its open end secured around the tubes adjacent their ends, substantially as described. 25

7. The combination with the reservoir, 1, of a flat rear face formed on said reservoir, a centering point carried by said face, lugs, 14, formed on said face, spring arms, 13, secured in said lugs, and angularly disposed hooks formed on the free ends of said spring arms, adapted to engage the opposing edges of the fan blades under tension, and hold the device in position on the fan, substantially as described. 30

8. In a device for distributing odors, the combination of a revolving closed reservoir adapted to hold the odorous liquid, one or more radially disposed tubes connected with said reservoir, small openings provided in said tubes adjacent their free ends, and wicks passing through said tubes and into the reservoir, substantially as described. 35

9. In combination with a revolving fan, a receptacle or reservoir adapted to hold an odorous liquid, means for securing said reservoir to the fan so as to revolve therewith, one or more radially disposed tubes extending from said reservoir having reduced ends, a small spraying opening provided in each of said reduced ends, and wicks provided in said tubes and entering the reservoir, substantially as described. 40

10. The combination with a revolving fan, of a reservoir adapted to hold an odorous liquid, means for securing said reservoir to the fan, so as to revolve therewith, hollow tubes extending from the reservoir to a point near the ends of the fan blades and in close proximity to said blades having their ends curved and reduced, spraying opening formed in the said reduced ends and a wick or feeding medium provided in said tubes extending within the reservoir, substantially as described. 45 50

11. The combination with a revolving fan, of a reservoir, 1, having a cone shaped face for centering the same on the fan shaft, two or more compartments formed in said reservoir, a hollow-tube extending from each compartment to a point near the ends of the fan blades, an atomizer formed in the end of each tube, and wicks extending from the reservoir to the end of each tube, substantially as described. 55

12. In a device for distributing odors the combination of a revolving receptacle

Improvements in and relating to Devices for Distributing Odors, Disinfectants, &c.

or reservoir adapted to hold an odorous liquid, means for securing said reservoir to a rotary fan so as to revolve therewith, one or more radially disposed tubes extending from said reservoir having reduced ends forming a spraying opening and absorbent material provided in said tubes for checking the flow of the
5 liquid through the said tubes, substantially as described.

Dated this 20th day of August 1901.

HASELTINE LAKE & Co.
45 Southampton Buildings, London, W.C.
Agents for the Applicant.

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Fig. 1.

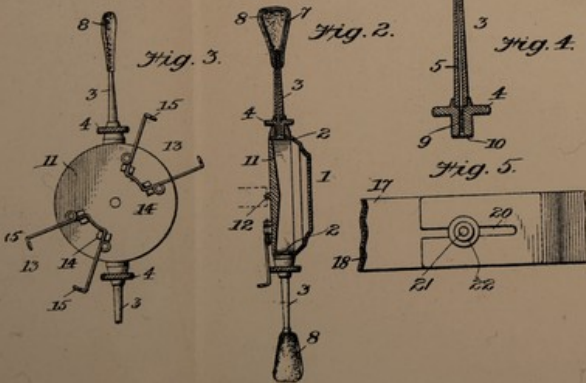
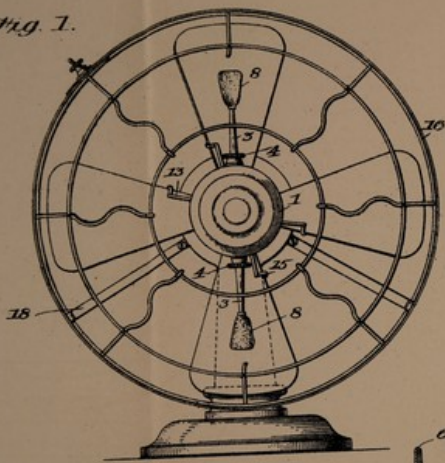


Fig. 6.

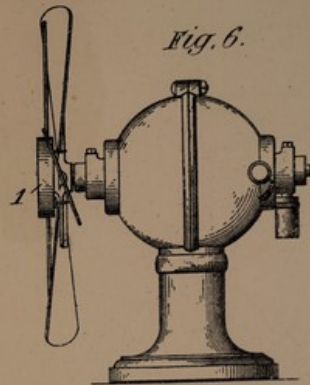
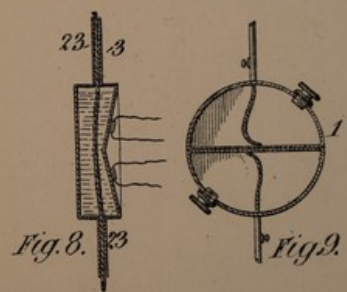
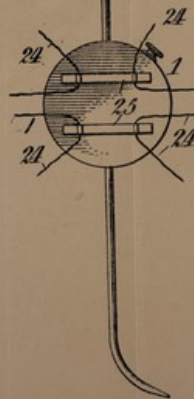


Fig. 7.



[This Drawing is a reproduction of the Original on a reduced scale.]

