DISPOSAL UNIT FOR CLOTH ARTICLES AND THE LIKE

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This invention relates to new and useful improvements in disposal units for cloth articles and the like.

An object of this invention is to provide a new and improved disposal unit for the destruction of cloth articles, paper articles, and the like.

An important object of this invention is to provide a new and improved disposal unit for cloth articles and the like, wherein the articles are adapted to be burned in the unit and then the remains washed into the usual sewer line.

Another object of this invention is to provide a new and improved disposal unit for cloth articles and the like which is adapted to be used in combination with the conventional home commodes or which can be used as a separate wall unit.

The construction designed to carry out the invention will be hereinafter described together with other features thereof.

The invention will be more readily understood from the reading of the following specification and by reference to the accompanying drawings forming a part thereof, wherein an example of the invention is shown and wherein:

Figure 1 is a view, partly in elevation and partly in section, illustrating one embodiment of this invention.

Figure 2 is a horizontal sectional view taken on line 2—2 of Figure 1.

Figure 3 is a sectional view taken on line 3—3 of Figure 1.

Figure 4 is a view, partly in elevation and partly in section, illustrating another modification of the disposal unit of this invention.

Figure 5 is a horizontal sectional view taken on line 5—5 of Figure 4.

In the drawings, the letter A designates generally the preferred disposal unit of this invention in combination with the usual fixed home commode C (Figures 1–3). The usual home commode C has, of course, a toilet bowl 10 mounted on a base 11 which is supported on the floor in the usual manner and a discharging opening 12 is formed in the base 11 for discharge of the waste and water from the toilet bowl to the drain or sewer line (not shown). Behind the conventional toilet seat 14, the flushing water tank 15 is provided in the usual manner for discharging flushing water therefrom through a flushing passage 16 to the toilet bowl 10. Such flushing is effected upon the raising of the conventional valve 17 within the flushing water compartment 15 and such opening or raising of the valve 17 is effected by the usual toilet handle (not shown) on the outside of the tank 15. The tank 15 has four sides which include the front side 15a and the rear side 15b which support a removable cover 20.

The rear wall 15b forms the forward wall of the disposal unit tank 25 which is positioned behind the flushing water tank 15 and is of substantially the same size. The wall 15b and the other walls 25a, 25b and 25c form the complete sides of the disposal unit tank 25. The top of the tank 25 is covered by a cover plate 26 which is hinged at 27 by any suitable hinge means, so that by lifting up on the knob or handle 28, the cover 26 is pivoted upwardly and rearwardly to expose the upper end of the tank 25. In some instances, the hinge 27 may include a spring (not shown) which serves to urge the cover 26 upwardly and rearwardly and in such case a latch (not shown) would be provided to prevent the upward swinging of the cover 26 until such time as it is desired to open such cover 26.

Within the tank 25, there are disposed support members 30 which extend longitudinally of the tank 25 and which are spaced from each other to provide a longitudinal opening 31 therebetween which extends the complete distance between the ends 25b and 25c of the tank 25 (Figure 2). Gas burners 32 are positioned above the support members or plates 30 and are preferably positioned therein so that such burners 32 are supported within the tank 25. Each of the burners 32 is essentially a hollow gas chamber having small openings 32a along the surfaces of the burners 32 which face each other so that the gas flame from the burners is directed into the space between the twd-burners 32. The connection of the gas burners 32 can be made in many ways, but, as shown in the drawings, the burners 32 are conncected by a common manifold 33 which is fed gas from an inlet pipe 34 having a control valve 35 thereon. Such control valve 35 is positioned outside of the tank 25 so that it may be operated for controlling the flow of gas to the burners 32 conveniently. A pilot line 36 is connected to the gas lines 34, and such pilot line 36 extends beneath the rear burner 32 and a flame is constantly burning there so that when the valve 35 is open the burners 32 are automatically ignited to create an area of flame between the burners 32. Air holes 38 are provided in the walls 25a, 25b and 25c of the tank 25 to supply the necessary air for the burning of the gas from the burners 32.

A wire basket 40 is positioned between the burners 32 and is removable positioned on the support plates 31 at their inner edges so that substantially the entire lower portion or bottom of the wire basket 40 is completely free of any support and is open so that any particles which are small enough to pass through the openings in the wire mesh of the basket 40 drop through the space 31 between the support members 30. The wire basket 40 preferably has heat-insulated handles 41 at each end for the removal of the basket from the tank 25. It will be appreciated, of course, that the material of the basket 40 much be fire-resistant and preferably is of a metal such as stainless steel.

