March 16, 1954 R. W. POTTS 2,671,906

LINER FOR SANITARY CLOSETS

Filed Nov. 15, 1952 2 Sheets-Sheet 1

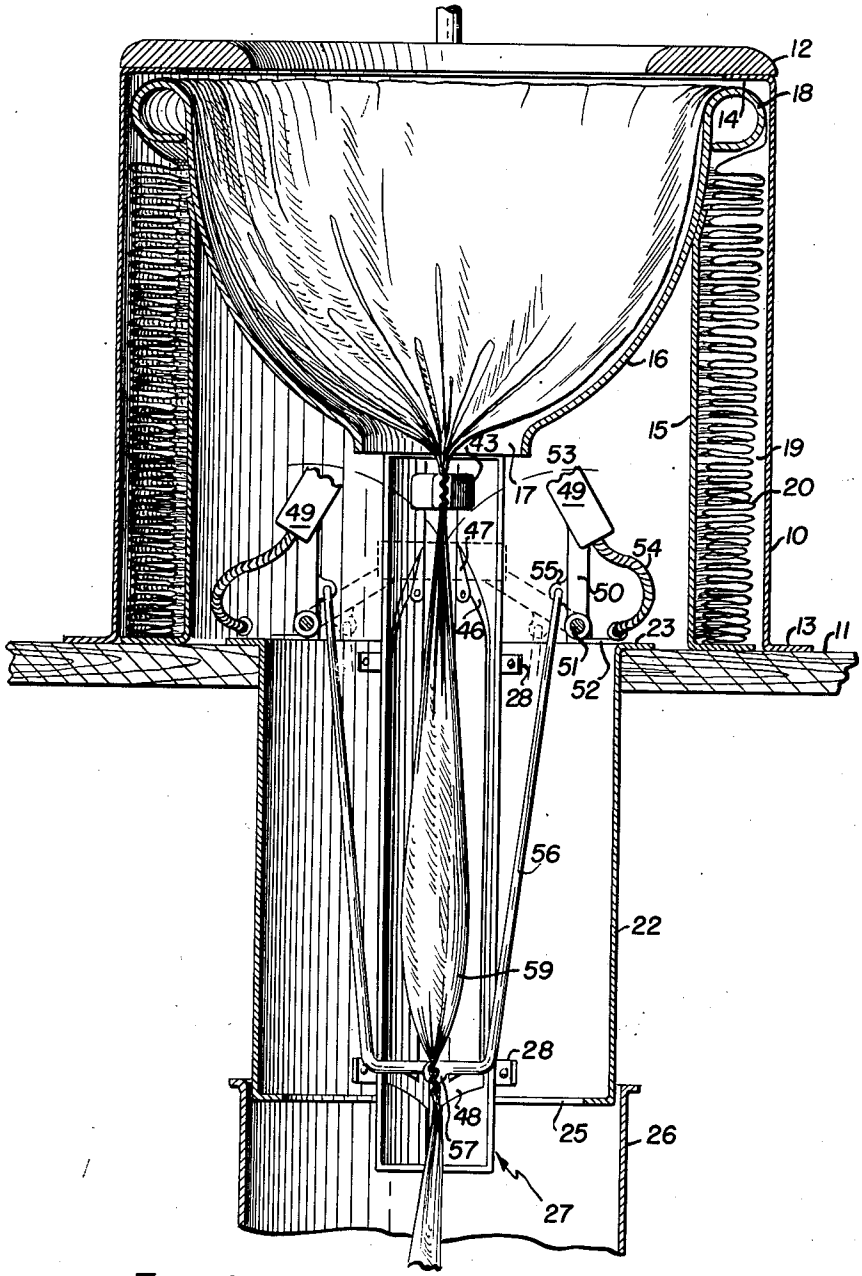

FIG. 1.

