



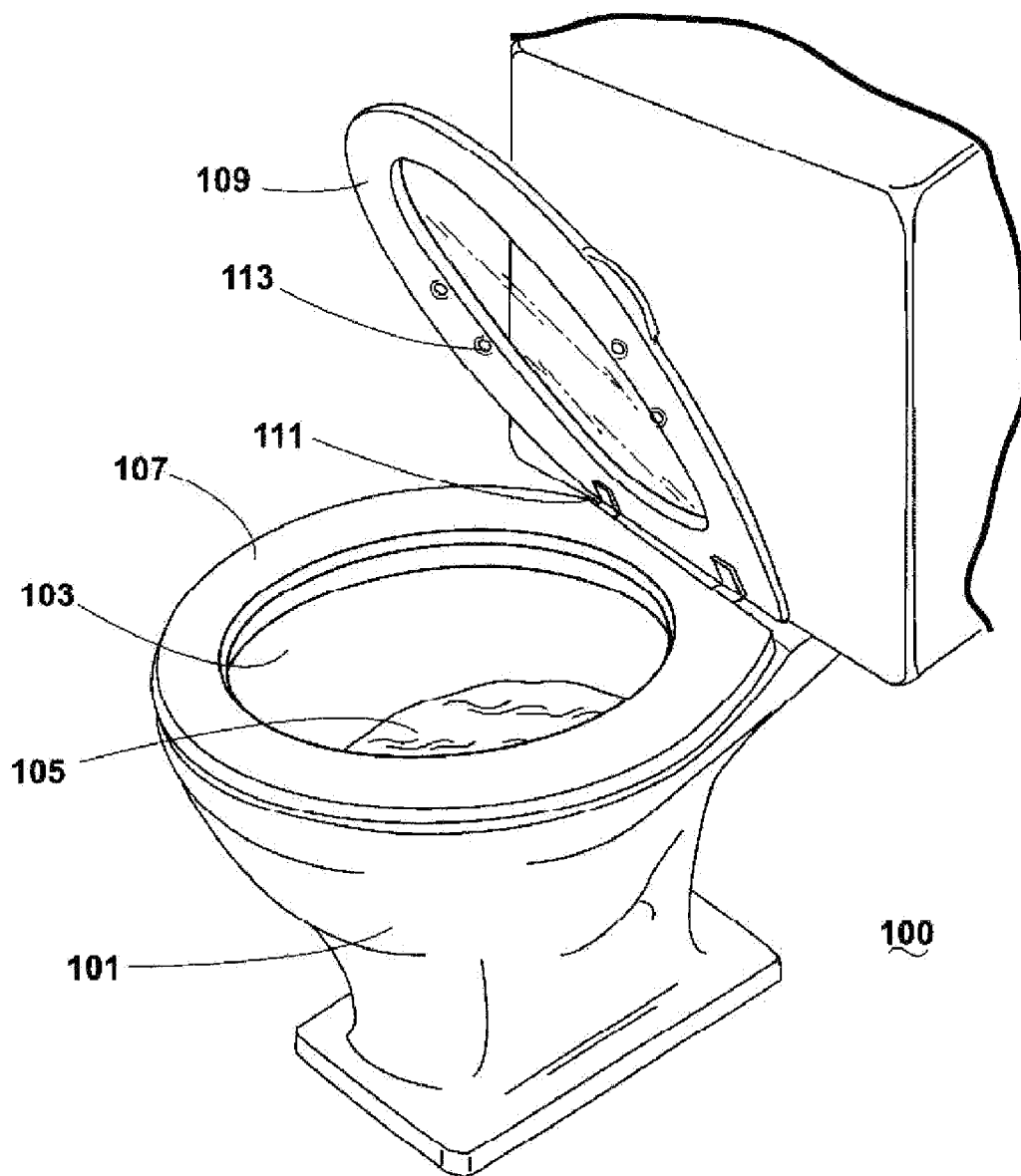
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(19) **United States**(12) **Patent Application Publication**
Griner(10) **Pub. No.: US 2007/0294821 A1**(43) **Pub. Date: Dec. 27, 2007**(54) **TOILET SEAT ASSEMBLY WITH LIGHTED WINDOW TOP LID**(51) **Int. Cl.**
A47K 17/00 (2006.01)(76) **Inventor: Onnie Griner, Lowell, MI (US)**(52) **U.S. Cl. 4/661**