The area around the burners 32 is insulated against heat by layers of heat insulation 43a, 43b, 43c and 43d which may be glass fiber, asbestos and the like. A removable top member 44 is provided with a layer of heat insulation 45 attached thereto so that, after the cover 26 has been pivoted to an open position, such member 44 is removable, and thereafter the wire basket 40 is also readily removable from its position between the burners 32. It will be appreciated, of course, that, since the layer of insulation 45 is secured to the top member 44, both are removable together. The heat fences, smoke and other gaseous matter are exhausted through a vent pipe 50 which extends from the upper portion of the tank 25 below the top section 44 and, preferably, such vent pipe 50 extends upwardly above the roof of the building or house in which the unit A is located, so as to vent the gaseous matter to the atmosphere. In some cases it may be desirable to provide a conventional exhaust fan (not shown) in conjunction with the vent 50 to facilitate the exhaust of smoke and other gases from the tank 25.

Below the tank 25 a waste receiving chamber 52 is
formed which is adapted to receive the burned or waste matter which falls from the wire basket 40. The waste receiving chamber 52 is in fluid communication with the discharge line 12 from the toilet bowl 10 by means of a liquid or odor trap 53 which extends from the lower end of the chamber 52 to the pipe 12. The flushing line 54 has an auxiliary flushing line 55 formed therewith which connects with an annular fluid distribution chamber 56 having ports 57 which discharge the flushing fluid into the waste receiving chamber 52. Thus, each time that the commode C is flushed with the flushing water in the flushing water tank 15, the waste receiving chamber 52 of the disposal unit A is also flushed, and the contents thereof are washed into the discharge line 12 to the drain or sewer line. The normal water level in the chamber 52 is the same as in the commode C and is indicated in the drawings by the dotted line 52a. However, should the water level rise due to defective draining or flow into the sewer line, an overflow pipe 58 is provided in the tank 25 so that the water will not pass upwardly into the burners section of the disposal unit. It will be noted that the air holes 38 are above the overflow pipe 58 so that overflowing water will not flow into the room, but, of course, the location of the air holes 38 may be varied for different burner conditions.

In the use or operation of the disposal unit described above and illustrated in Figures 1–3, the gas valve 35 is normally turned off so that the burners 52 are not operating, but the pilot burner line 56 is always burning so that the burners 52 can be automatically ignited by the turning on of the valve 35. In some instances, where the unit is in constant use, the valve 35 can be left open continuously and the burners 32 are therefore continuously burning. Whether the burners are operating or not, the cover 26 is opened by lifting upwardly on the knob 28, or by releasing the latch if a spring is provided at the hinge 27, and then the top member 44 is raised from the tank 25. The wire basket 40 is then exposed and the cloth articles to be disposed of, such as cloth bandages, sanitary napkins and other items of cloth or a similar material such as paper are then dropped into the wire basket 40. The top member 44 is then placed back in position, and the cover 26 is closed so that during the burning of the cloth articles, the smoke and other disagreeable odors which might occur because of the organic material present on the cloth articles are prevented from escaping into the room and are directed upwardly through the vent pipe 50. The ashes from the burned material fall through the openings 73 in the front plate 125c and into the waste receiving chamber 52. The heat developed by the burners 32 is so intense and so concentrated with respect to the articles being burned that it takes only a very short time to completely dispose of such articles. When the cloth articles have been completely burned and the waste such as ashes has dropped into the chamber 52, the flushing water tank 15 is operated to open the valve 17 to direct flushing water from the tank 15 through the passage 55 to thereby flush the waste material from the chamber 52 through the odor trap 53 and into the discharge line 12. Such flushing of the chamber 52 can be coincident with the flushing of the commode C, if desired.

In Figures 4 and 5, a modification of the disposal unit illustrated in Figures 1–3 is shown, and such modified unit is designated generally by the letter A'. The modified disposal unit A' has a tank 125 which is formed by four side plates, 125a, 125b, 125c, and 125d, with the front plate 125c being flush with the wall of a house or other building, whereby the entire unit is substantially enclosed within the wall of the building. The front plate 125c, or a portion thereof, is removable and bolts 65 are employed to retain the front plate 125c in its normal position (Figure 5). Of course, other securing means could be used and in some cases the front plate 125c, or a portion thereof, could be pivotally mounted in any known manner to serve as a door.

Two support members or plates 130 are disposed inside the unit A' with a space 131 therebetween. A burner assembly 132, consisting of substantially U-shape, is supported by the support members 130 and is positioned with the gas openings 132a directed inwardly toward the longitudinal opening 131 between the support members 130. A wire basket 140 rests upon the inner edges of the support members 130, but substantially all of the bottom or lower portion of the basket 140 is disposed over the longitudinal space 131 so that any sufficient small size may fall through the bottom openings in the basket 140. Handles 141 of insulated material are positioned at the top of the basket 140 for removing the basket from its support on the support members 130, which can be effected after the front plate 125c is removed from its normal bolted position (Figure 5). The gas is fed to the burners 132 from the gas line 134, which has a valve 135 therewith to control the gas flow. A pilot line 136 is provided so that the pilot gas line can be constantly burning, and, therefore, the burners 132 can be automatically ignited when it is desired to do so by simply opening the valve 135. Air holes 138 are provided for the admission of air into the unit for the burning of the gas from the burners 132. The area around the burners 132 is insulated with any desired type of heat insulating layers 143a, 143b, 143c, and 143d formed of glass fiber, asbestos and the like. The insulating layers 143 are, of course, removable with the removable front plate 125c.