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Filed Nov. 15, 1952 2 Sheets-Sheet 2

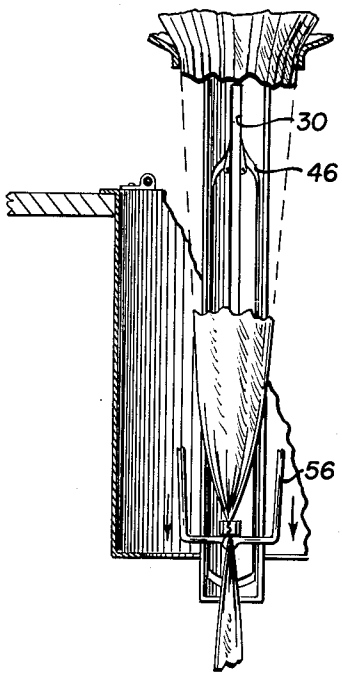

FIG. 3.

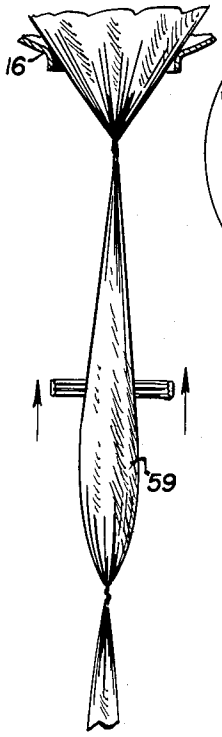

FIG. 4.

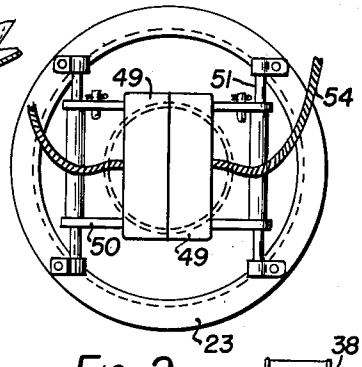

FIG. 2.

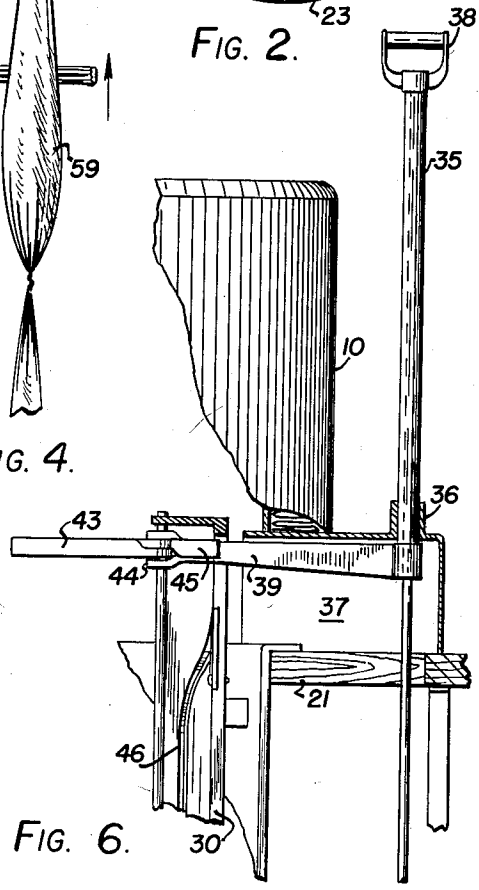

FIG. 6.

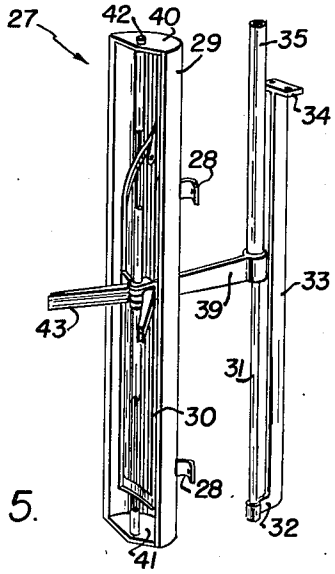

FIG. 5.

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LINER FOR SANITARY CLOSETS

Robert W. Potts, Fort Worth, Tex.

