

全自动免冲洗厕具

技术领域

本发明涉及一种便器,特别是涉及一种不用水冲洗的干式密封厕具。

背景技术

随着环境保护及人类回归自然的要求,人们已越来越认识到近百年来体现现代文明的抽水马桶存在着诸多弊端。为此曾出现了各种发明,例如 PCT/CN96/00009 就提出一种无需用水冲洗的座便器组件,虽然该发明具有防止交叉传染,方便卫生的特点,但其传动部分为电动控制,在使用者不熟悉便器的结构特点的情况下,容易发生误动作,而且不适合于无电无水地区,如海滨浴场使用。

发明内容

本发明的目的是提供靠人体重力控制的干式密封厕具。

用于实现本发明目的的一个解决方案为:一种全自动免冲洗厕具,包括一个箱体;安装在箱体上的成形腔;设置在成形腔上的座圈;设置在箱体外周的塑料袋护罩;安装在箱体中的用于控制成形腔与在箱体下面安装的盛便箱是否连通的牵引塑料袋的牵引开合机构;所说箱体安装在一踏板上,所说踏板的后端与底座铰接,所说踏板的前端为摆动端,在其端部和底座之间安装一个压簧,在踏板上铰接至少一个控制牵引开合机构工作的曲拐,所说曲拐的一端滚压在底座的支撑板上,另一端与牵引开合机构连接。

实现本发明目的的另一解决方案为:一种全自动免冲洗厕具,包括一个箱体;安装在箱体上的成形腔;设置在成形腔上的座圈;设置在箱体外周的塑料袋护罩;安装在箱体中的用于控制成形腔与在箱体下面安装的盛

便箱是否连通的牵引塑料袋的牵引开合机构；在所说塑料袋护罩外周设置至少一个可垂直滑动的控制杆，所说座圈的后端铰接在成形腔上，控制杆的上端通过安装在其上的弹簧顶靠在座圈上，在控制杆的下部可转动地安装至少一个齿轮，该齿轮与一固定齿条和一滑动齿条相啮合，所说牵引开合机构与所说滑动齿条相连接。

本发明完全利用人体的重量自动控制牵引开合机构的运转，性能可靠，适用性强，可广泛用于家庭、旅游区、长途汽车、火车、轮船及飞机等场所。

附图概述

下面结合附图对本发明进行详细描述，从中可以更加清楚地理解本发明的其它目的、结构及优点。

图 1 是本发明一个实施例的纵剖面图；

图 2 是图 1 中密封结构的一个实施例的透视图；

图 3 是图 1 中密封结构的另一个实施例的透视图；

图 4 是图 1 中牵引机构的侧视图；

图 5 是沿图 4 中 A—A 剖线的半剖视图；

图 6 是本发明牵引开合机构的另一个实施例的在闭合时具有局部剖视的俯视图；

图 7 是沿图 6 中 B—B 断面的断面图；

图 8 是图 6 和 7 中的牵引辊轮的透视图；

图 9 是图 6—8 所示牵引辊轮在打开时的俯视图；

图 10 是沿图 9 中 C—C 断面的断面图；

图 11 是本发明另一个实施例的透视图；

图 12 是图 11 中的座圈俯视图；

图 13 是安装在图 12 的箱体中的传动机构的视图；

图 14 是沿图 13 中 D—D 剖线的剖面图；

图 15 是安装在图 14 的箱体中的另一传动机构的视图；

图 16 是沿图 15 中 E—E 剖线的密封结构的视图。

本发明的最佳实施例

参见图 1, 本发明的洁具包括一个箱体 3, 安装箱体 3 上的成形腔 7, 设置在成形腔下的座圈 8, 在箱体外周设置的塑料袋 10 的护罩, 该护罩由外护板 25 和内护罩 26 构成, 塑料袋 10 处在两护板之间。塑料袋 10 最好为可降解塑料。该箱体 3 安装在一踏板 2 上, 踏板 2 的后端与一底座 1 铰接, 踏板 2 可绕支点 0 摆动, 在踏板 2 的前端和底座之间安装一压簧 11, 在踏板 2 上铰接两个控制安装在箱体 3 中的牵引开合机构工作的曲拐 21、23, 各曲拐的一端滚压在底座 1 的支撑板 13 上, 另一端分别通过拉索 22 和 24 与牵引开合机构相连。

曲拐 21、23 运动方向相反, 在曲拐 21 的摆动端和底座之间连接一复位弹簧 12。

箱体 3 的下端通过伸缩筒 9 与盛便箱(未示出)相连。

参见图 2—5, 本发明的牵引开合机构包括密封装置和牵引装置。密封装置具有一对安装在上隔板 31 上的上密封门 41 和一对安装在下隔板 32 上的下密封门 51, 上下密封门各有迫使其闭合的弹簧 42、52, 上下密封门呈交替闭合状态, 两上密封门 41 通过滑轮组 25、26、27 与两根拉索 24 连接, 两下密封门 52 通过一对拉索 44 及滑轮组 43、53 与上密封门 41 连接, 拉索 24 与曲拐 23 相连, 弹簧 42 的弹力大于弹簧 52 的弹力。牵引装置设置在上下门 41、51 之间, 并且具有安装在一传动轴 60 上的牵引轮 63, 该牵引轮 63 最好有两个, 此外, 还安装有与牵引轮配合的压紧轮 64, 压紧轮 64 通过调节螺钉 66 及托架 65 来调节其与牵引轮 63 之间的压力。在传动轴上安有一个链轮 62。链轮 62 通过在拉索 22 上连接的链条带动转动, 链条的另一端通过一拉簧 67 与箱体 3 连接。复位弹簧 12 的弹力大于拉簧 67 的弹力。

曲拐 21 与控制密封装置的拉索 22 连接, 曲拐 23 与控制牵引装置的拉索 24 连接。

在链轮 62 和牵引轮 63 之间设置超越离合器,该离合器可设在牵引轮 63 内,也可设在链轮 62 上。最简单的方式是链轮 62 为普遍用于自行车的飞轮。

图 3 表示密封结构的另一种实施例,其与图 2 所示实施例不同之处在于用拉簧 242 和 252 取代压簧 42 和 52,并且图 2 表示的是上门打开,下门关闭,而图 3 表示的是上门闭合,下门打开。

图 6—10 表示本发明牵引开合机构的另一个实施例。

在箱体 3 中安装的牵引开合机构包括对称设置的两个辊轮 70,每个辊轮具有两牵引轮 71,两牵引轮 71 通过一处于辊轮轴线上的夹板 72 相连接,夹板 72 的最大宽度等于辊轮 70 的直径,夹板 72 的厚度小于辊轮的半径,两辊轮 70 通过传动装置 68、69 由链轮 62 带动沿相反方向转动。两辊轮 70 的一个辊轮上设有压紧装置,如上述的螺钉 66 和托架 65。

在采用图 6—10 牵引开合机构的情况下,可仅设置一个曲拐 21,曲拐的摆动端通过拉索 22 及在拉索上连接的链条带动链轮 62 转动。链条的另一端通过拉簧 67 与箱体连接,在曲拐 21 的摆动端和底座 1 之间连接的复位弹簧 12 的弹力大于拉簧 67 的弹力。链轮 62 可以为上述的飞轮。

图 6 和 7 表示辊轮 70 处于关闭状态,塑料袋 10 由两夹板 72 夹紧密封,图 9 和 10 表示辊轮 71 处于打开状态,盛便塑料袋 10 可通过在夹板 72 之间形成的空间。牵引轮 71 用于牵引塑料袋 10。

图 11—16 表示本发明的另一个实施,该实施可以采用与图 1—10 相同的牵引开合机构。所不同的是该实施的致动方式为坐压式。

参见图 11—14,该厕具包括一个箱体 3,安装在箱体上的成形腔 7,设置在成形腔上的座圈 8,设置在箱体外周的塑料袋护罩(图中未示出),安装在箱体 3 中的牵引开合机构,在塑料袋罩外周设置至少一个牵引开合执行机构,该执行机构具有一个可垂直滑动的控制杆 100,座圈 8 的后端铰接在成形腔 7 上,控制杆 100 的上端顶靠在座圈 8 上,其顶靠作用是通过安装在控制杆 100 上的弹簧 110 实现的,在控制杆 100 的下部连接一个传动机构 101,该机构包括可转动地安装在控制杆 100 上的至少一个齿轮

102, 与该齿轮 102 相啮合的一固定齿条 103 和一滑动齿轮 104, 在齿条 104 上安装有与牵引开合机构相连的拉索 122, 该拉索 122 与牵引开合机构的连接是通过滑轮扩行程机构实现的, 该扩行程机构包括在滑动齿条 104 上安装的第一和第二动滑轮 105、106, 在箱体上安装的第一和第二定轮 107、108, 拉索 122 的一端固定在箱体 3 上, 再按顺序绕过第一动滑轮 105、第一定滑轮 107, 第二动滑轮 106 和第二定滑轮 108, 然后与牵引开合机构连接。在图 11—16 中与图 1—10 所示实施例相同的部件用相同的标号表示。

图 15 和 16 表示了另一种密封结构, 该密封结构也包括一对上密封门 41 和一对下密封门 51, 以及迫使密封门闭合的弹簧 42、52。不同的是, 在箱体两侧对称设置一对由固定齿条 103、滑动齿条 104、齿轮 102 及控制杆 100 等组成的密封门开合机构, 上下密封门通过拉索 111 和 112 与滑动齿条 104 的上下端连接, 以牵引密封门开合。

下面通过图 1—5 所示实施例说明其工作过程。

当人踏上踏板 2 时, 不论其是否坐在座圈 8 上, 踏板 2 将绕 0 点转动, 曲拐 21 克服复位弹簧 12 的弹力逆时针转动, 拉索 22 在弹簧 67 的作用下向图 2 中的右侧移动, 因而带动链轮 62 转动, 由于在链轮 62 和牵引轮 63 之间安装有超越离合器, 链轮 62 空转时牵引轮固定不动。同时, 曲拐 23 顺时针转动, 带动拉索 24 向左移动, 拉开上密封门 41, 下密封门 51 在弹簧 52 的作用下关闭。此时, 用厕者看到的是一个洁净的排便空间。当用厕者离开踏板 2 时, 复位弹簧 12 克服弹簧 67 的弹力 (弹簧 12 大于弹簧 67 的弹力), 通过链轮 62 带动牵引轮 63 转动, 将带有便物的塑料袋 10 向下拉, 使成形腔 7 中仍保持清洁的空间, 同时, 在弹簧 42 的带动下, 上密封门 41 克服弹簧 52 的弹力, 将下密封门 51 打开, 便物进入盛便箱, 完成了一次用厕。其他实施例的使用方法与此类似。

以上对本发明的实施例进行了描述, 显而易见, 在不超出本发明构思范围内, 可以做出多种变化, 这些变化都在普通技术人员的能力范围内。例如链轮 62 可以用皮带轮, 牵引辊轮可以是 PCT/CN96/00009 所示的腰鼓