At the upper end of the disposal unit A', a door 66 is mounted by hinges 67 to the front plate 125c. The door 66 preferably has a handle or knob 66a thereon whereby the door 66 may be pulled outwardly and thus swing downwardly about its hinges 67 to provide an opening into the inside of the unit A'. Such opening communicates with a downwardly extending chute 68 which has a flared open lower end 68a disposed directly above the basket 140. Thus, the cloth articles which are to be disposed of in the unit A' are dropped into the basket by opening the door 66 and dropping such articles into the chute 68. A vent 150 for the heat fumes, smoke and other gaseous matter is provided at the top or rear of the unit A'; such vent ordinarily extends upwardly through the roof of a house or other building.

At the lower end of the unit A', a waste receiving chamber 150 is provided into which fall the ashes and other solid particles from the burning or combustion of the cloth articles in the basket 140. Such ashes and other material are washed into a drain or sewer line (not shown) which is connected to the odor trap 153. By opening the valve 70 on a water inlet line 71, water or other flushing fluid is directed to an annular fluid distribution chamber 156 for discharge therethrough through ports or openings 157 into the waste chamber 152, whereby the chamber 152 is thoroughly flushed and the waste is discharged through the odor trap 153 into the drain or sewer line. It will be noted that the lower ends of the walls of the unit A' are actually supported on the floor F, but the odor trap 153 is positioned below the floor for connection with the usual sewer line in a house or building.

In the operation or use of the modified disposal unit A' which is particularly suited for positioning in a wall of a building, the pilot light 136 is constantly burning and the articles of cloth or any similar material are dropped into the door 66 of the unit A' after the door 66 is opened. The articles or articles are guided by the chute 68 into the wire basket 140 and then the gas is turned on by opening the valve 135 so that the flame is automatically ignited by reason of the pilot 136 to effect a rapid burning of the cloth articles and the like. As the articles burn, the fumes, smoke, and other gaseous matter pass upwardly
through the vent pipe 150. The ashes and other waste material from the burning of the articles and other material in the basket 140, fall into the waste receiving chamber 152 and are flushed from same by opening the valve 70, whereby the water is sprayed from the ports or openings 157 into the chamber 152. The washing or flushing action of the water from the spray ports 157 washes the waste and the flushing water through the odor trap 153 into the sewer line or drain (not shown). After the burning of the particular material has been effected, the valves 135 and 70 can be then turned off, although it will be evident that in instances where such a unit is in constant use, the valves 135 and 70 may remain on at all times.

When it is desired to remove the basket 140 for any reason, the front wall 125c, or a portion thereof, is removed by releasing or removing the bolts 65 so that the basket 140 can then be pulled outwardly from the burners 132.

It is believed evident from the foregoing that a new and improved disposal unit for cloth articles and the like has been provided which is adapted to be used in combination with the usual home commode (Figures 1-3) or as a separate wall unit (Figures 4 and 5) wherein the cloth articles and the like which are destroyed are also removed by a fluid action to a drain or a sewer line. Although the invention has been illustrated with a gas burner, it will be evident that other types of burners or destroying devices could be utilized instead. It is also believed apparent that although the baskets 40 and 140 have been described as being formed of wire, they could be formed of sheet material having openings or perforations, so long as the flame or other destruction medium can contact the articles to be destroyed and the ashen or other waste can drop therefrom after the destruction.

The foregoing disclosure and discussion of the invention is illustrative and explanatory thereof and various changes in the size, shape and materials, as well as in details of the illustrated construction may be made, within the scope of the appended claims, without departing from the spirit of this invention.

What is claimed is:

1. In combination with a commode having a toilet bowl, a flushing liquid tank for supplying flushing liquid to said bowl, and a discharge line from said toilet bowl, a disposal unit including a destruction chamber disposed adjacent to the flushing liquid tank, a holder means for retaining cloth articles and the like in said chamber, destruction means in said chamber comprising a gas burner adapted to burn said cloth articles within said holder means, a waste receiving chamber below said holder means for receiving from said holder means the remains of said cloth articles after destruction, means connecting said waste receiving chamber to said discharge line, and means connecting said waste receiving chamber and said flushing liquid tank for directing a flushing fluid into the waste receiving chamber to wash the waste from said waste receiving chamber into said discharge line.

2. The structure set forth in claim 1, wherein said destruction means include a pair of burners disposed substantially parallel to each other, and wherein said holder means is a basket having an open top and disposed between said pair of parallel burners, said burners extending for substantially the full height of said basket whereby the gas flame from said burners is directed into said basket from both sides thereof to rapidly burn the cloth articles in the basket.

3. The structure set forth in claim 1, including a screen in said waste receiving chamber for receiving all of the waste falling from the destruction chamber, and an annular spray means in said waste receiving chamber disposed above said screen and connected with said flushing liquid tank for washing all of the waste on the screen into said discharge line.

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