A toilet odor removal system is described, wherein malodorous air in the bowl of the toilet is evacuated by suction through a tube and into the sink drainage system. The system may be used in the construction of new toilets, or may be easily adapted for sale as a kit to retrofit existing toilets. An intake tube may be located under the toilet seat, in connection with a suction device. The suction device may be coupled to an exhaust tube which connects to the sink drainage system below the p-trap of the sink. The exhaust tube may also have a one-way check valve to prevent odors from the sewer system escaping into the ambient air of the bathroom. The odor removal system may also have an automatic means of turning on, such as a sensor or a pressure-activated switch.
TOILET ODOR REMOVAL SYSTEM

FIELD OF THE INVENTION

[0001] The present invention relates to odor removal systems. More specifically, the present invention relates to an odor removal system for use with toilets.

BACKGROUND

[0002] Toilet odors can be an unpleasant and embarrassing problem. Numerous solutions have been proposed to solve toilet odor problems, such as ceiling fans (which are inefficient because they evacuate not only the odorous air, but also the surrounding ambient air in the bathroom) and, more recently, toilets that evacuate malodorous air into the toilet sewer line.

[0003] Some solutions create a flange under the toilet to discharge the air directly into the sewer or devised other systems to discharge the air into the sewer below the toilet; some have proposed putting the air into the toilet flush line. Many of these approaches require significant and expensive modifications to the toilet, including drilling holes into the ceramic toilet. Evacuation of malodorous air into the toilet sewer line involves significant technical problems, however, because inputting an airstream interferes with the flushing function of the toilet.

[0004] Thus, there is a need for an improved toilet odor removal system. Furthermore, it would be desirable for the system to be easily adapted for use in current toilets.

SUMMARY OF THE INVENTION

[0005] A toilet odor removal system is described, comprising an intake conduit with a proximal end and a distal end, the proximal end configured to connect to a toilet bowl, and the distal end configured to connect to a suction device. The suction device has a power source, and may be connected to the proximal end of an exhaust conduit, with the distal end of the exhaust conduit being configured to connect to a sink drain. The distal end of the exhaust conduit may be connected to a portion of sink drain pipe. The exhaust conduit may further comprise a valve to prevent air from the sink drain from escaping back through the conduit.

[0006] In another configuration, the toilet odor removal system may comprise a toilet bowl, the toilet bowl comprising a toilet bowl rim; an intake conduit disposed between the toilet bowl rim and the toilet seat, the intake conduit comprising a proximal end and a distal end; a suction device connected to the distal end of the intake conduit; a power source connected to the suction device; and an exhaust conduit comprising a proximal end connected to the suction device and a distal end for connection to a sink drain.

[0007] The toilet seat may have an upper surface and a lower surface, and the intake conduit may be attached to the lower surface of the toilet seat. In another configuration, the intake conduit may be formed integral to the lower surface of the toilet seat.

[0008] In another configuration, the odor removal system may further comprise a toilet seat lid with a sensor thereon for detecting when a person is sitting on the toilet seat. The sensor may be disposed in communication with the suction device, such that the suction device turns on when the sensor senses a person sitting on the toilet seat. The sensor device may be, for example, a pressure sensor.

[0009] In another configuration, there may be a kit for removing toilet odors from an environment, the kit comprising, (a) an intake conduit for attachment to a toilet, (b) a suction device disposed in connection to the intake conduit, and (c) an exhaust conduit disposed in connection to the suction device, the exhaust conduit configured for attachment to a sink trap. The exhaust conduit may also be provided with a one-way check valve.

[0010] The kit may also include, for example, a power supply attached to the suction device. It may include a portion of sink drain connected to the exhaust conduit. The kit may include a toilet seat, with the intake conduit attached to the toilet seat or formed integrally to the toilet seat. The kit may also include a toilet seat lid, the toilet seat lid having a sensor thereon for detecting when a person is sitting on the toilet seat. The sensor may be disposed in communication with the suction device, such that the suction device turns on when the sensor senses a person sitting on the toilet seat. The kit may also include a sub-toilet seat.

[0011] In another configuration, a toilet odor removal system is provided, comprising (a) an air intake conduit in the toilet bowl; and (b) an air exhaust conduit connected to a sink drain.