轮,在成形腔7内还可以安装PCT/CN96/00009所描述的扩张环。在牵引轮部分下面可设置一个随其开合而开合的下密封门。下密封门可为绕枢轴转动的翻转门。

权利要求书

1、一种全自动免冲洗洁具,包括一个箱体;安装在箱体上的成形腔;设置在成形腔上的座圈;设置在箱体外周的塑料袋护罩;安装在箱体中的用于控制成形腔与在箱体下面安装的盛便箱是否连通的牵引塑料袋的牵引开合机构;其特征在於所说箱体安装在一踏板上,所说踏板的后端与底座铰接,所说踏板的前端为摆动端,在其端部和底座之间安装一个压簧,在踏板上铰接至少一个控制牵引开合机构工作的曲拐,所说曲拐的一端滚压在底座的支撑板上,另一端与牵引开合机构连接。

2、根据权利要求1所述的洁具,其特征在於,所说牵引开合机构包括密封装置和牵引装置,所说密封装置具有一对安装在上隔板上的上密封门和一对安装在下隔板上的下密封门,上下密封门各有迫使其闭合的弹簧,上下密封门呈交替闭合状态,两上密封门通过滑轮组与两根拉索连接,两下密封门通过一对拉索及滑轮组与两上密封门连接,用于上密封门的弹簧弹力大于用于下密封门的弹簧弹力;所说牵引装置设置在上下密封门之间,并具有安装在一传动轴上的牵引轮,与牵引轮配合的压紧轮,一安装在传动轴上的链轮,所说链轮和牵引轮之间设有超越离合器;

所说曲拐有两个,一个用于控制密封装置的第一曲拐和一个用于控制牵引装置第二曲拐。

3、根据权利要求1所述的洁具,其特征在於,所说牵引开合机构包括密封装置和牵引装置,所说密封装置具有一对安装在上隔板上的上密封门,在上密封门上装有迫使其闭合的弹簧,上密封门通过滑轮组与两根拉索连接,各拉索与所说第一曲拐相连;所说牵引装置设置在密封门之下,并具有安装在一传动轴上的牵引轮、与牵引轮配合的压紧轮和一安装在传动轴上的链轮;

所说曲拐有两个,一个用于控制上密封门的第一曲拐和一个用于控制牵引装置的第二曲拐。



4、根据权利要求2或3所说的厕具,其特征在于,第一曲拐和第二曲拐运动方向相反,第一曲拐的摆动端通过一拉索及在拉索上连接的链条带动所说链轮转动;链条的另一端通过一拉簧与箱体连接,在所说第一曲拐的摆动端和底座之间连接一个复位弹簧,所说复位弹簧的弹力大于所说拉簧的弹力;第二曲拐与一对带动所说上密封门的拉索连接;在所说链轮和牵引轮之设置超越离合。

5、根据权利要求1所述的厕具,其特征在于,所说牵引开合机构包括对称设置的两个辊轮,每个辊轮具有两个牵引轮部分,两牵引轮部分通过一处于辊轮轴线上的夹板相连接,夹板的最大宽度等于辊轮的直径,夹板的厚度小于辊轮的半径,两辊轮通过传动装置带动沿相反方向转动。

6、根据权利要求1或5所述的厕具,其特征在于,所说曲拐的摆动端通过一拉索及在拉索上连接的链条带动一链轮,所说链条的另一端通过一拉簧与箱体连接,在所说曲拐的摆动端和底座之间连接一复位弹簧,所说复位弹簧的弹力大于所说拉簧的弹力。

7、一种全自动免冲洗厕具,包括一个箱体;安装在箱体上的成形腔;设置在成形腔上的座圈;设置在箱体外周的塑料袋护罩;安装在箱体中的用于控制成形腔与在箱体下面安装的盛便箱是否连通的牵引塑料袋的牵引开合机构;其特征在于,在所说塑料袋护罩外周设置至少一个可垂直滑动的控制杆,所说座圈的后端铰接在成形腔上,控制杆的上端通过安装在其上的弹簧顶靠在座圈上,在控制杆的下部可转动地安装至少一个齿轮,该齿轮与一固定齿条和一滑动齿条相啮合,所说牵引开合机构与所说滑动齿条相连接。

8、根据权利要求7所述的厕具,其特征在于,所说牵引开合机构与所说滑轮齿条通过一拉索相连接。

9、根据权利要求8所述的厕具,其特征在于,在滑动齿条上安装有第一和第二动滑轮,在所说箱体上安装有第一和第二定滑轮,所说拉索的一端固定在箱体上,再按顺序绕过第一动滑轮,第一定滑轮、第二动滑轮和第二定滑轮,然后与牵引开合机构连接。

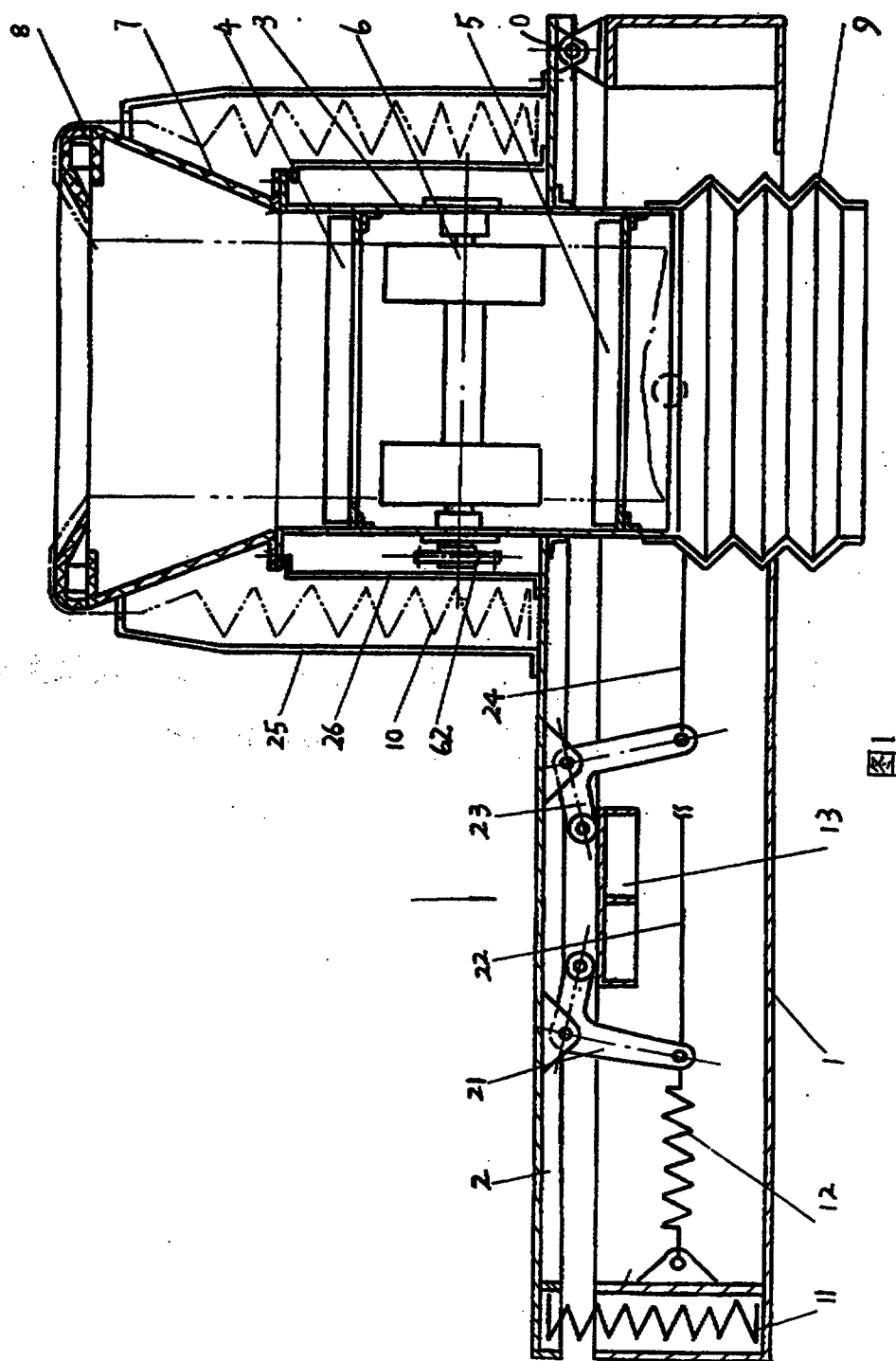


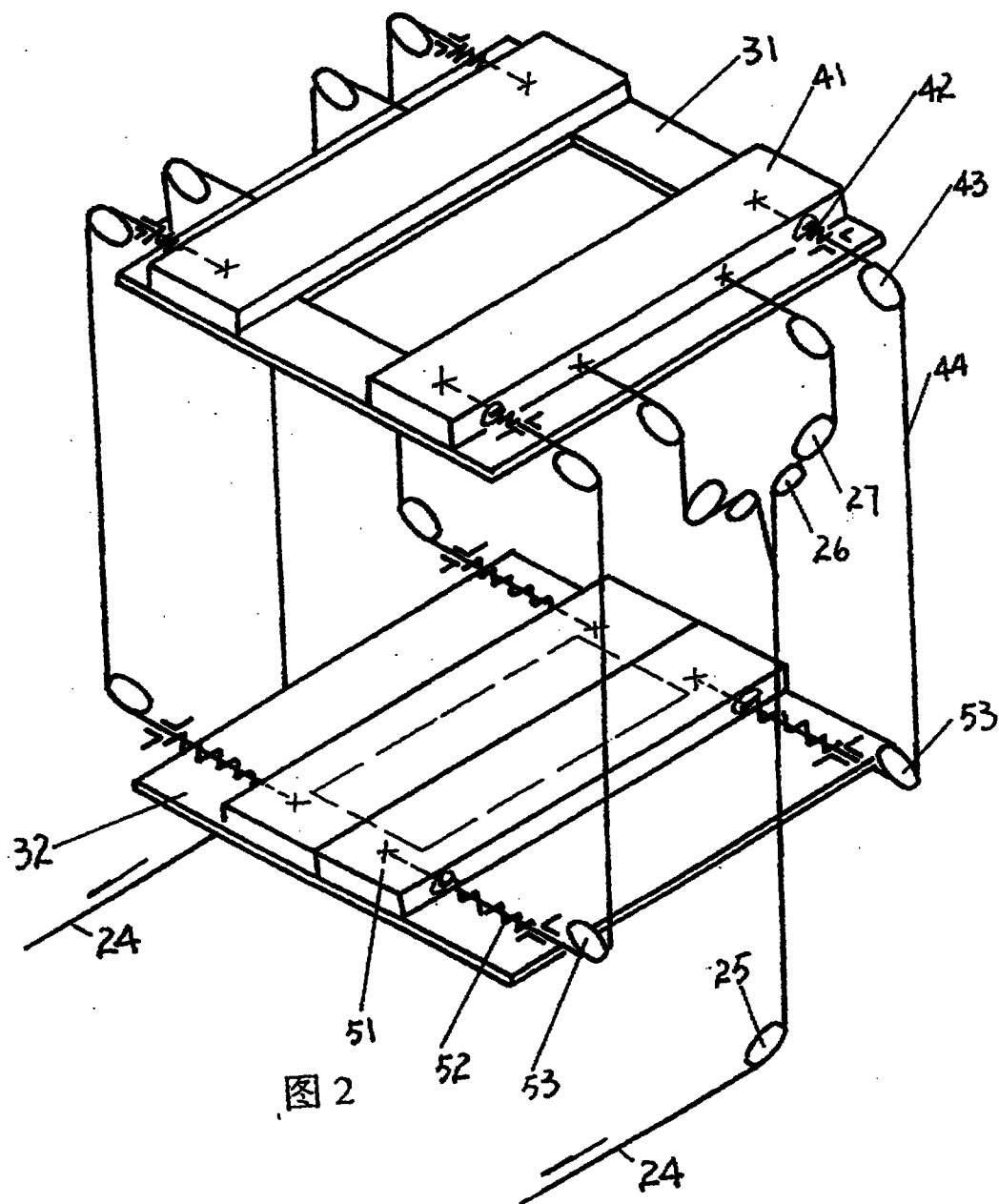
10、根据权利要求 1 或 5 所述的厕具,其特征在于,在牵引轮部分下面设置一个可随其开合而开合的下密封门。