Application November 15, 1952, Serial No. 320,643

5 Claims. (Cl. 4—111)

1

This invention relates to dry sanitary closets for use in aircraft, trains and other moving vehicles. Additionally, the invention may be advantageously used in camps, house trailers and the like where water or chemical supplies are not convenient or are not readily available.

An object of the invention is to provide a means for sacking and sealing waste material in dry sanitary closets.

A particular object of the invention is to provide a lightweight dry closet for aircraft, and one which requires very little space for its installation and operation.

An additional object of the invention is to provide a dry sanitary closet which will eliminate obnoxious odors, and at the same time provide a convenient and sanitary means for disposing of waste materials.

An additional object of the invention is to provide, in a dry closet of the class described, a simple operation for effectively sealing and disposing the waste material, and at the same time preparing the bowl of the closet for the next user.

These and other objects will become apparent from the following description and the accompanying drawings of an exemplary form of the invention, wherein:

Figure 1 is a vertical sectional view of a dry closet embodying the features of the invention.

Figure 2 is a plan view of the lower housing showing the film sealing jaws in their closed position.

Figure 3 is a broken vertical sectional view showing the film moving jaws in a lower position as the same draws the film containing the waste material downwardly for subsequent disposal.

Figure 4 is a view similar to Figure 3, but showing a position of the film moving jaws during their upward movement.

Figure 5 is a perspective view of the film operating mechanism, including the last referred to jaws.

Figure 6 is a broken elevation and sectional view showing the installation of the mechanism illustrated in Figure 5.

The exemplary form of the invention shown includes a tubular upper housing 10 mounted on a floor 11 and a toilet seat 12 mounted on its upper end. The lower end of the housing 10 includes an outwardly directed flange 13 which may be detachably secured to the floor 11; however, in some installations it may be desirable to permanently secure the referred to flange.

2

The upper end of the housing 10 is inwardly flanged as at 14 for supporting the seat 12.

Within the upper housing 10 there is a tubular inner wall 15, spaced from the inner surface of said housing, and which wall supports a bowl 16 of formed sheet material. The bowl 16, converges at its lower end to provide a relatively small opening 17, whereas its upper end is outwardly formed into a rolled flange 18. Within the annular space 19 between the upper housing 10 and the inner wall 15 there is a tubular film 20 of plastic material, such as cellulose, vinyl, acetate or the like. Treated waterproof paper may be used, but preferably the same should include some adhesive substance for sealing purposes hereinafter referred to. As shown in Figure 1 a considerable length of the film tubing 20 may be received within the annulus 19 by reversing the material on itself in the manner of accordion pleats. The upper end of the tubular film 20 is positioned around and over the rolled flange 18 of the bowl 16, lining the latter, and thence extending downwardly through the bowl opening 17. An opening 21 is provided in the floor 11 for receiving and supporting a lower housing 22, the upper end of which is outwardly flanged as at 23 for engaging the floor surface. The lower end of the lower housing is open, as at 25, and extends into the upper end of a receptacle 26. If preferred, an incinerator may be employed instead of the receptacle 26, and reference is made to my copending application Serial Number 314,468, filed October 13, 1952, illustrating and describing an incinerator of the type referred to.

A film moving mechanism 27, illustrated in detail in Figures 5 and 6, is mounted within the lower housing 22 by means of brackets 28, the upper end of which mechanism is near the lower end of the bowl 16. The mechanism 27 includes a vertical arcuate member 29 having a vertical slot 30 therethrough, best illustrated in Figures 3 and 6, extending nearly its complete length. Parallel with the vertical arcuate member 29 there is a guide rod 31 mounted at its lower end on a laterally extending arm 32 of a depending bracket 33, the latter being provided with a foot 34 for attachment to the lower surface of the floor 11. A tubular member 35 is slidably mounted on the guide rod 31 and extends upwardly through a collar 36 in a box-like extension 37 on the side of the upper housing 10. The upper end of the tubular member 35 is provided with a handle 38, whereas the lower end of the member is provided with a laterally extending arm

39 which is slidably received within and through the vertical slot 30 in the vertical arcuate member 29 of the film moving mechanism.