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GRAND RAPIDS, MI 49503-2250(57) **ABSTRACT**

A toilet seat assembly (100) includes a top lid (109) having one or more illumination devices (207) such as light bulbs or light emitting diodes (LEDs) or the like. A pivotable seat (107) is positioned below the top lid and the illumination devices (207) project light through an opening in the seat. The top lid (109) includes a removable window which may include decorative elements enabling the toilet seat assembly (100) to have a pleasant appearance yet still permit users to see through the top lid (109) into the interior of the toilet bowl.

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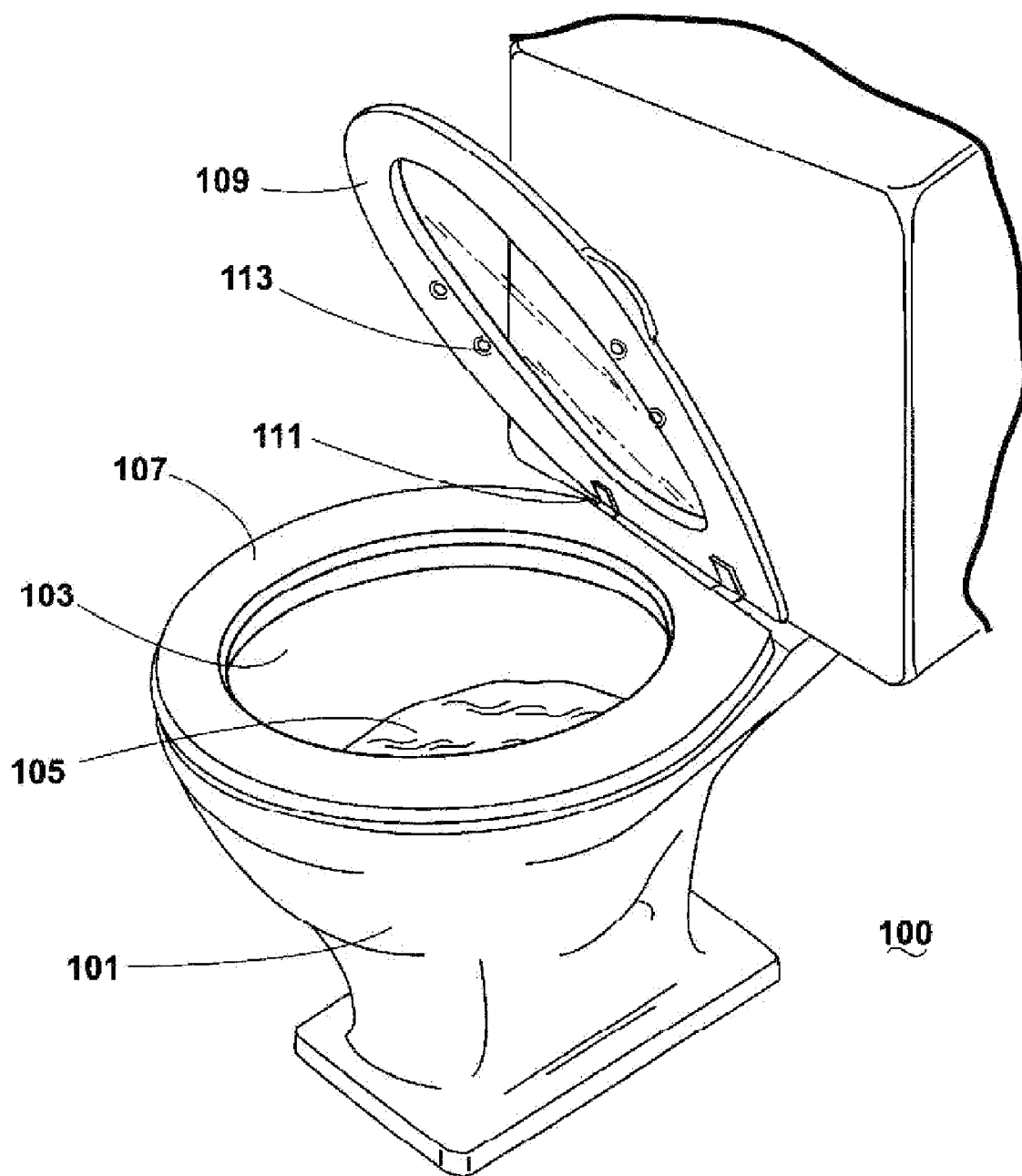