11、根据权利要求 10 所述的厕具,其特征在于,所说下密封门为可绕枢轴转动的翻转门。

12、根据权利要求 1、2、3、5、7、8、9 或 11 所述的厕具,其特征在于在成形腔内安装一个扩张环。







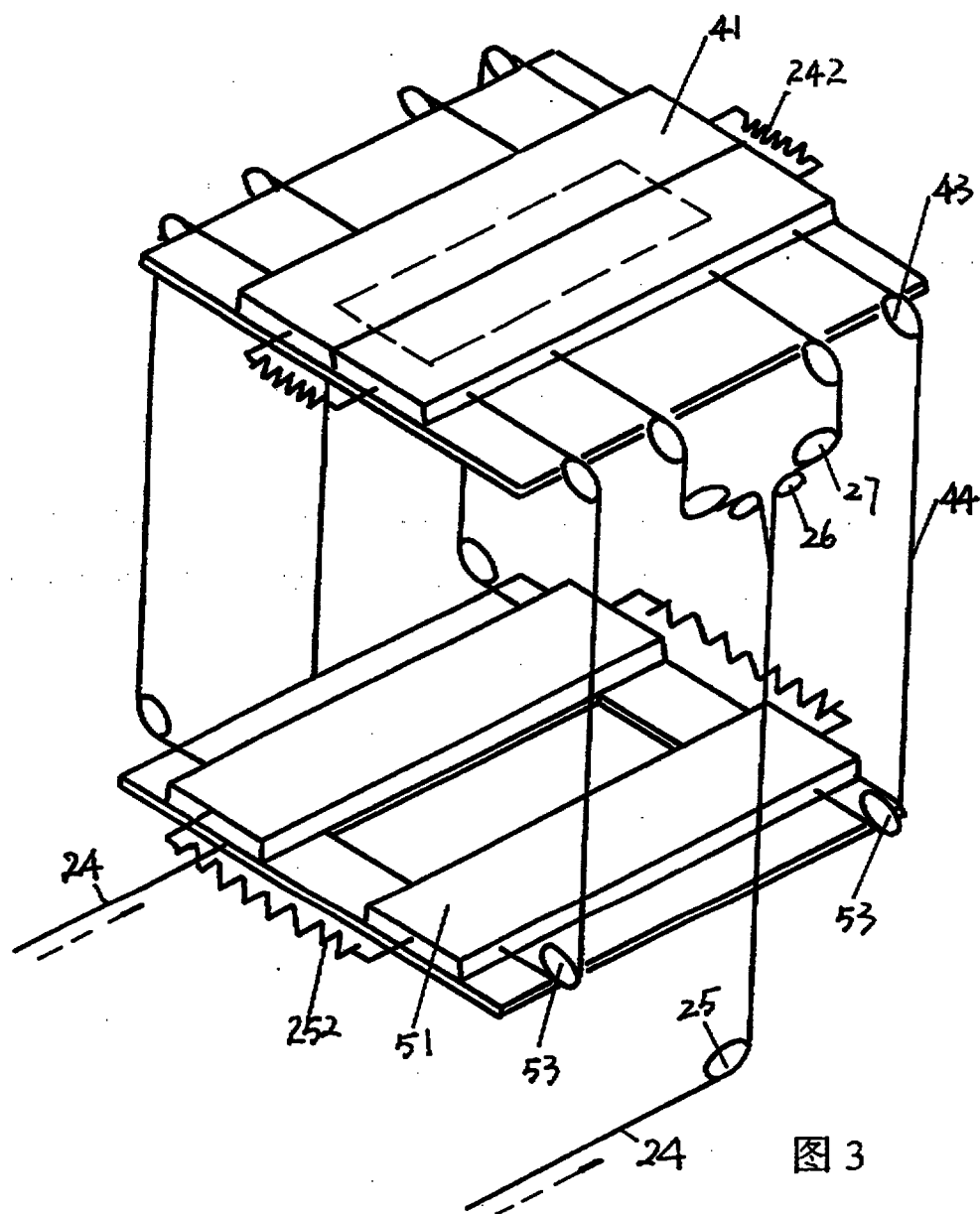
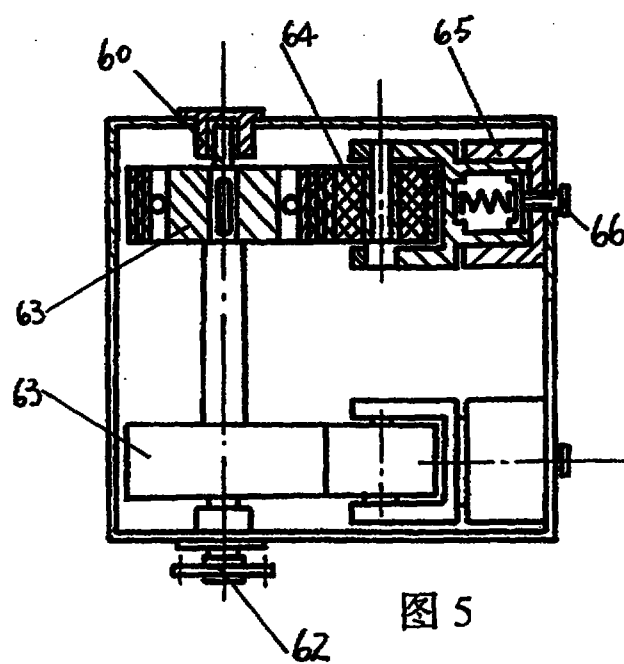
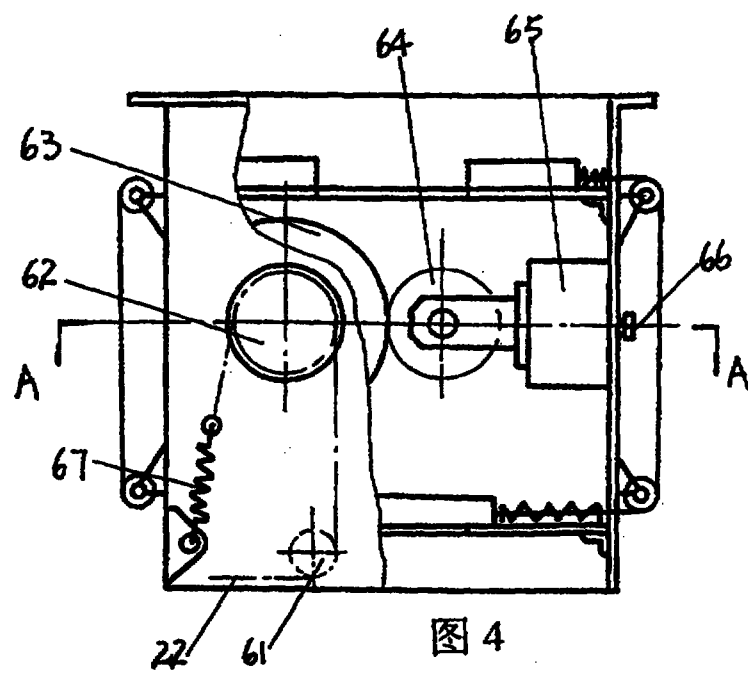


图 3



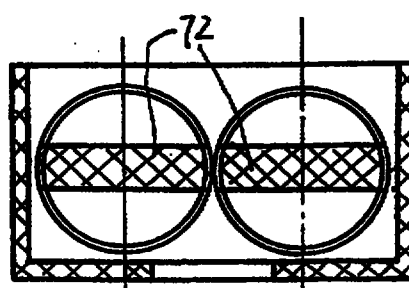
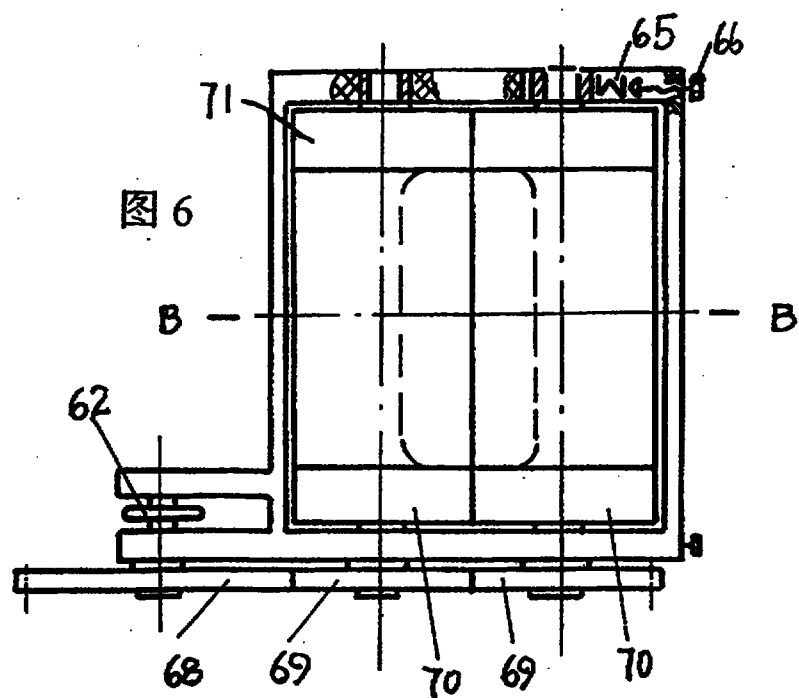


