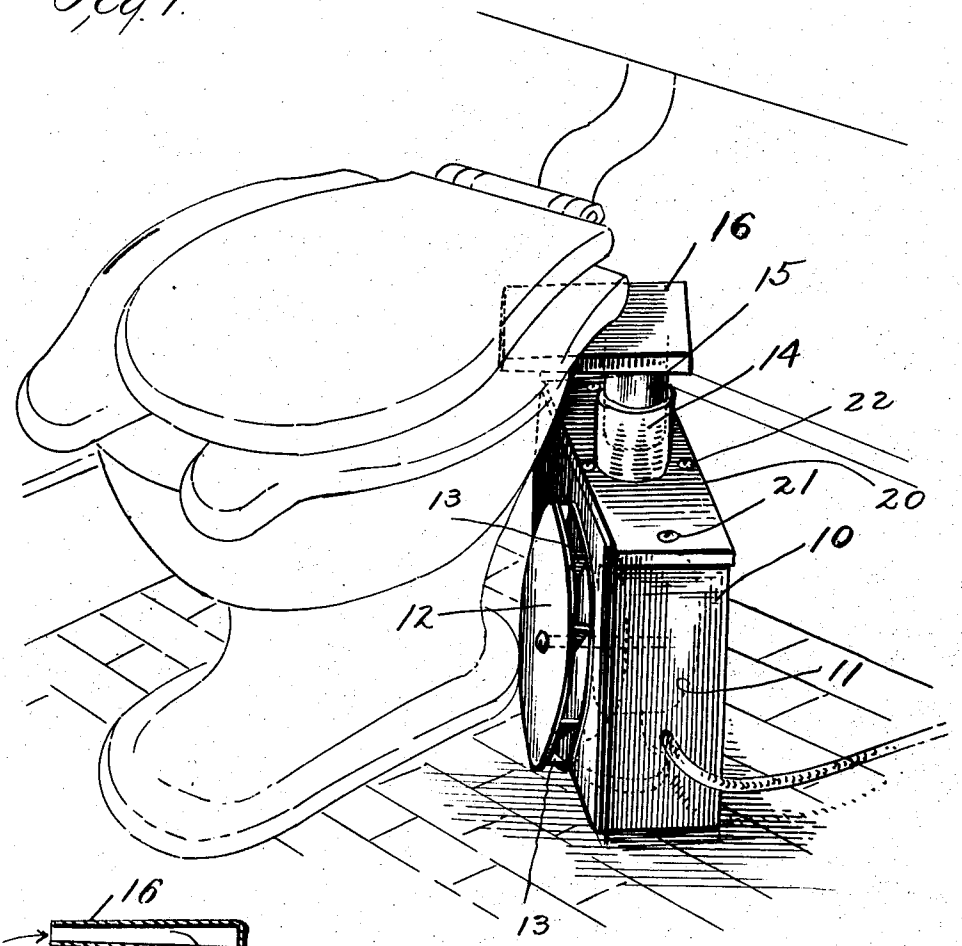
Aug. 26, 1930. H. H. ROOT 1,774,156

AIR PURIFIER FOR TOILETS

Filed Jan. 21, 1928

Fig. 1.



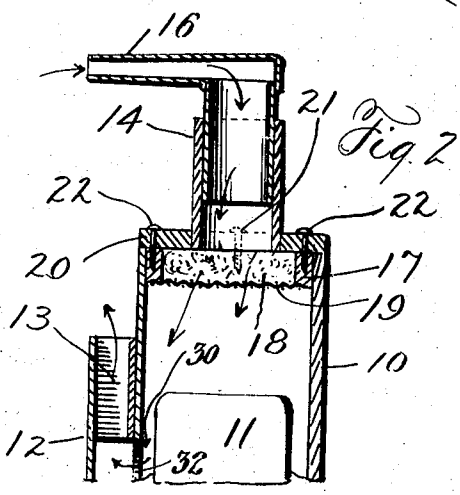


Fig. 2

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UNITED STATES PATENT OFFICE

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AIR PURIFIER FOR TOILETS

Application filed January 21, 1928. Serial No. 248,522.

The object of my invention is to provide means for the sanitation or purification of washrooms, toilets, and other places by the treatment of the air thereof by apparatus which will combine maximum efficiency in its deodorizing and other beneficial effects on the air, simplicity of parts and readiness of application to a bowl, especially as an attachment, so that no alteration of the original condition of the structure or parts will be necessary, and no special skill in making or applying the attachment will be called for.

My invention consists in whatever is described by or is included within the terms or scope of the appended claims.

In the drawings:

Fig. 1 is a perspective view illustrating an embodiment of my invention showing it installed.

Fig. 2 is a vertical section of a portion thereof.

Briefly described the embodiment of my invention shown in the drawings includes a rectangular casing or support readily made of wood which by reason of its flat bottom may be easily supported on the floor and which at the top has a pipe connection with a nozzle that extends horizontally to project over the top edge of the bowl or fixture, and an air moving device including an electric motor mounted within the casing which will cause a flow of air into the nozzle and down through the pipe and into the casing and thence, out through a vertical wall thereof, means for deodorizing or disinfecting the air being placed in the upper part of the casing through which the air is drawn before it passes outward, into the room purified and deodorized, the purifying or disinfecting material being thus interposed between the air flow inducing device and the bowl so that it is impossible that any leakage from said device would result in the discharge of air into the room without being passed through the disinfecting or deodorizing agent. The device has no positive connection with the bowl or fixture but simply rests on the floor in a convenient position so that it is portable or readily removable and is self contained so that it involves no plumbing or mechanical work for attachment to the bowl and can be readily shifted around as when sweeping or cleaning is to be done. No skill whatever is required for putting it in position for use, and it is so small and compact that it may be easily handled. It is noiseless in operation.