FIG. 1

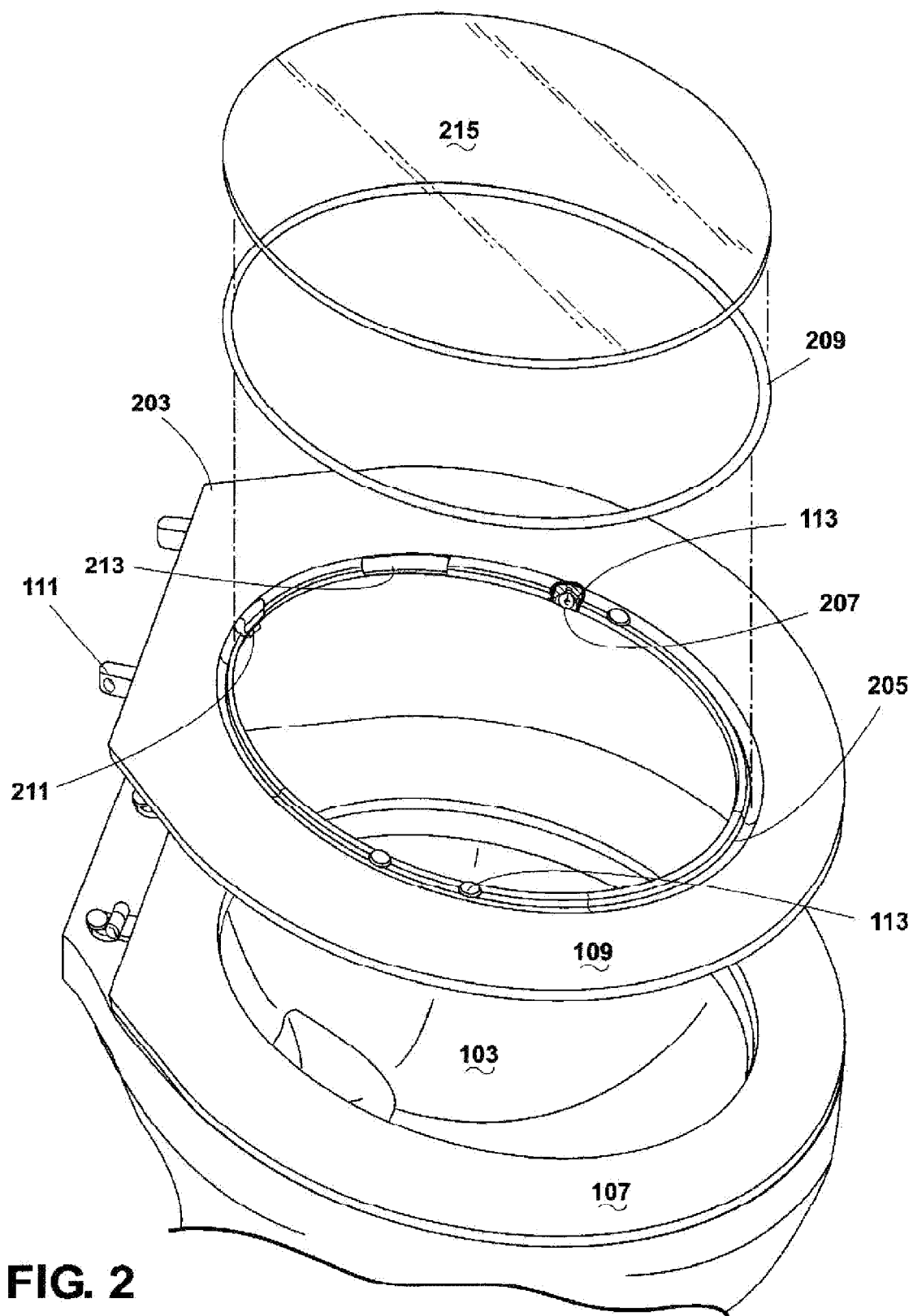