[0012] These and other aspects of the present invention are realized in a toilet odor removal system as shown and described in the following figures and related description. It will be appreciated that various configurations of the invention may not include each aspect set forth above and aspects discussed above shall not be read into the claims unless specifically described therein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Various configurations of the present invention are shown and described in reference to the numbered drawings wherein:

[0014] FIG. 1 shows a partial cut-away isometric view of a toilet equipped with the toilet odor removal system described herein;

[0015] FIG. 2 shows a partial cut-away isometric view of a toilet equipped with another configuration of the toilet odor removal system described herein;

[0016] FIG. 3 shows a partial cut-away isometric view of a toilet equipped with yet another configuration of the toilet odor removal system described herein;

[0017] FIG. 4 shows a side view of a toilet seat and toilet bowl according to one configuration; and

[0018] FIG. 5A shows a bottom-view of a toilet seat according to one configuration.

[0019] FIG. 5B shows a perspective close-up of the angled slats in FIG. 5A.

[0020] It will be appreciated that the drawings are illustrative and not limiting of the scope of the invention which is defined by the appended claims. The configurations shown accomplish various aspects of the invention. It is appreciated that it is not possible to clearly show each element and aspect of the invention in a single figure, and as such, multiple figures are presented to separately illustrate the various details of the invention in greater clarity. Similarly, not every configuration need accomplish all advantages of the present invention.
The following description includes specific details in order to provide a thorough understanding of the present toilet odor removal system. The skilled artisan will understand, however, that the methods described below can be practiced without employing these specific details, or that they can be used for purposes other than those described herein. Indeed, they can be modified and can be used in conjunction with products and techniques known to those of skill in the art in light of the present disclosure.

Reference in the specification to “one configuration” or “a configuration” means that a particular feature, structure, or characteristic described in connection with the configuration is included in at least one configuration. The appearances of the phrase “in one configuration” in various places in the specification are not necessarily all referring to the same configuration, and may not necessarily limit the inclusion of a particular element of the invention to a single configuration, rather the element may be included in other or all configurations discussed herein.

The invention and accompanying drawings will now be discussed in reference to the numerals provided therein so as to enable one skilled in the art to practice the present invention. The drawings and descriptions are intended to be exemplary of various aspects of the invention and are not intended to narrow the scope of the appended claims. Furthermore, it will be appreciated that the drawings may show aspects of the invention in isolation and the elements in one figure may be used in conjunction with elements shown in other figures.

Furthermore, the described features, structures, or characteristics of configurations of the invention may be combined in any suitable manner in one or more configurations. In the following description, numerous specific details are provided, such as examples of products or manufacturing techniques that may be used, to provide a thorough understanding of configurations of the invention. One skilled in the relevant art will recognize, however, that configurations of the invention may be practiced without one or more of the specific details, or with other methods, components, materials, and so forth. In other instances, well-known structures, materials, or operations are not shown or described in detail to avoid obscuring aspects of the invention.

Before the present invention is disclosed and described in detail, it should be understood that the present invention is not limited to any particular structures, process steps, or materials discussed or disclosed herein, but is extended to include equivalents thereof as would be recognized by those of ordinary skill in the relevant art. More specifically, the invention is defined by the terms set forth in the claims. It should also be understood that terminology contained herein is used for the purpose of describing particular aspects of the invention only and is not intended to limit the invention to the aspects or configurations shown unless expressly indicated as such. Likewise, the discussion of any particular aspect of the invention is not to be understood as a requirement that such aspect is required to be present apart from an express inclusion of the aspect in the claims.

It should also be noted that, as used in this specification and the appended claims, singular forms such as “a,” “an,” and “the” may include the plural unless the context clearly dictates otherwise. As used herein, a plurality of items, structural elements, compositional elements, and/or materials may be presented in a common list for convenience. However, these lists should be construed as though each member of the list is individually identified as a separate and unique member.

The toilet odor removal system described herein removes foul odors from a toilet while it is being used and discharges the odors into a standard sink drain pipe, thus preventing the odors from escaping into the ambient environment surrounding the toilet. In this way, the toilet odor removal system removes a substantial amount of odor, thereby keeping a bathroom odor-free or nearly odor-free.