图 7

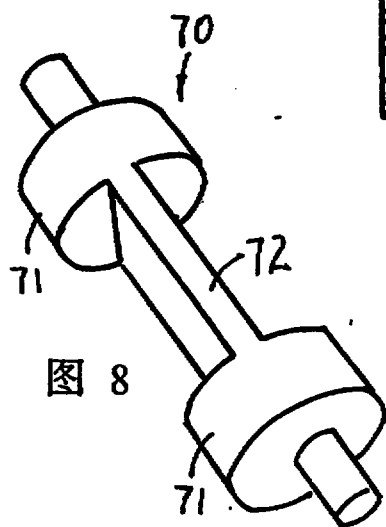


图 8

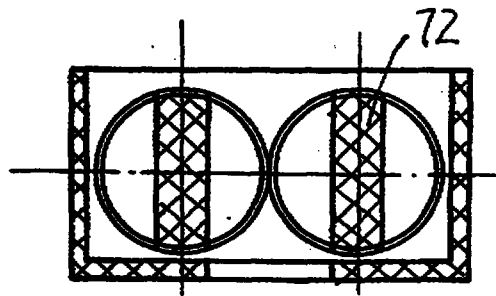
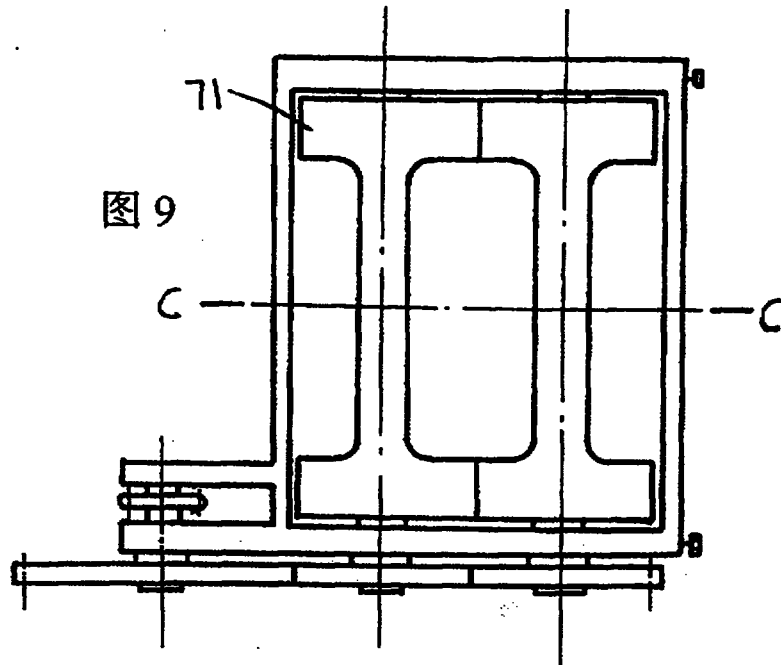


图 10

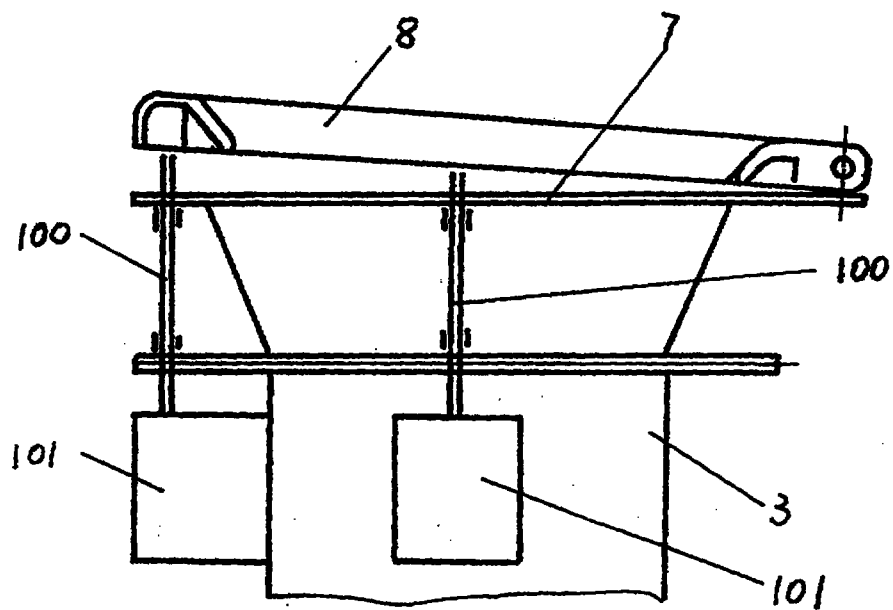


图 11

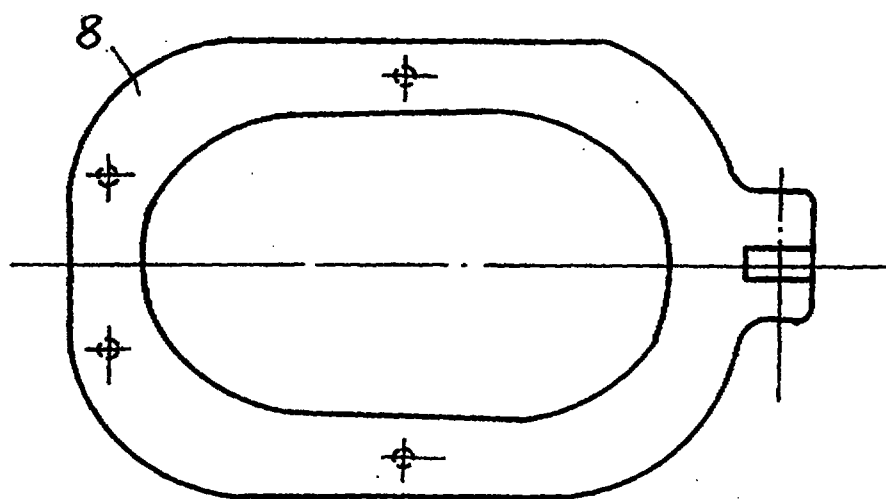


图 12

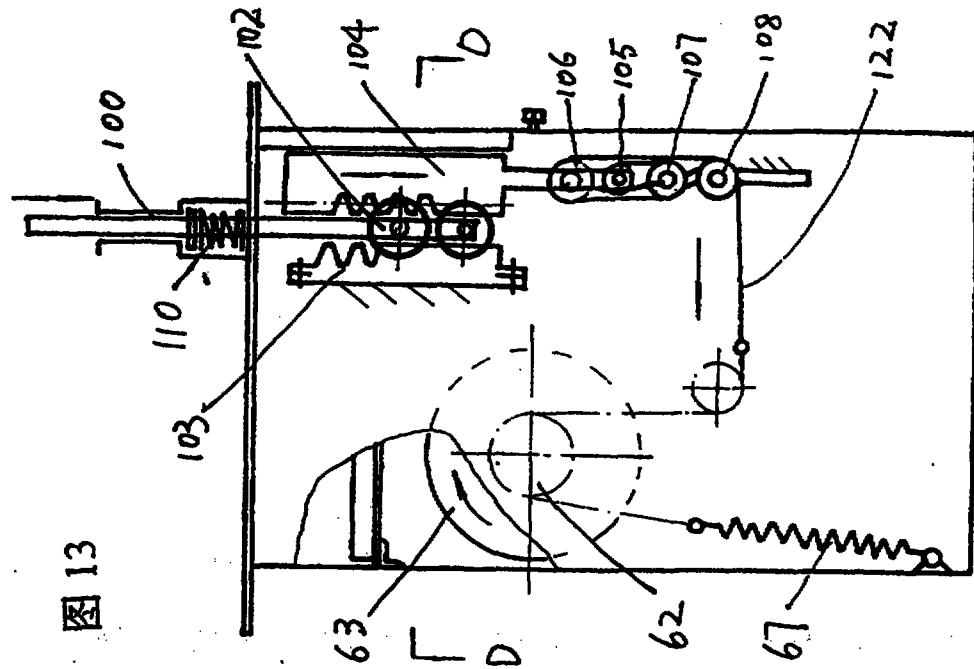
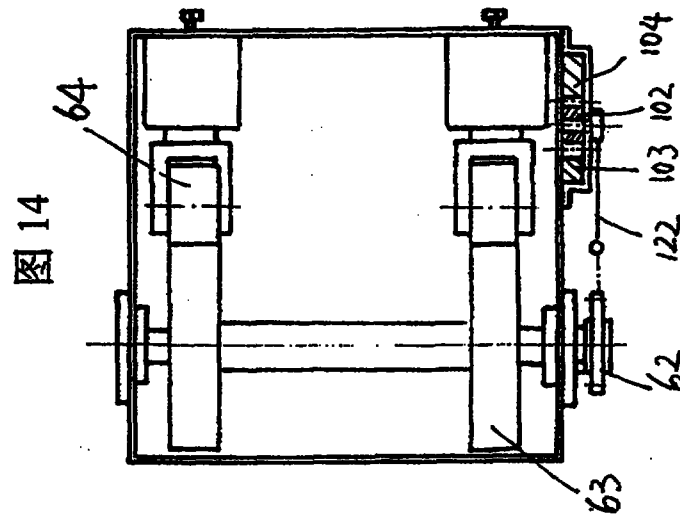
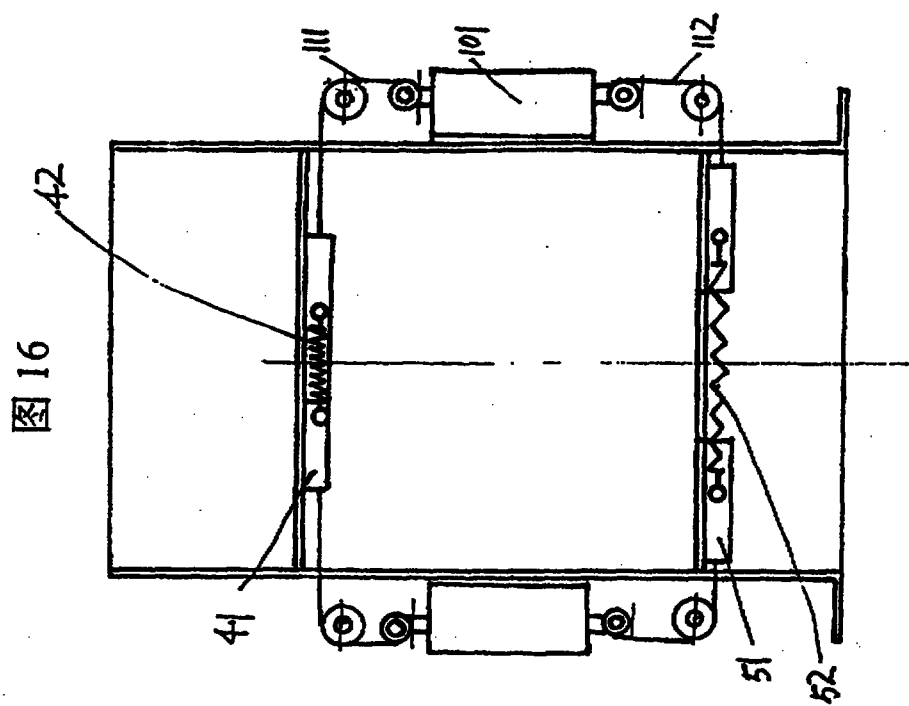
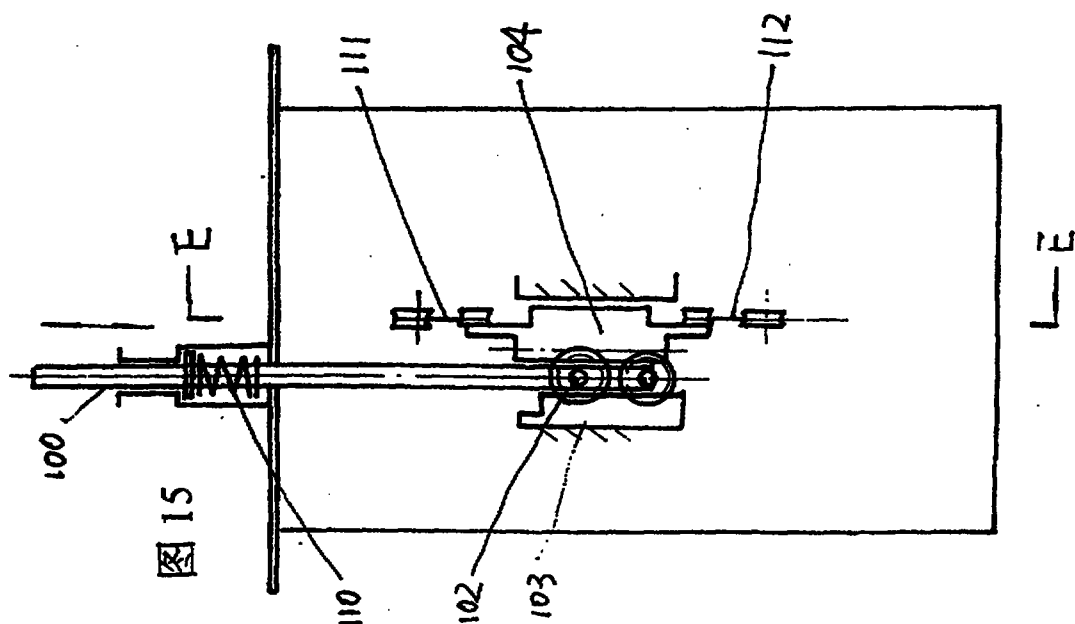


图 13



14 图



FULLY AUTOMATIC TOILET WARE WITHOUT FLUSHING

Technical field

The present invention relates to a toilet equipment, in particular, to a dry and sealed toilet equipment.