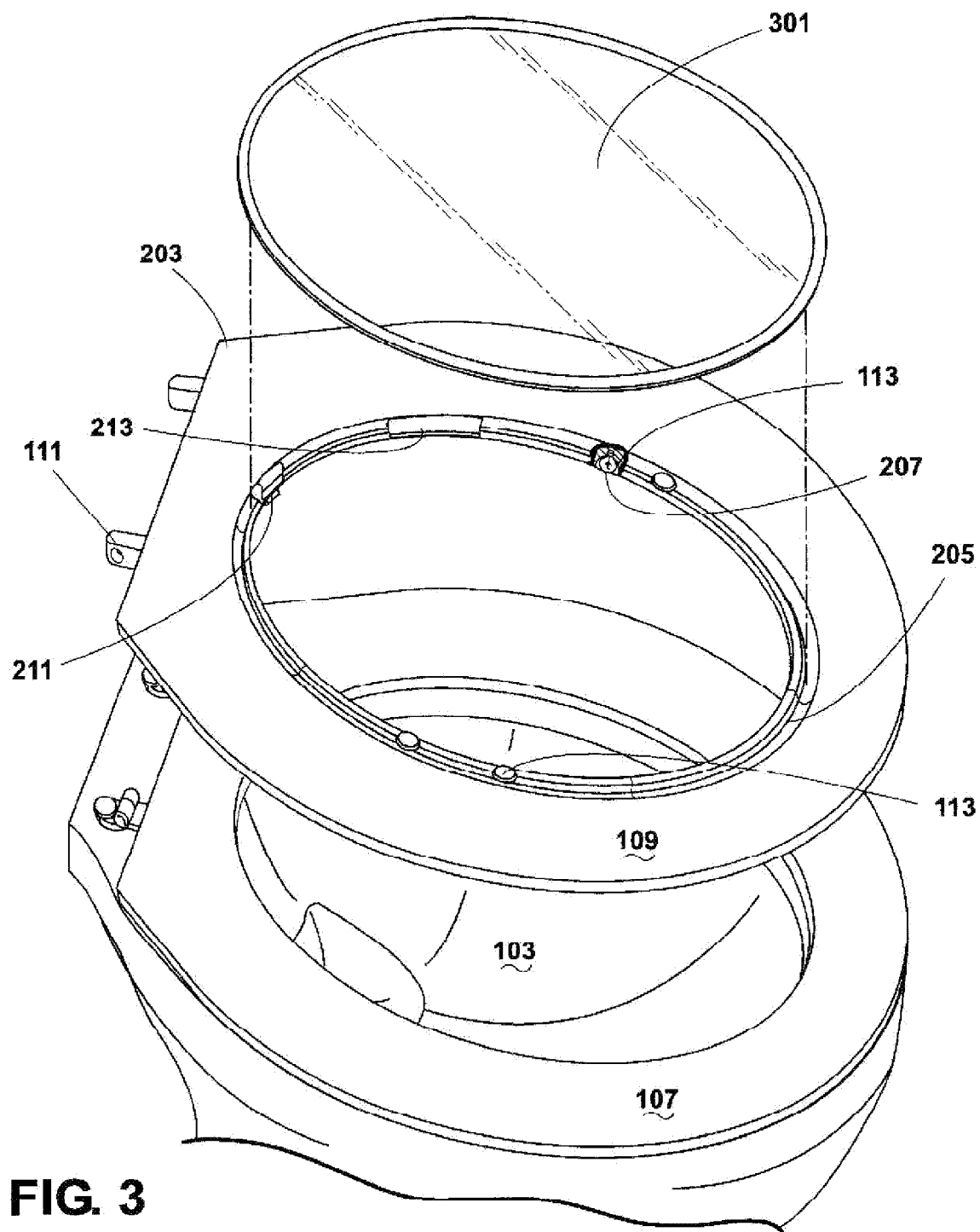