In contrast to the prior art systems that evacuate malodorous air into a toilet sewer line, which disrupt the flushing action of the toilet, the present invention surprisingly does not disrupt the ability of a sink to drain. Moreover, the systems disclosed and claimed herein also do not result in malodorous air backing up through the sink as a result of air being input into the sink line. Thus, it has been found that the sink system as a means of discharging malodorous air into the sewer is surprising more effective system. An unexpected result is that exhausting air into the sink system does not in any way negatively impact the operation of the sink.

The toilet odor removal system is shown in the attached figures. The system generally comprises three components: an air intake conduit for drawing in air from within a toilet bowl, a fan or vacuum pump to provide the suction for the air intake, and a discharge conduit for discharging the withdrawn air away from the bathroom environment.

FIG. 1 shows a toilet that uses a configuration of the odor system removal described herein. A toilet is generally indicated at 20, with a toilet seat lid 23, a toilet seat 27, a toilet bowl 31 with a bowl rim 34, and a toilet base 38. Between the toilet bowl rim 34 and the toilet seat 27, there is disposed the proximal end 40a of an intake conduit 40. The intake conduit 40 may be any type of open conduit configured for channeling or conducting air from the toilet bowl 31. In one configuration, the intake conduit 40 is a rubber tube or hose, but it may alternatively comprise a metal pipe, or a plastic tube or pipe (such as PVC), or another known suitable material. The intake conduit proximal end 40a may also be integrated into the toilet seat 27, as shown in FIG. 5A below.

In some embodiments of the present invention, the systems discharge air at very low pressure. Generally, the size of the sink drain pipe is sufficiently small that discharging the malodorous air that the pressure increase is very slight and does not affect the operation of the sink system. For example, in some embodiments the size of the sink exhaust pipe is from approximately 1 inch (2.54 cm) to 2 inches (5.08 cm). In other embodiments, the size of the sink exhaust pipe is the size of a standard sink drain, i.e., 1.25 inches (3.175 cm), or alternative 1.5 inches (3.8 centimeters).

The intake conduit has a terminal intake end, or proximal end, 40a located in, or near, the toilet bowl. The proximal end 40a of the intake conduit 40 is open to the air of the toilet bowl 31, where toilet odors arise. In one configuration, the proximal end 40a is disposed above the rim 34 of the toilet bowl. This configuration ensures that any overflow from the toilet will not enter the intake conduit 40. It may also be desirable to place the proximal end 40a such that it does not protrude past the interior rim of the toilet seat 27 to prevent soiling or contamination of the intake conduit 40. Other configurations may be used to prevent soiling or contamination of the intake conduit 40, as described below.
The intake tube in the drawing is affixed under the back of the toilet seat and is to be integrated with the toilet seat (not shown) so that only the intake, which may be a flattened tube, is visible. Tests have shown that it works as an intake in a single location works efficiently, as it creates a negative pressure and draws the air in from under all parts of the toilet seat around the entire bowl in the space between the supports of the toilet seat and the bowl seat, as indicated in the drawing. Another major reason for putting the intake in the toilet seat is that the retrofit package requires only the replacement of the toilet seat with the removal of two bolts. Additionally, the gauge and positioning of those bolts is standard in nearly all toilets so that a retrofit toilet seat can be readily marketed to many customers.

In one configuration the intake end of the conduit 40a attaches to the bottom of the toilet seat 27, such that the intake end 40a does not protrude past the interior rim of the toilet seat 27. This prevents the intake end 40a of the conduit from being contaminated while the toilet is in use. The intake end 40a of the conduit may terminate at any point along the bottom surface of the toilet seat between the interior rim and the exterior rim of the toilet seat 27. The intake end of the conduit may also be beveled such that the edge of the conduit in contact with toilet seat 27 is longer than the edge directly opposite. This also prevents water and other fluids and solid matters from entering into the conduit.

The intake conduit 40a is also configured to be located above the toilet rim, or at least the overflow conduit, in order to prevent water from entering the intake conduit 40a. The intake end of the conduit 40a may also be formed integral with the toilet seat. By placing the intake conduit 40a either integral to the toilet seat, or connected to the underside of the toilet seat, the intake conduit is above the water line in the toilet bowl and requires no valve to prevent it from sucking water during the flush cycle. Additionally, it is above the water line in the toilet bowl, so that it will not be exposed to water if the toilet is plugged and overflows.