Background Technology

At requirement for environmental protection and the request for returning to nature, people are, in the past around hundred years, more and more aware of the defects of flush toilet that embodies the modern civilization. Therefore there have been various inventions, such as PCT/CN96/00009, which puts forward a toilet seat stool without flushing. Though said invention has features of prevention cross-contamination, convenience and sanitation, its transmission is electrically controlled, which may lead to easy mal-operation when user is not familiar with the structure of the seat stool and make it inappropriate in the area without electricity and water, such as sea beach etc.

Summary

The objective of the present invention is to provide a dry and sealed toilet ware controlled by the weight of human body.

One solution to achieve the objective of the present invention is: a fully automatic toilet ware without flushing, including a case body; a shaped cavity; a seat ring provided on said cavity; a plastic cover over the periphery of said case body; an open-close pulling mechanism to pull plastic bag, provided in said case body for controlling the connection between said shaped cavity and an excrement-holding box fixed under said case body; said case body is fixed on one pedal, and said pedal has one end hinged with base, said the front end of said pedal is a swing end, and there is a pressing spring fixed between its end and the base, the pedal is hinged at least with one crank for controlling the operation of said open-close pulling mechanism, said crank has one end rolling against the supporting board of said base, and the other end is connected with said open-close pulling mechanism.

Another solution to achieve the objective of the present invention is: a fully automatic toilet ware without flushing, including a case body; a shaped cavity; a seat ring provided

on said cavity; a plastic cover over the periphery of said case body; an open-close pulling mechanism to pull plastic bag, provided in said case body for controlling the connection between said shaped cavity and a excrement-holding box fixed under said case body; at least one vertically movable controlling rod is provided on the periphery of said plastic cover, said seat ring has one end hinged with said shaped cavity, the controlling rod has the upper end against said ring via a spring fixed thereon, at least one gear is rotatably fixed at the lower part of said controlling rod, said gear is joggled with one fixed rack and one sliding rack, said open-close pulling mechanism is connected with said sliding rack.

The present invention fully utilizes the weight of human body to automatically control the operation of said open-close pulling mechanism, and it is reliable and has good adaptability and may be widely used in such cases as in family, tourist area, long-distance bus, train, boat and aircraft etc.

Summary of drawings

The other objectives, structure and advantages of the present invention may be better understood with the detailed description by reference to the following drawings.

Fig. 1 is a longitudinal section view of one embodiment of the present invention;

Fig. 2 is a perspective view of one embodiment of the seal structure of Fig. 1;

Fig. 3 is a perspective view of another embodiment of the seal structure of Fig. 1;

Fig. 4 is a side view of said pulling mechanism of Fig. 1;

Fig. 5 is a half-sectional view along the line of A-A of Fig. 4;

Fig. 6 is a top view with partial sectional view at the closing time of another embodiment of the open-close pulling mechanism of the present invention;

Fig 7 is a view cut along B-B line of Fig. 6;

Fig 8 is a perspective view of the pulling roller in Fig. 6 and 7;

Fig 9 is a top view of the pulling roller at the state of opening as shown in Figs. From 6-8;

Fig 10 is a view cut along C-Cline of Fig. 9;

Fig 11 is a perspective view of another embodiment of the present invention;

Fig. 12 is a top view of the seat ring in Fin. 11;

Fig. 13 is a view showing the transmission mechanism mounted in the case body of Fig. 12;

Fig. 14 is a sectional view cut along D-D line of Fig. 13;

Fig. 15 is a view showing another transmission case body of Fig. 14;

Fig. 16 is a view showing the sealing structure along E-E line of Fig. 15;

Best Mode of Embodiment of the Present Invention

Referring to Fig. 1, the toilet ware of the present invention includes a case body 3, a shaped cavity 7 formed on said case body 3, a seat ring 8 provided under said shaped cavity, a cover of plastic bag 10 provided over the periphery of said case body, wherein said cover is formed by outer protective board 25 and inner protective cover 26 and said plastic bag is provided between the two protective boards. Said plastic bag 10 is preferably dissoluble plastics. Said case body 3 is mounted on a pedal 2 which has the rear end hinged with a base 1 and may swing around a supporting point O. Between said base and the front a end of said pedal 2 is provided with a press spring 11. And said pedal 2 is hinged with two cranks 21,23 which control the operation of said open-close pulling mechanism provided in said case body 3. Each of said cranks has one end rolled on a supporting board 13 of said base 1, and the other end connects respectively to said open-close pulling mechanism via pulling ropes 22 and 24.

The moving directions of said cranks 21 and 23 are opposite and a reset spring 12 is provided between said swing end of said crank 21 and said base.

The lower end of said case body 3 connects a excrement holding case (not shown) via a flexible tube 9.

Referring to Figs. 2-5. The open-close pulling mechanism of the present invention includes a sealing means and a pulling means. Said sealing means has a pair of upper sealing doors 41 mounted on an upper partition board 31 and a pair of lower sealing doors 51 mounted on an lower partition board 32. Said sealing doors have respectively spring 42 and 52 which may force them to close. Said upper and lower doors are to be alternatively closed and said two upper sealing doors 41 connect to two pulling ropes 24 via pulleys 25,26 and 27 while said two lower sealing doors 51 connect to the upper sealing doors 41 via a pair of pulling ropes 44 and pulleys 43 and 53. Said rope 24 connects with said crank 23 and the force of said spring 42 is bigger than that of said spring 52. Said pulling means is provided between said upper and lower doors 41 and 51, and has a pulling wheel 63 mounted on a transmission shaft 60. Said pulling wheel 63 should be preferable two. In addition, there is also provided a tension wheel 64 cooperated with said pulling wheels 63. Said tension wheel 64 adjusts the press between itself and pulling wheel 63 via adjusting screw 66 and support 65. On said transmission shaft there is provided a chain wheel 62

which is turned by a chain connected on said rope 22 and the other end of said chain connects to chain said case body 3 via an extension spring 67. The force of said reset spring 12 is stronger than that of said extension spring 67.

Said crank 21 connects to said pulling rope 22 which controls said sealing means, and said crank 23 connects to said pulling rope 24 which controls said pulling means.

Between said chain wheel 62 and pulling wheel 63, there is provided a surpassing clutch which provided within said pulling wheel 63 or on said chain wheel 62. The simplest chain wheel 62 is an ordinary flywheel widely used on bike.

Fig.3 shows another embodiment of said seal structure. It differs from that of Fig.2 in that said press springs 42 and 52 are replaced by extension springs 242 and 252, and that Fig. 2 shows the upper door is open and the lower door is closed while Fig.3 shows the upper door is closed and the lower door is open.

Figs. 6-10 show another embodiment of pulling open-close structure.

Open-close pulling mechanism mounted in said case body 3 includes two symmetrically-arranged rollers 70, of which each has two pulling wheels 71 which connect to one another via a plywood board 72 positioned along the axis of said rollers. The maximum width of said plywood board 72 is equal to the diameter of the rollers 70 and the thickness of said board 72 is less than half of radius of said rollers. Said two rollers 70 turn towards the opposite direction driven by said chain wheel 62 via transmission means 68 and 69. Two rollers 70 has a pressing means on one of them, such as said screw 66 and support 65.

When open-close pulling mechanism as shown by Figs. 6-10 is adopted, only one crank 21 may be provided, of which its swing end drives said chain wheel 62 to rotate via said rope 22 and chains connected with said rope. The other end of the chain connects to said case body via said extension 67. The force of said reset spring 12 connected between said swing end of said crank 21 and base 1 is stronger than that of spring 67. Said chain wheel 62 may be above flywheel.

Figs. 6-7 show that said roller 70 is in a state of close and said plastic bag 10 is clipped and sealed by two plywood boards 72, and Figs. 9-10 show that said roller 71 is in a open state and said plastic bag 10 may go through a room shaped between said boards 72. Said

pulling wheels 71 are used to pull said plastic bag 10.

Figs. 11-16 show another embodiment of the present invention, which adopts an open-close pulling mechanism which, is the same as that of Figs. 1-10. The only difference is that the operation is initiated by seating pressing.

Referring to Figs. 11-14. The toilet ware includes a case body 3, a shaped cavity 7 mounted on said case body, a seat ring 8 provided on said shaped cavity, a plastic bag cover (not shown) provided on the periphery of said case body, and an open-close pulling mechanism mounted in said case body 3. At least an open-close pulling performing mechanism provided around the periphery of said plastic bag, which has a control rod 100 that may vertically glide. The seat ring 8 has its rear end hinged with said shaped cavity 7, said control rod 100 has its upper end against said ring 8, which is effected by a spring 110 mounted on said rod 100. The lower part of said rod 100 is connected to a transmission mechanism 101, which includes at least one gear wheel 102 movably fixed on said rod 100, a fixed rack joggled with said gear wheel 102 and a gliding gear wheel 104. Provided on said rack 104 there is a pulling rope 122 connected to the open-close pulling mechanism, and said pulling rope 122 is connected to said open-close pulling mechanism by a pulley range expanding mechanism. Said pulley range expanding mechanism includes a first and second movable pulley 105 and 106 mounted on said gliding rack 104, a first and second fixed pulley 107 and 108 and a rope 122 which has one end fixed in said case body 3 and goes on in turn around the first movable pulley 105, the first fixed pulley 107, the second movable pulley 106 and second fixed pulley 108, and is then connected to said open-close pulling mechanism. In Figs. 11-16, the parts identical to those in Figs. 1-10 are indicated by the same marks.

Figs. 15-16 shows another sealing structure including also a pair of upper sealing doors 41 and a pair of lower sealing doors 51, as well as springs 42 and 52 which may force said sealing doors to close. The difference is that on both sides of said case body there is symmetrically provided with a pair of open-close mechanism for sealing doors formed by fixed rack 103, movable rack 104, gear wheel 102 and control rod 100, wherein said upper and lower sealing doors are connected to the upper and lower ends of movable rack 104 by ropes 111 and 112, so as to pull said sealing door to open and close.

The next is description of the process of operation by reference to Figs. 1-5.