FIG. 2



TOILET SEAT ASSEMBLY WITH LIGHTED WINDOW TOP LID

FIELD OF THE INVENTION

[0001] The present invention relates generally to toilet seats and, more particularly, to toilet seats with integrated lighting.

BACKGROUND

[0002] Toilet seat covers are very well known in the art and have been used in various forms for literally hundreds of years in order to provide comfort and convenience to the user. One feature of a toilet seat that can be useful is integrated lighting. Many communities, particularly in warmer climates, have problems with rodents, snakes and other animals coming through the sewer and septic system to the toilet. In the case of snakes and other poisonous creatures, this can have serious consequences for those not looking into the toilet bowl before being seated on the toilet.

[0003] One solution to this problem is to use lights integrated into the toilet seat which work to illuminate the bowl area. Toilet seats that include various forms of lighting are well known in the art. U.S. Pat. No. 3,982,288 discloses a night light toilet seat which has lighting built into the toilet seat to aid a person in finding the toilet seat in a darkened bathroom. U.S. Pat. No. 5,263,209 discloses a night light for a toilet that uses an impermeable transparent tube positioned under an upper rim of the toilet bowl. U.S. Pat. No. 5,611,089 discloses a toilet lighting device that includes lighting within the toilet seat for illuminating the toilet bowl.

[0004] One problem associated with these types of lighting arrangements is that the lights are oriented on or near the toilet seat. This can be problematic since the lighting can become obstructed as the seating material ages and may be more difficult to clean. Moreover, the position of the lights within the toilet seat makes it difficult for light to be projected in a downward direction. Although the seat may appear illuminated to the user, due to its proximity to the bowl it does not function well to project light into the bowl. This can prevent the user from viewing objects in the interior of the bowl before use. Finally, in the prior art devices, lighting within the toilet seat, which includes both the bulbs and their power source, can be difficult to service.

[0005] Consequently, the need exists for a toilet seat assembly that is internally powered and which can project light down into the bowl for viewing the interior contents of the bowl in low-light conditions before use. Moreover, the toilet seat assembly should be decorative and easy to use, providing the user with utility as well as a pleasant appearance.

BRIEF DESCRIPTION OF THE FIGURES

[0006] The accompanying figures, where like reference numerals refer to identical or functionally similar elements throughout the separate views and which together with the detailed description below are incorporated in and form part of the specification, serve to further illustrate various embodiments and to explain various principles and advantages, all in accordance with the present invention.

[0007] FIG. 1 is a perspective view of a toilet seat assembly in accordance with an embodiment of the invention.

[0008] FIG. 2 is a top exploded view of the toilet seat top lid as in FIG. 1 with the cover removed.

[0009] FIG. 3 is a top exploded view of an alternative embodiment to that shown in FIG. 2.

[0010] Skilled artisans will appreciate that elements, in the figures are illustrated for simplicity and clarity and have not necessarily been drawn to scale. For example, the dimensions of some of the elements in the figures may be exaggerated relative to other elements to help to improve understanding of embodiments of the present invention.

DETAILED DESCRIPTION

[0011] Before describing in detail embodiments that are in accordance with the present invention, it should be observed that the embodiments reside primarily in combinations of method steps and apparatus components related to a toilet seat assembly with lighted cover. Accordingly, the apparatus components and method steps have been represented where appropriate by conventional symbols in the drawings, showing only those specific details that are pertinent to understanding the embodiments of the present invention so as not to obscure the disclosure with details that will be readily apparent to those of ordinary skill in the art having the benefit of the description herein.