The intake conduit 40 extends from the toilet seat to a suction device 45. The distal end 40b of the intake conduit is operably connected to a suction device 45. The suction device 45 may be any type known in the art, for example, a vacuum pump or fan, or other motor for creating suction. The suction device sucks air from the toilet bowl 31 through the intake conduit 40, and then passes the air into the exhaust conduit 50, which is also operably connected to the suction device 45. As used herein, the term "operably connected" means that air is able to flow through the intake conduit, suction device and exhaust conduit.

To retrofit the odor removal system described herein for an ordinary toilet seat, the suction device 45 can be quite small, as it only is required to exhaust between 1.5 and 2 cubic feet of air per minute for a standard toilet seat. An oblong or open-front toilet may require additional air evacuation, and can be equipped as described below and shown in FIG. 4. The suction device 45 can be hidden, if desired for aesthetics, under the toilet by attaching it to one of the toilet seat bolts and the bolt that attaches the toilet bowl to the toilet. Alternately, it could be hidden inside the sink cabinet.

The suction device 45 is powered by a power supply 47. The power supply 47 may be any means known to those of skill in the art, such as alternating current from a home or wall outlet, direct current from one or more batteries, or solar power. If the suction device 45 is to be powered from the house power, it may be desirable to use a transformer to reduce it to 12 volts (or a similar low voltage system), so that it does not present the hazard of an electrical shock. The suction device 45 will function in a humid and sometimes moist environment, depending on the condensation on the toilet in hot weather, so it is important that it does not present a risk of electrical shock. As the vacuum pump is required to exhaust only a small amount of air, comparatively speaking, an alternate method to power it would be rechargeable battery; or by a combination of a battery and light-sensitive electric-generating panel or panels. In one embodiment, the power source is a battery or battery pack 45 in FIG. 2, to prevent any possible contact of water with a high-voltage power source from an alternating current. In another embodiment, the power source is 24 volts or less, because power sources less than 24 volts are generally not regulated. In yet another embodiment, the power source is 12 volts, which provides sufficient power for the suction device 45.

The suction device 45 does not require a large suction capacity. In some embodiments, the suction device 45 is configured to draw in all of the air from the toilet bowl to remove the odors. This comprises from approximately one (1) to approximately two (2) cubic feet of air per minute, and, in some instances, the suction device draws approximately one-and-one-half (1.5) cubic feet of air per minute for a standard toilet seat. Other types of toilet seats may require more suction.

The suction device 45 may be turned on or activated by any method known to those with skill in the art. For example, in FIG. 1, a switch 49 is provided. When a user desires to turn on the suction device, and thus the odor removal system, they can manually activate the switch 49 provided. Alternatively, the suction device and odor removal system may be activated by automatic means, which may be useful if guests or others are to use the toilet and do not have knowledge of the odor removal system. The automatic means may also prevent lapses in the toilet odor removal system. For example, as shown in FIG. 2, the toilet seat is equipped with a pressure actuated switch 71, disposed in communication with the suction device 45. Other means known in the art for automatically activating the suction device may be used, such as a proximity sensor (described below) that detects the presence of a user when they are sitting on the toilet.

The suction device is connected to the proximal end 50a of an exhaust conduit 50. The exhaust conduit connects to the suction device to provide a conduit to discharge and direct the malodorous air away from the ambient environment. The exhaust conduit 50 has a terminal or distal end 50b that connects to a sink drain 57. The exhaust conduit 50 may be any suitable flexible or rigid tubing known in the art. In some embodiments, the exhaust conduit 50 is comprised of flexible tubing. In some embodiments, the exhaust conduit 50 is also equipped with a check valve 54 to prevent backflow of sewer gas, and, in the case of stoppage of the sink system, water in the sink drain from passing back up through the exhaust conduit. The check valve 54 is a one-way valve to prevent any odors or backflow of air in the sink drain line from re-entering the toilet bowl 31. The check valve 54 may be placed along any portion of the exhaust conduit 50. As shown in FIG. 1, air may flow in the direction of the arrow 56, but not back into the toilet bowl 31. The check valve 54 may be integrated into a portion of sink drain pipe, or in the exhaust conduit 50. In one configuration, the exhaust stream is low pressure and low volume, and there is a large differential.
capacity between the exhaust conduit 50 and the sink drain pipe; thus, there is no significant back pressure to impede the operation of the sink p-trap.