When a man steps on said pedal 2, no matter whether he seats on said seat ring 8 or not, pedal 2 will rotate around point O. Crank 21 then overcomes the force of reset spring 12 and rotate in a counter clockwise way. Rope 22 in turn, under the function of spring 67, moves to the right side of Fig. 2 so as to consequently make chain 62 to rotate. Since there is a surpassing clutch provided between chain wheel 62 and pulling wheel 63, pulling wheel does not move when chain wheel 62 freely rotates. At the same time, crank 23 rotates clockwise bringing rope 24 to move leftward, pulling open upper sealing door 41. Lower sealing door 51 closes at function of spring 52. At this time there is a clean room for excrement. When one left pedal 2, reset spring 12 overcomes the force of spring 67 (the force of spring 12 is stronger than of spring 67) and pulls the plastic bag 10 containing excrement downward via pulling wheel 63 rotated by chain wheel 62, making shaped cavity 7 to be a clean room while upper sealing door 41, activated by spring 42, overcomes the force of spring 52 and opens lower sealing door 51, making excrement fall into said excrement holding case, finishing one use of toilet. The using method is similar to that of other embodiments.

The embodiment of the present invention as described above may evidently be varied within concept of the present invention, and all the variations are within capability of ordinary technicians. For example chain wheel 62 may be replaced by a belt wheel, said pulling roller may be a drum wheel as shown in PCT/CN96/00009 and an expending ring as described in PCT/CN96/00009 may also be fixed within said shaped cavity 7. Under said pulling wheel there may be provided with a lower sealing door which opens or closes according to its action. Said lower sealing door may be a turning gate rotating around axis.



What I claim is:

1. A fully automatic toilet ware without flushing including a case body, a shaped cavity mounted on said case body, a seat ring provided on said shaped cavity, a cover for a plastic bag provided over periphery of said case body and an open-close pulling mechanism mounted in said case body for controlling connection between said shaped cavity and an excrement holding case fixed under said case body, characterized in that said case body is fixed on a pedal which has its rear end hinged with a base and its front end structured as a swing end, and between the end said base there is provided with a press spring, and said pedal is at least hinged with a crank for controlling the operation of said open-close pulling mechanism, and said crank has one end rolled in a supporting board of said base and the other end connected with said open-close pulling mechanism.
2. A toilet ware in accordance with claim 1. Characterized in that said open-close mechanism includes a sealing means and a pulling means, said sealing means has a pair of upper sealing doors mounted on an upper partition board and a pair of lower sealing doors mounted on a lower partition board and said sealing doors have respectively springs which may force them to close and said upper and lower sealing doors are alternatively opened or closed, and two upper doors are connected with two pulling ropes through pulleys and two lower doors are connected with said two upper doors through a pair of pulling ropes and pulleys, and a spring of said upper sealing doors are stronger than that of lower doors; said pulling means is provided between said upper and lower sealing doors and has a pulling wheel mounted on a transmission shaft, a tension wheel, and a chain wheel mounted on said transmission shaft, and between said chain wheel and pulling wheel there is a surpassing clutch;
3. A toilet ware in accordance with claim 1 characterized in that said open-close pulling mechanism includes a sealing means and a pulling means, said sealing means has a pair of upper sealing doors mounted on an upper partition board, and said upper sealing doors have springs which may force them closed and are connected with two pulling ropes through pulleys, said ropes are connected with said first crank; said pulling means are provided under said sealing doors and have a pulling wheel mounted on an mounted on said transmission shaft;
there are two cranks, one first crank for controlling said upper sealing doors and one





there are two cranks for controlling said pulling means.

4. A toilet ware in accordance with claims 2 or 3 characterized in that said first crank and second crank have opposite direction of movement, and said first crank has its swing end drive a chain wheel rotate through a pulling rope and a chain connected with said rope; said chain has the other end connected with said case body through an extension spring, and between said swing end of said first crank and said base there is connected with a reset spring, said reset spring has a stronger force than that of the extension spring, said second crank is connected with a pair of ropes bringing said upper sealing doors; there is a surpassing clutch provided between said chain wheels and pulling wheels.
5. A toilet ware in accordance with claim 1 characterized in that said open-close pulling mechanism includes two symmetrically provided rollers, of which each has two pulling wheel parts which are connected to one another by a plywood board positioned along the axis of said rollers, said plywood board has its maximum width equal to the diameter of said rollers and its thickness less than the radius of said rollers, said two rollers rotate in opposite directions driven by said transmission means.
6. A toilet ware in accordance with claims 1 or 5 characterized in that said cranks have their swing ends drive a chain wheel through a rope and a chain connected with said rope, said rope has the other end connected with said case body through a extension spring, between said swing end of said crank and said base there is connected with a reset spring, said reset spring has stronger force than that of said extension spring.
7. A fully automatic toilet ware without flushing including a case body, a shaped cavity mounted on said case body, a seat ring provided on said shaped cavity, a cover for plastic bag provide over periphery of said case body and an open-close pulling mechanism mounted in said case body for controlling connection between said shaped cavity and an excrement holding case under said case body, characterized in that at least one vertically movable control rod is provided over said cover of plastic bag, said rear end of said seat ring is hinged on said shaped cavity, said control rod has its upper end against said seat ring and the lower part of said control rod has at least one gear wheel movably fixed, said gear wheel is joggled with one fixed rack and a



movable rack, said open-close pulling mechanism is connected with said movable rack.

8. A toilet ware in accordance with claim 7 characterized in that said open-closed pulling mechanism is connected with said movable rack through a pulling rope.
9. A toilet ware in accordance with claim 8 characterized in that on said movable rack there is mounted a first and a second movable pulleys, and on said case body there is mounted a with a first and second fixed pulleys, said pulling rope have one end fixed on said case body go on around said first movable pulley, first fixed pulley, second movable pulley and second fixed pulley, and then is connected with said open-closed pulling mechanism.
10. A toilet ware in accordance with claims 1 or 5 characterized in that under said pulling wheel there is provide with a lower sealing door which may be opened and closed along its action.
11. A toilet ware in accordance with claim 10 characterized in that said lower sealing door is a turning door which may rotate around said axis.
12. A toilet ware in accordance with claims 1,2,3,5,7,8,9 or 11 characterized in that there is an expanding ring fixed within said shaped cavity.

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ABSTRACT

The present invention relates to a fully automatic toilet ware without flushing, including: a case body; a shaped cavity; a seat ring provided on said cavity; a plastic cover over the periphery of said case body; an open-close pulling mechanism to pull plastic bag, provided in said case body for controlling the connection between said shaped cavity and a excrement-holding box fixed under said case body; said case body is fixed on one pedal, and said pedal has one end hinged with base, said the front end of said pedal is a swing end, and there is a pressing spring fixed between its end and the base, the pedal is hinged at least with one crank for controlling the operation of said open-close pulling mechanism, said crank has one end rolling against the supporting board of said base, and the other end is connected with said open-close pulling mechanism.