Describing in detail what is shown in the drawings, the supporting casing, 10, is a box-like structure readily made of wood, of rectangular form which thus has a flat bottom which provides an extended base of ample area to support it, within which is mounted an electric motor, 11, to the horizontal armature shaft on which is secured a fan, 12, that is over an opening in one of the larger vertical walls of the casing, the fan being of a well-known construction that includes obliquely extending vanes, 13, so that by its revolution, air drawn into the top of the casing will be expelled outward therefrom. The top of the casing has a hole with which communicates the lower end of a vertical pipe which consists of two telescopic members, one a piece of rubber hose, 14, secured to the casing top, and the other a piece of metal pipe, 15, which extends into the hose and is vertically movable and which at the top has a horizontally extending nozzle, 16, which is wide horizontally and flat vertically so that it may extend over the top edge of the bowl beneath the seat without obstructing the latter in any way. The telescopic construction is employed for bowls of different height, and adjustment is necessary so that the supporting casing may rest on the floor regardless of the height the inlet nozzle may occupy. In the upper part of the casing immediately below the opening is a tray-like container, 17, filled with granulated charcoal, 18, or other purifying or deodorizing material, the bottom, 19, of the tray being of cloth or reticulated material which will allow the free passage of air drawn by the fan from the bowl.

The top, 20, of the casing is preferably removable, being secured to the end walls of the casing by wooden screws, 21, so that should occasion arise to get access to the in-

terior of the casing as for the renewal of the gas absorbent material, that may readily be done. The tray, 17, is supported by screws, 22, at opposite sides which pass through the top, 20, into the side walls of the tray so that tray and top may be removed and replaced together and when access to the tray contents is necessary it involves merely removing the screws, 22.

If desired a guard may be placed over the fan that will in nowise interfere with the free movement of air, but which will prevent fingers or other objects coming in contact with the rapidly rotating fan.

It will be seen that the reticulated member 19 and its frame forms essentially a transverse wall, a portion thereof being reticulated or otherwise perforated to allow the passage of air from the inlet to the interior of the casing and which casing on one side of such wall supports the filter bed of charcoal or the like. Inwardly from this wall, below as shown, the casing walls form a pressure reduction chamber or space 30, the only outlet for which is the restricted opening 32 surrounding the motor shaft and which allows the air to pass to the fan. By reason of this pressure reduction space a negative pressure or vacuum is built up and maintained so long as the fan is operating, assuring uniform suction on the filter bed. The restricted opening 32, interposed between the space 30 and the fan, insures a constant flow of air out of the space 30 without any churning effect of the air as when a fan of the ordinary construction is used.

I claim:

1. A deodorizer for a fixture of the class described, comprising a container, perforate means transversely dividing the same, air purifying means disposed above said means, air flow inducing means disposed within the casing, arranged to draw air through the purifying means, there being tubular means communciating with the container above the same and adjacent the air purifying means and arranged to collect foul air from such fixture.

2. A deodorizer for a fixture of the class described, comprising, a container having substantially imperforate walls, perforate means transversely dividing the same, air purifying means on one side of the dividing means, air suction means on the other side, there being tubular means arranged to collect foul air from such fixture, and communicating with the container directly adjacent the air purifying means.

3. A deodorizing apparatus comprising a hollow container, perforate means extending across the container, a static deodorizing medium within the container adjacent said means, and supported thereby, a motor housed by the container and a fan driven thereby, there being foul air collecting means including a flattened hollow member communicating with the container on the side of said medium opposite to said motor, and terminating in an elongated receiving opening adapted to be positioned at the edge of a toilet bowl, said member communicating with the container, the fan being operably arranged to create suction and thereby draw such foul air through the deodorizing medium.

4. Apparatus of the character described, comprising piping having an inlet and an outlet, the inlet being flattened and thereby adapted to extend over the edge of the toilet bowl, suction means for inducing a flow of air into the inlet and through the piping, and air purifying means situated between the inlet and the flow-inducing means, whereby all the air drawn through the inlet will flow through the air purifying means.

5. A deodorizing unit of the class described, comprising a casing, means providing a transverse partition in the casing said means including an air purifying and deodorizing body, tubular means providing an inlet for air to be filtered, said inlet means communicating with the casing on one side of the body, and an air suction motor driven fan operatively arranged on the side of said body opposite the inlet, whereby all the air allowed to enter the casing through said inlet will be forced to pass through the said purifying and deodorizing body.

6. A deodorizing unit of the class described, comprising a container, a transverse wall in the container, said wall having a perforate portion, a filter bed supported in place by said portion, tubular means providing an entrance for air to be filtered, said means being supported by the casing and communicating therewith adjacent the filter bed, a suction fan operatively supported by the casing and arranged to draw air through the tubular means and thence through the filter bed to deodorize the air, there being means, including the casing, to provide a pressure reduction space between the filter bed and the fan, the casing having a wall portion with a restricted opening therein, said opening being interposed between the pressure reduction space and the fan to conduct the air thereto.

7. A deodorizing unit, comprising a casing, a filter bed supported by said casing in such manner that all the air which passes through the casing must pass through the filter bed, tubular inlet means associated with one wall of the casing, on one side of the filter bed, an electric motor operatively supported by the casing on the opposite side of the bed, a fan connected to the armature shaft of the motor and having generally radially extending blades, a wall member associated with the casing adjacent the blades

and having a restricted opening substantially centrally of the fan, the wall and opening constraining the air from within the casing to pass through said opening to the fan blades whereby air will be drawn in through the inlet, then through the filter bed, and thereafter returned to the atmosphere, upon operation of the motor.

In testimony whereof I hereunto affix my signature.

HUBER H. ROOT.