[0042] In one configuration, the exhaust conduit terminal end 50b connects to the sink drain 57 at a point after, or below, the sink trap 61, for the sink the bathroom. Most household sinks are equipped with a p-trap. Due to the shape of the trap, the trap retains a small amount of water after the sink has been used. This water in the trap creates a seal that prevents sewer gases from passing from the drain pipes back up into the occupied space of the building. By connecting the exhaust conduit to the sink drain 57 at a point after or downstream of the p-trap, the air is discharged into the sink sewer system, where the air cannot escape into the room environment. The p-trap in the sink drain prevents the foul air discharged by the odor removal device from escaping back through the sink drain into the ambient environment of the bathroom. As shown by arrow 65, the waste from the sink drain 57 and the air discharged by the odor removal system are evacuated to the sink sewer.

[0043] In one configuration, the distal end of the exhaust conduit 50b connects to the sink drain 57 at the elbow after the p-trap 61, thus allowing the sink drain to fit into the wall with sufficient room for the exhaust conduit to fit into the sink drain. The distal end of the exhaust conduit 50b may fit into the sink drain 57 at any angle, but in some embodiments is at an angle that propels the exhaust air in the same direction as the flow of water in the sink drain. In some embodiments, the exhaust conduit 50b is fit into the sink drain 57 at or near the top portion of the sink drain pipe, so that water from the sink does not drain into the exhaust conduit. In other embodiments, the exhaust conduit 50b is fit into the sink drain 57 at a vertical or downward sloping angle relative to the sink drain pipe, also so that water from the sink does not drain into the exhaust conduit.

[0044] Turning now to FIG. 3, there is shown a toilet odor removal device in yet another configuration that utilizes a proximity sensor 75. As shown, a sensor wire 78 is attached to the sensor 75 and the suction device 45, to allow the proximity sensor 75 to communicate with the suction device 45. Thus, when a person sits on the toilet seat 27, the sensor 75 is triggered, activating the suction device 45, which then turns on to evacuate air from the toilet bowl 31 for as long as the person is on the toilet. When the person leaves the toilet, the proximity sensor 75 turns off the suction device 45. This proximity sensor 75, similar to the sensor on an automatic sink top, is intended to have a range of about 12.7 centimeters (about 5 inches), or sufficient to detect the presence of an individual sitting on the toilet. It may be desirable to have the range sufficiently limited so that the system will not come on when the lid is closed, as the distance between the lid and the water in the toilet bowl is greater than the range of the proximity sensor.

[0045] In another configuration, the toilet seat comprises two separate toilet seats of different sizes, as shown in FIG. 3. The first seat 27 is generally of a standard size. Most adults, when sitting on a standard size seat, create a seal such that air entering into the toilet bowl from above the seat is restricted. Instead, when the suction device is operating, it creates negative pressure within the toilet bowl, drawing air from within the toilet bowl, and the air in the toilet bowl is replaced by air from the room entering the toilet bowl through the small gap between the bottom of the toilet seat and the top of the toilet bowl rim. This flow of air prevents the escape of the malodorous air into the room.

[0046] The toilet sub-seat 27 is designed for use by smaller persons, such as children. The sub-seat 27 may be on the same hinge as the toilet seat 27 and the toilet seat lid 26. The sub-seat 27 offers a solution for the problems that arise when a smaller person utilizes the odor removal system. One problem may be that the smaller person does not fill the space of the toilet seat, and thus substantial quantities of air will escape into the room. A second problem may be that the distance between the smaller person and the proximity sensor 75 may be too great and the sensor will not turn on the suction device 45. By using sub-seat 27, the gap through which malodorous air can escape will be closed, and the smaller person will also be placed farther back into range of the proximity sensor 75 so that the suction device 45 will turn on.