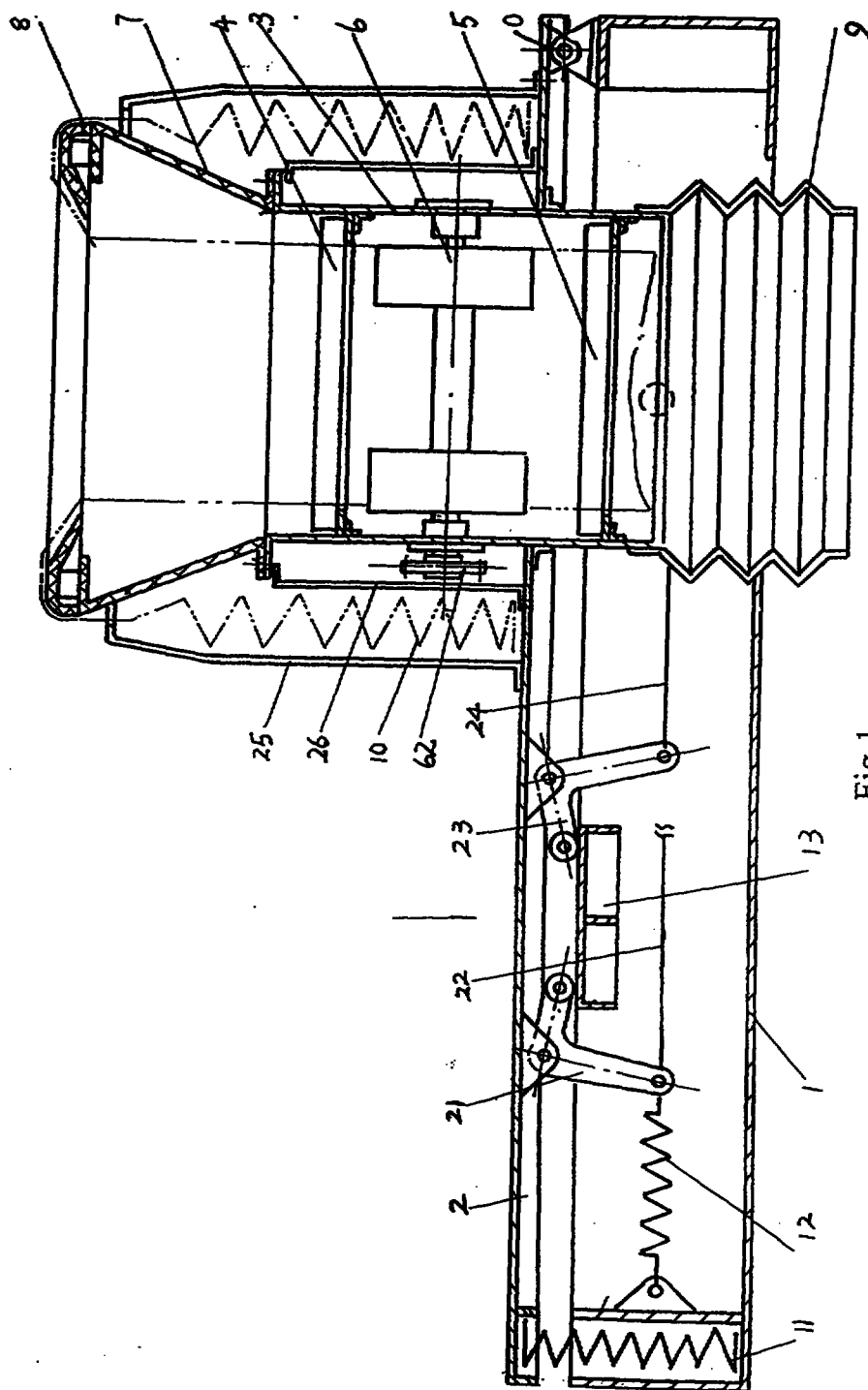
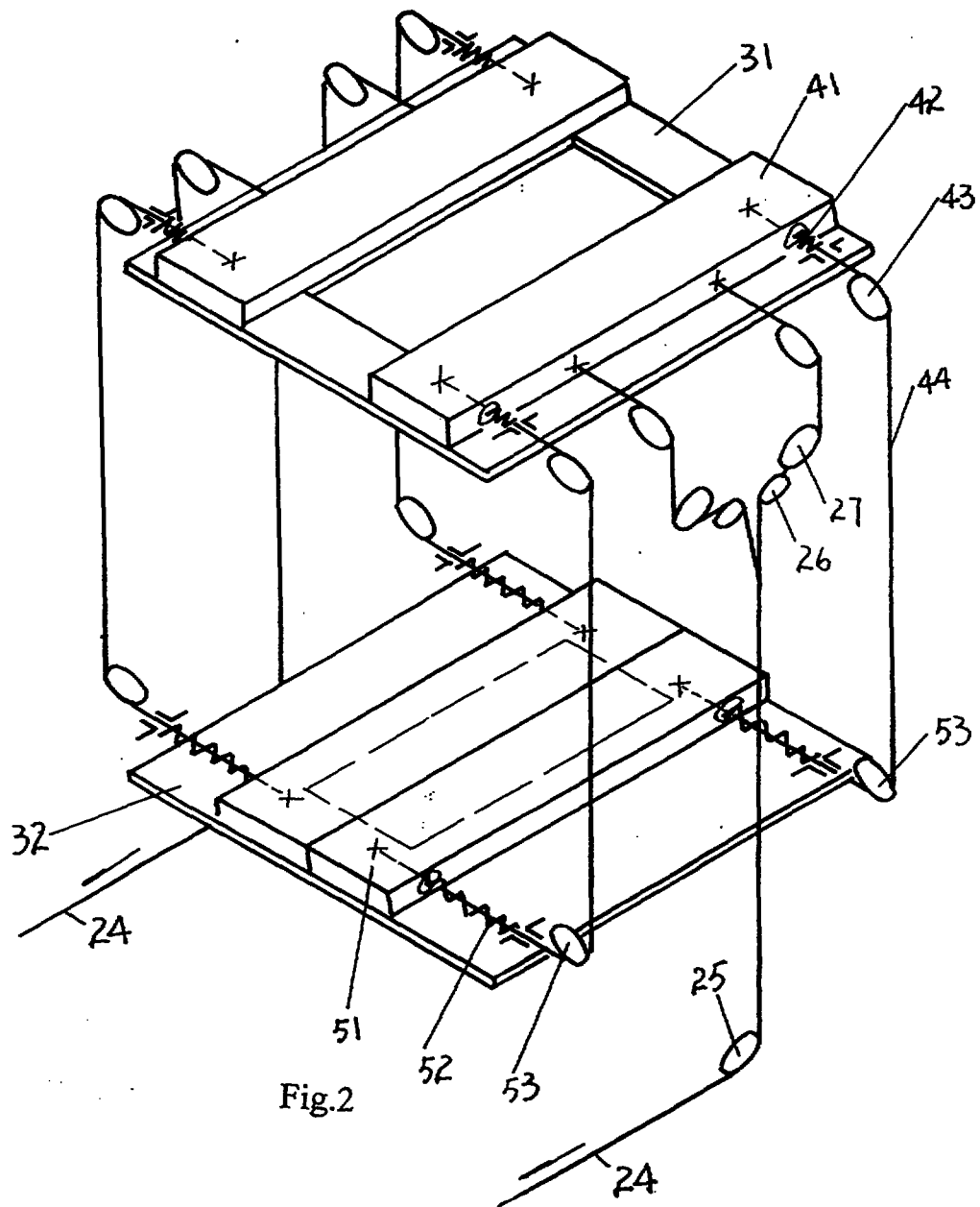
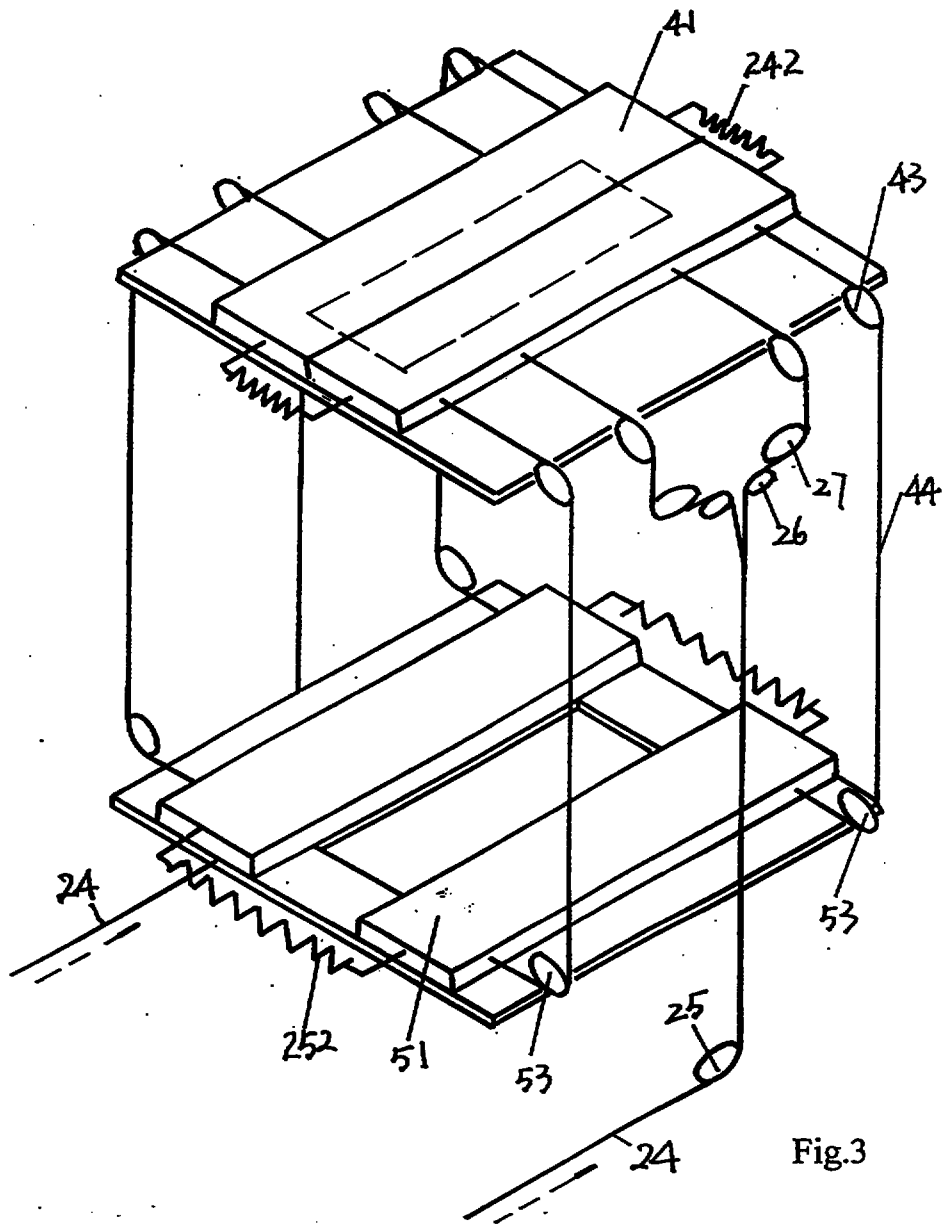
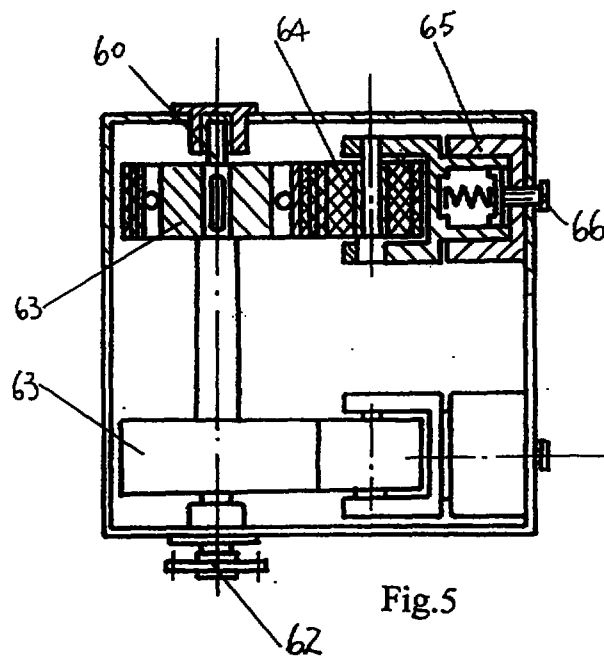
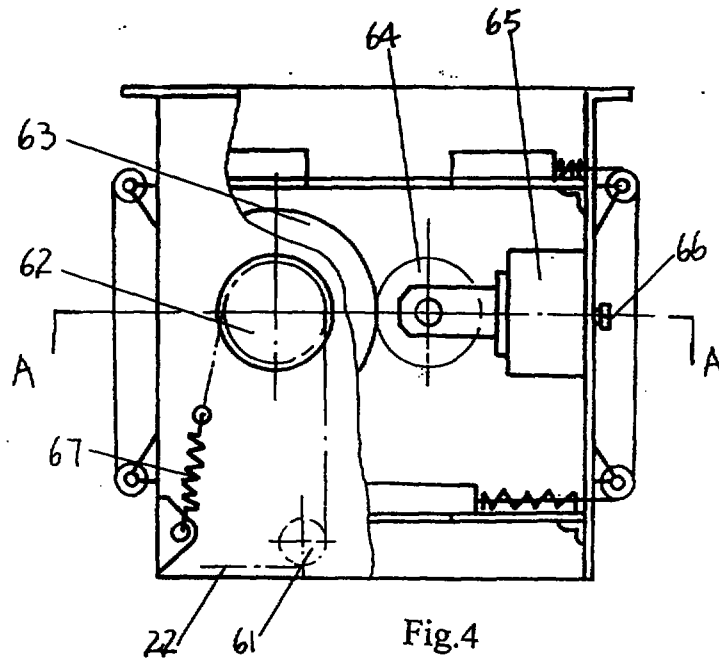


Fig. 1







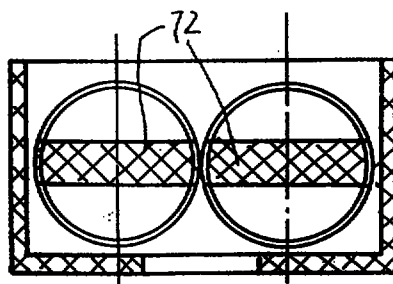
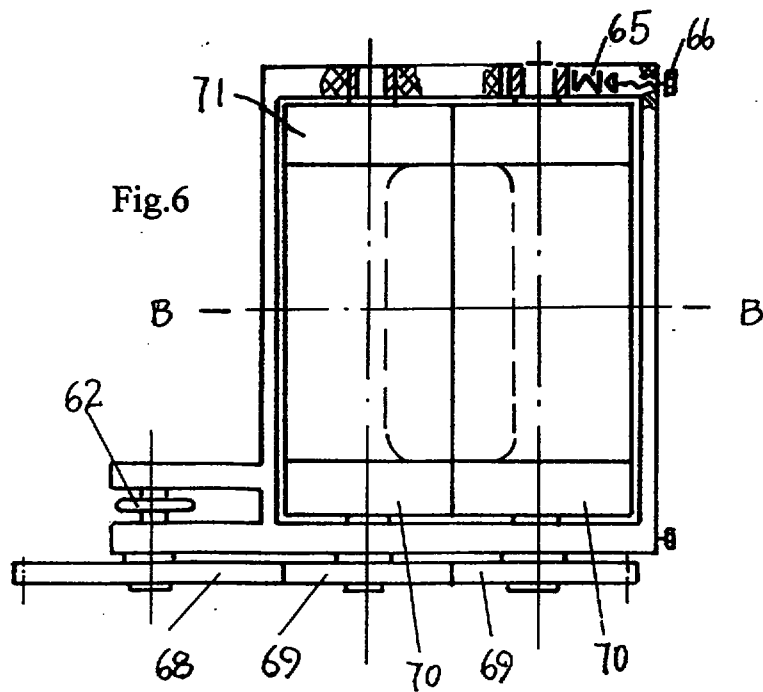