[0012] In this document, relational terms such as first and second, top and bottom, and the like may be used solely to distinguish one entity or action from another entity or action without necessarily requiring or implying any actual such relationship or order between such entities or actions. The terms "comprises," "comprising," or any other variation thereof are intended to cover a non-exclusive inclusion, such that a process, method, article, or apparatus that comprises a list of elements does not include only those elements but may include other elements not expressly listed or inherent to such process, method, article, or apparatus. An element preceded by "comprises . . . a" does not, without more constraints, preclude the existence of additional identical elements in the process, method, article, or apparatus that comprises the element.

[0013] With regard to FIG. 1, a toilet 100 typically includes a base 101 having a fluted bowl 103 which holds a quantity of water 105 for flushing. A seat 107 is connected to a top lid 109 using one or more hinges 111 at the top of the bowl. One or more light apertures 113 are used to allow light to project into the bowl 103. The top lid 109 folds over the top of the seat 107 in order to provide a more attractive appearance and to prevent objects from falling into the toilet bowl 103.

[0014] FIG. 2 illustrates a top perspective view of the top lid 109 in accordance with an embodiment of the invention. The top lid 109 includes a top oval surface 201 which generally is formed in the shape of the toilet seat 107. The lid 109 includes a truncated rear edge 203 where one or more hinges 111 are mounted which fasten to the seat 107. The lid 109 includes a channel 205 formed around an inner portion of the top oval surface 201 which is used to mount one or more lighting devices 207. The lighting devices 207 are individually seated into respective light apertures 113 positioned at predetermined locations within the channel 205. The lighting devices 207 are positioned such that light projects through the light aperture 113 downwardly away from the channel 205. Those skilled in the art will recognize that the lighting devices may be traditional incandescent and/or fluorescent bulbs, or these lighting devices may be low-current, light-emitting diode (LED) types of illumination devices.

[0015] The channel 205 is provided with a cover 209 which frictionally engages within the channel 205 and may be fastened therein using screws or other mechanical devices (not shown). A switching device 211 and power source 213 are also positioned within the channel 205. The switching device may be a simple electrical switch or a switch which can be opened based on ambient light, switch movement and/or proximity to the switch. For example, when the top lid 109 is moved into an open position, the switching device 211 can detect this movement to turn off the lighting devices 207. Those skilled in the art will recognize that the lighting devices 207, switching device 211, and power source 213 form an electrical circuit. The power source may be alkaline, lithium, nickel-metal hydride or any other form of a long-lasting, substantially low-voltage current source. When the power source 213 is electrically connected with the lighting devices 207, the lighting devices work to project one or more beams of light into the toilet bowl 103 for illuminating the interior of the bowl 103 before use.

[0016] Finally, an inner window 215 of the top lid 109 is generally clear or opaque, enabling the user to see into the interior of the bowl 103 when illuminated. The inner window may include decorative elements or the like for providing a pleasing appearance to the top lid 109 when in its closed position. These decorative elements may be etchings, embossing, labels or other means which enable the top lid 109 to have an attractive appearance, while still permitting users to look through the artwork for viewing the interior of the toilet bowl 103.

[0017] FIG. 3 illustrates an alternative embodiment to that shown in FIG. 2, where the cover 209 and inner window 215 are combined into a single element. The inner window 301 can be easily removed from with the channel 205: within the top lid for accessing the lighting devices 207 or their power source. All of the numeral designations from FIG. 2 are carried forward in FIG. 3.