[0047] FIG. 4 shows a side view of another possible configuration of the toilet odor removal system for use with oblong toilet seats, or toilet seats with the front portion open (which are common in public restrooms). For a standard toilet seat, the person sitting on the seat nearly encloses the seat area so air intake is mainly under the seat, in the gap between the seat and the toilet bowl. For toilet seats that are oblong or have the front portion open, there is more open space. In order to evacuate enough air for the odor system to be efficient, some of the open space may be eliminated.

[0048] One method of compensating for this additional open space is shown in FIG. 4, by including a toilet seat liner 81 to eliminate, or substantially eliminate, the gap between the toilet seat 27” and the toilet bowl rim 34. (For ease in describing, FIG. 4 only illustrates the toilet bowl 31, the toilet bowl rim 34, the toilet seat 27” and the toilet seat liner 81.) Any suitable material known in the art may be used for the liner 81, such as rubber, gasket material, and the like. The material may be attached to the bottom of the toilet seat 27” for easy installation by the consumer, or the material may be otherwise provided in a kit. The toilet seat liner 81 may extend fully around the lower portion of the toilet seat lid, but should not cover the intake conduit. By eliminating space under an elongated toilet seat or an elongated toilet seat with the front open, the necessary airflow to keep the odor removal system can be maintained by a minimal increase.

[0049] FIG. 5A shows another configuration for the proximal end of the intake conduit, 40a. According to this configuration, the proximal end 40a of the intake conduit is formed integrally with the bottom of the toilet seat 27, and may be flush with the surface of the bottom of the toilet seat. This configuration allows a user to replace their existing toilet seat with a new toilet seat, without having to connect, install, or attach the intake conduit to the toilet seat. However, when a user is using the toilet with the seat in an upright position, the proximal end 40a of the intake conduit may be exposed to contamination from urine and the like. Thus, angled slats 85 are provided over the proximal end 40a of the intake conduit. The angled slats 85 may be angled to admit air intake, but keep out unwanted urine contamination when the toilet seat 27 is in the upright position. FIG. 5B shows a perspective view of the intake conduit with angled slats 85.

[0050] There are many possible applications for the toilet odor removal system described herein, and one advantage may be that the system may be easily retrofitted to operate with existing plumbing, without the need for purchasing a new toilet. For example, in one configuration, the odor
The odor removal device may be sold as a kit, including a toilet seat replacement unit containing the air intake and proximity sensor, and smaller sub-seat if desired, the power supply, the suction device, and the sink drain elbow connected to the exhaust conduit, all as part of the odor removal device. In this way, the odor removal device may be a retrofit kit to be installed on existing toilets. Thus, in some configurations, the present odor removal system does not require the construction of a new toilet. In another configuration, the kit may simply include a connecting seal for inserting the end of the exhaust conduit into a hole drilled into an existing sink drain line or elbow. For example, the connecting seal may be a rubber seal that surrounds the end of the exhaust conduit and is sized to be forced fitted into a drilled hole in the sink drain line or elbow.

This retrofit system is designed so that it can be sold at a relatively low cost, and so that its installation is non-invasive and easily accomplished. All that is required is to replace the toilet seat with a new toilet seat with an air intake conduit 40a in the seat 27 and a sensor 75 in the lid 23, which requires the replacement of two bolts. The suction device 45 may be attached to the toilet using one of the toilet seat bolts and the bolt holding the tank to the tank, or, in another configuration, the suction device 45 could go inside the sink cabinet. The next step is to replace the small pipe in the sink behind the p-trap, which has two turn buckles, with the odor input fixture. If the sink has a cabinet, a small hole will need to be drilled along the baseboard to allow the tubing to go from the toilet to the under-the-sink exhaust. The tubing may be covered with a cosmetic covering so that it will not detract from the decor of the bathroom.

This novel toilet odor removal system allows individuals to easily install the device on existing toilets, and conveniently remove foul and offensive odors before they escape into the bathroom. It also conveniently discharges the foul air into the sewer through the sink drain in the bathroom near the toilet. As such, it is easy to install with standard plumbing tools.

There is thus disclosed an improved toilet odor removal system. It will be appreciated that numerous changes may be made to the present invention without departing from the scope of the claims.