The upper and lower ends of the vertical arcuate member are provided with a horizontal plates 40 and 41 for supporting a vertical rod 42 on which vertically slidable film moving jaws 43 are mounted. The inner end of the arm 39 secured to the vertically movable tubular member 35, is provided with a yoke 44 having openings (not shown) therethrough for receiving the last described rod 42. The inner ends of the jaws 43 are received within the yoke 44, and which inner ends include angularly extending followers 45 for engaging grooves 46 in the inner surface of the vertical arcuate member 29 and on opposite sides of the vertical slot 30. The jaws 43 are spring loaded (not shown) to normally move the same away from each other. However, the upper ends of the grooves 46 are shaped so as to close the jaws 43 when the same reach the upper end of the latter and to spread apart when they reach their lowermost position. During their downward movement the followers 45 are engaged in the vertical slot 30. The last described operation is carried out by means of dogs 47 pivotally mounted in the upper ends of the grooves 46 where the same join the slot 30. The dogs 47 are spring loaded to normally close the upper ends of the grooves 46. The lower ends of the grooves 46 converge, as at 48, and whereby the spring loaded jaws 43 will cause the followers to expand when the latter reach the lower end of the slot 30, thus releasing the film 20 drawn downwardly by the jaws 43.

Sealing jaws are mounted on the upper flange of the lower housing 22 by means of pairs of pivoted arms 50, mounted on rods 51, which in turn are supported at their ends by means of bearings 52. The opposing surfaces of the sealing jaws 49 are provided with interfitting longitudinal grooves 53, and which jaws may be electrically heated as shown by means of wiring connections 54. Ears 55 are provided on the arms 50 adjacent the film moving mechanism 27 for pivotally engaging the upper ends of rods 56, the lower ends of which are angular and pivotally connected with each other, as at 57, near the converging portions 48 of the described grooves 46. Thus, when the film moving jaws 43 move downwardly they contact the joined ends of the last described rods 56, thereby causing the sealing jaws 49 to move inwardly, as shown by means of dotted lines in Figure 1, and close and seal the film 20.

In operation, the film 20 is arranged as shown in Figure 1 and the handle 38 is initially operated to seal an area of the film on itself by means of the sealing jaws 49. After waste material has been deposited in the film 20 lining the bowl 16, the handle 38 is pushed downwardly causing the film moving jaws 43 to engage the film and draw the same downwardly, and at which time the waste material is secured within a bag 59 thereby formed of said film. When the film moving jaws 43 contact the joined portion of the rods 56 the sealing jaws are brought together for sealing the upper end of the bag thus formed. The length of material 20 enclosing the bags 59 are progressively received within the receptacle 26 or the incinerator, as the case may be.

It is to be understood that the invention herein shown and described may additionally be used for other purposes, such as for disposal of garbage and for other purposes. The invention is not limited to the construction herein shown and described, but may be made in many ways within the scope of the appended claims. As set forth in the appended claims, the invention is directed to the liner 20 and its arrangement around, over and through the bowl, since various film moving means may be provided other than the specific film moving construction herein shown and described.

What is claimed is:

1. In a sanitary closet, a bowl having an opening through the bottom thereof, a supply of tubular film around said bowl and extending upwardly over the periphery thereof and downwardly through said opening, and means drawing said film downwardly through said bowl.

2. In a sanitary closet as defined in claim 1, the construction wherein said means drawing said film downwardly through said bowl is comprised of a pair of vertically movable jaws adapted to engage the film near said opening and to release said film when said jaws are remote from said opening.

3. In a sanitary closet as defined in claim 1, the combination of a pair of sealing jaws mounted beneath said bowl and on opposite sides of said film, and means moving said sealing jaws inwardly and outwardly relative to each other.

4. In a sanitary closet as defined in claim 1, the construction wherein the length of said tubular film around said bowl is vertically arranged in the manner of accordion pleats.

5. A sanitary closet comprising a housing, a bowl having an opening in the bottom thereof mounted within said housing and spaced from the inner wall thereof, a supply of tubular film within said housing and around said bowl, said film extending upwardly over the periphery of said bowl and downwardly through said opening, and means drawing said film downwardly through said bowl.

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