[0018] This solution of using a lighted toilet seat lid provided by the present invention is not eccentric or impractical. Providing lighting into the toilet seat operates to the illuminate the bowl area, aiding those with poor vision and allowing others to see potentially dangerous animals that may be in the bowl. The invention operates such that when the top lid of the toilet seat is in a "down" position, a switch is used to turn off the internal lighting within the lid. All lighting is positioned away from the water and is surrounded by substantially clear plastic allowing the user a view into the bowl. Moreover, the lid and seat are joined such that animals or other vermin inside the toilet bowl cannot escape when the lid and seat are in a closed position. Finally, the invention includes a see-through replaceable window that may be approximately 5 inches by 7 inches in shape that includes fanciful designs or patterns to complement the décor of the bathroom. The toilet seat may be manufactured from a plastic vinyl material or the like which may include soft padding or cushioning with appropriate attachment hardware.

[0019] In the foregoing specification, specific embodiments of the present invention have been described. However, one of ordinary skill in the art appreciates that various modifications and changes can be made without departing from the scope of the present invention as set forth in the claims below. Accordingly, the specification and figures are to be regarded in an illustrative rather than a restrictive sense, and all such modifications are intended to be included

within the scope of present invention. The benefits, advantages, solutions to problems, and any element(s) that may cause any benefit, advantage, or solution to occur or become more pronounced are not to be construed as a critical, required, or essential features or elements of any or all the claims. The invention is defined solely by the appended claims including any amendments made during the pendency of this application and all equivalents of those claims as issued.

I claim:

1. A toilet seat assembly comprising:
 - a top lid having at least one illuminating device;
 - a pivotable seat positioned below the top lid; and
 - wherein the at least one illuminating device projects light through an opening in the seat.
2. A toilet seat assembly as in claim 1, wherein the top lid includes a channel for fastening the at least one illuminating device.
3. A toilet seat assembly as in claim 2, wherein the channel includes a removable cover.
4. A toilet seat assembly as in claim 1, wherein a removable window is fastened within the top lid for viewing into a toilet bowl.
5. A toilet seat assembly as in claim 1, wherein an electrical switch is used to control the function of the at least one illuminating device.
6. A toilet seat assembly as in claim 5, wherein the electrical switch is opened when ambient light conditions are at a predetermined level.
7. A toilet seat assembly as in claim 5, wherein the electrical switch is opened when the top lid is moved to an open position above the pivotable seat.
8. A toilet seat assembly comprising:
 - a top lid having at least one light positioned within a channel for projecting light away from the top lid,
 - a toilet seat positioned below the top lid such that light from the at least one light projects into a hole within the seat; and
 - wherein the at least one light is controlled by an electrical switch positioned within the channel for controlling operation of the at least one light.
9. A toilet seat assembly as in claim 8, wherein a removable cover is used to access the channel.
10. A toilet seat assembly as in claim 8, wherein a power source is included within the channel for providing power to the at least one light.
11. A toilet seat assembly as in claim 8, wherein a removable window is positioned within the top lid for viewing into a toilet bowl.
12. A toilet seat assembly as in claim 8, wherein the electrical switch is opened based on ambient light.
13. A toilet seat assembly as in claim 8, wherein the electrical switch is opened based upon movement of the top lid.
14. A method for providing illumination using a toilet seat assembly comprising the steps of:
 - positioning at least one light source into the top lid of a toilet seat assembly;
 - projecting the light away from the top lid such that it passes through the hole in a toilet seat; and
 - controlling the at least one light source using an electrical switch located within the top lid.
15. A method for providing illumination using a toilet seat assembly as in claim 14, further comprising the step of:

configuring a channel within the top lid covered by a removable cover for orienting the at least one light source within an aperture.

16. A method for providing illumination using a toilet seat assembly as in claim **14**, further comprising the step of: positioning a removable window within the top lid for viewing into a toilet bowl.

17. A method for providing illumination using a toilet seat assembly as in claim **15**, further comprising the step of: positioning an electrical switch and power source with the channel.

18. A method for providing illumination using a toilet seat assembly as in claim **14**, further comprising the step of: opening the electrical switch based on ambient light.

19. A method for providing illumination using a toilet seat assembly as in claim **14**, further comprising the step of: opening the electrical switch based on the position of the top lid in relation to the toilet seat.

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