What is claimed is:

1. A toilet odor removal system comprising:
   an intake conduit having a proximal end and a distal end, the proximal end configured to connect to a toilet bowl, and the distal end configured to connect to a suction device;
   the suction device having a power source; and
   an exhaust conduit having a proximal end and a distal end, the proximal end configured to connect to the suction device, and the distal end configured to connect to a sink drain.

2. The toilet odor removal system of claim 1, wherein the exhaust conduit further comprises a check valve.

3. A toilet odor removal system comprising:
   a toilet bowl comprising a toilet bowl rim;
   an intake conduit disposed between the toilet bowl rim and a toilet seat, the intake conduit comprising a proximal end and a distal end;
   a suction device connected to the distal end of the intake conduit;
   a power source connected to the suction device; and
   an exhaust conduit comprising a proximal end connected to the suction device and a distal end for connection to a sink drain.

4. The toilet odor removal system of claim 3, wherein the exhaust conduit further comprises a check valve.

5. The toilet odor removal system of claim 3, wherein the toilet seat has an upper surface and a lower surface, and wherein the intake conduit is attached to the lower surface of the toilet seat.

6. The toilet odor removal system of claim 3, wherein the toilet seat has an upper surface and a lower surface, and wherein the intake conduit is formed integral to the lower surface of the toilet seat.

7. The toilet odor removal system of claim 3, wherein the toilet further comprises a toilet seat lid, the toilet seat lid having a sensor thereon for detecting when a person is sitting on the toilet seat.

8. The toilet odor removal system of claim 7, wherein the sensor is disposed in communication with the suction device, such that the suction device turns on when the sensor senses a person sitting on the toilet seat.

9. The toilet odor removal system of claim 3, wherein the toilet further comprises a pressure sensor, the pressure sensor disposed in communication with the suction device, such that the suction device turns on when the pressure sensor senses a person sitting on the toilet.

10. A kit for removing toilet odors from an environment, the kit comprising:
    (a) an intake conduit for attachment to a toilet, 
    (b) a suction device disposed in connection to the intake conduit, and
    (c) an exhaust conduit disposed in connection to the suction device, the exhaust conduit configured for attachment to a sink trap.

11. The kit according to claim 10, wherein the exhaust conduit is further provided with a one-way check valve.

12. The kit according to claim 10, wherein the kit further comprises a power supply attached to the suction device.

13. The kit according to claim 10, wherein the kit further comprises a portion of sink drain connected to the exhaust conduit.

14. The kit according to claim 10, wherein the kit further comprises a toilet seat, and wherein the intake conduit is attached to the toilet seat.

15. The kit according to claim 10, wherein the kit further comprises a toilet seat, and wherein the intake conduit is formed integral to the toilet seat.

16. The kit according to claim 14, wherein the kit further comprises a toilet seat lid, the toilet seat lid having a sensor thereon for detecting when a person is sitting on the toilet seat.

17. The toilet odor removal system of claim 16, wherein the sensor is disposed in communication with the suction device, such that the suction device turns on when the sensor senses a person sitting on the toilet seat.

18. The toilet odor removal system of claim 17, wherein the kit further comprises a sub-toilet seat.

19. The toilet odor removal system of claim 14, wherein the kit further comprises a sub-toilet seat.

20. A toilet odor removal system, comprising:
    (a) an air intake conduit in the toilet bowl; and
    (b) an air exhaust conduit connected to a sink drain.

21. The toilet odor removal system of claim 1, wherein the distal end of the exhaust conduit is connected to a portion of sink drain pipe.
22. The toilet odor removal system of claim 3, wherein the system further comprises a toilet seat liner disposed between the toilet bowl rim and the toilet seat.

23. The kit according to claim 14, wherein the toilet seat is comprised of an upper surface and a lower surface, and wherein the lower surface of the toilet seat is provided with a toilet seat liner.

24. The toilet odor removal system of claim 6, wherein the intake conduit is further provided with angled slats.

25. The toilet odor removal system of claim 24, wherein the angled slats are angled such that the angled slats repel a liquid when the toilet seat is in an upright position.

26. The kit according to claim 15, wherein the intake conduit is provided with angled slats configured to repel a liquid when the toilet seat is in an upright position.

27. The kit according to claim 10, wherein the suction device is configured to evacuate approximately one to approximately two cubic feet of air per minute.

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