Fig.7

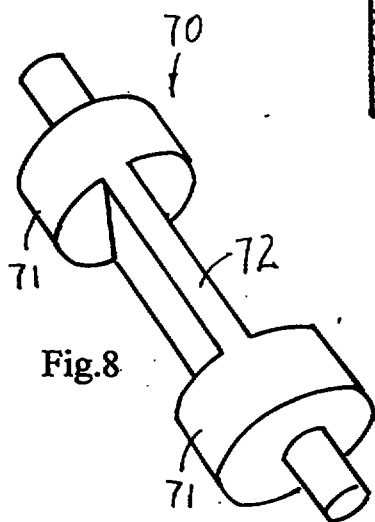


Fig.8

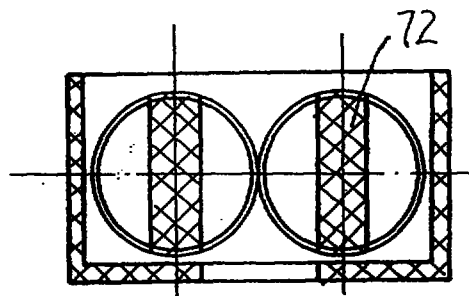
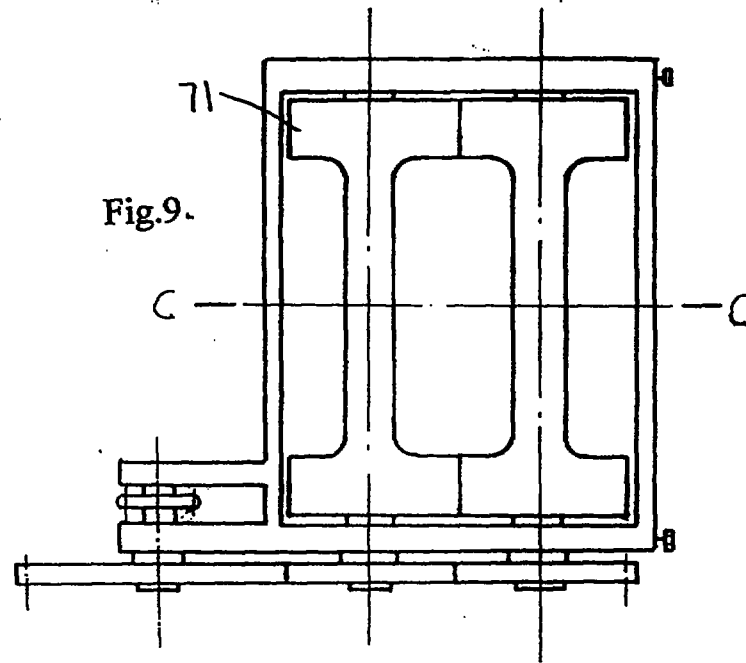


Fig.10

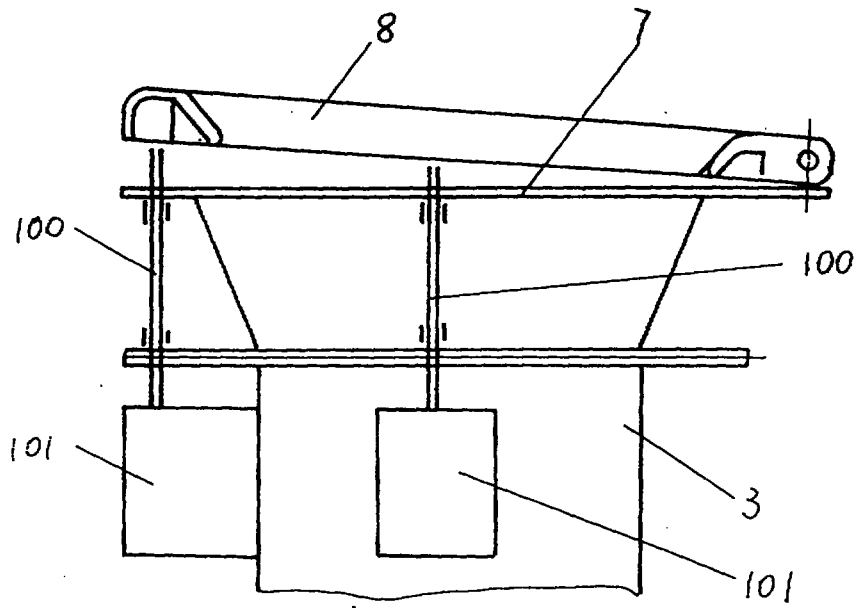


Fig.11

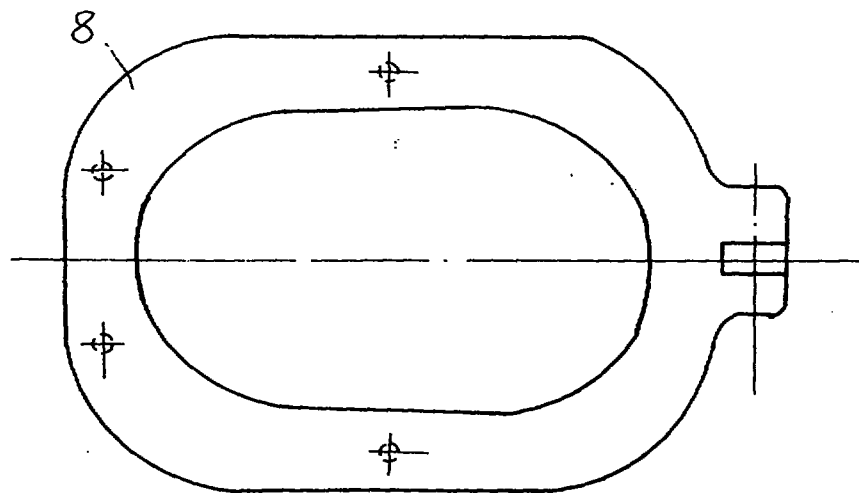


Fig.12

Fig.13

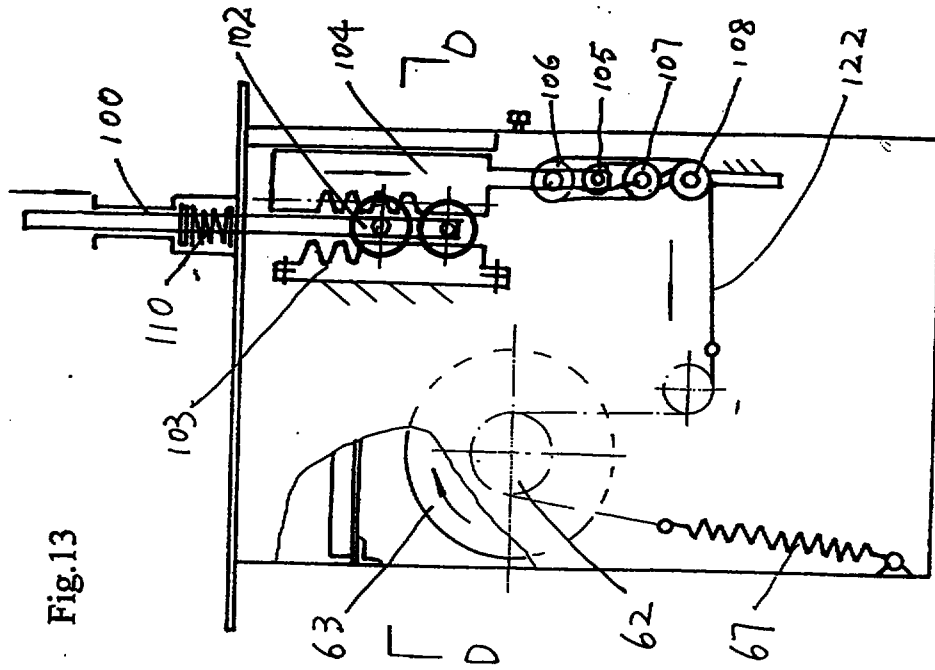
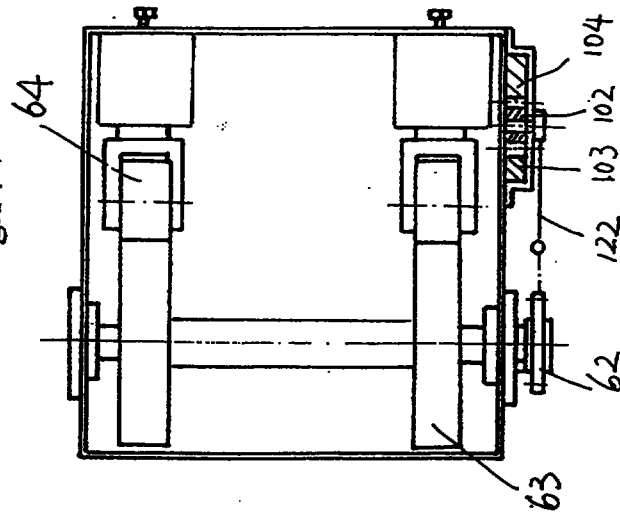
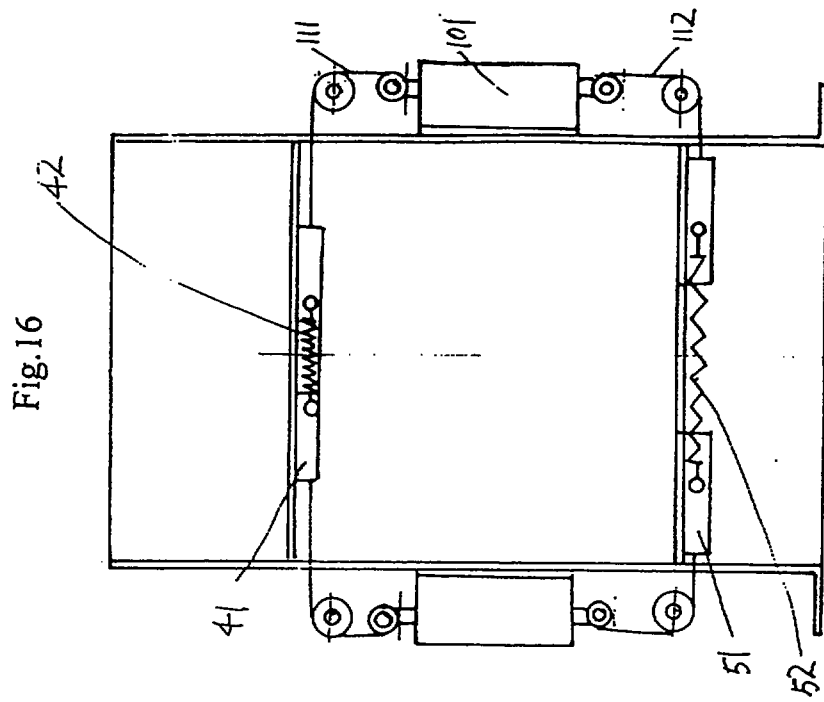
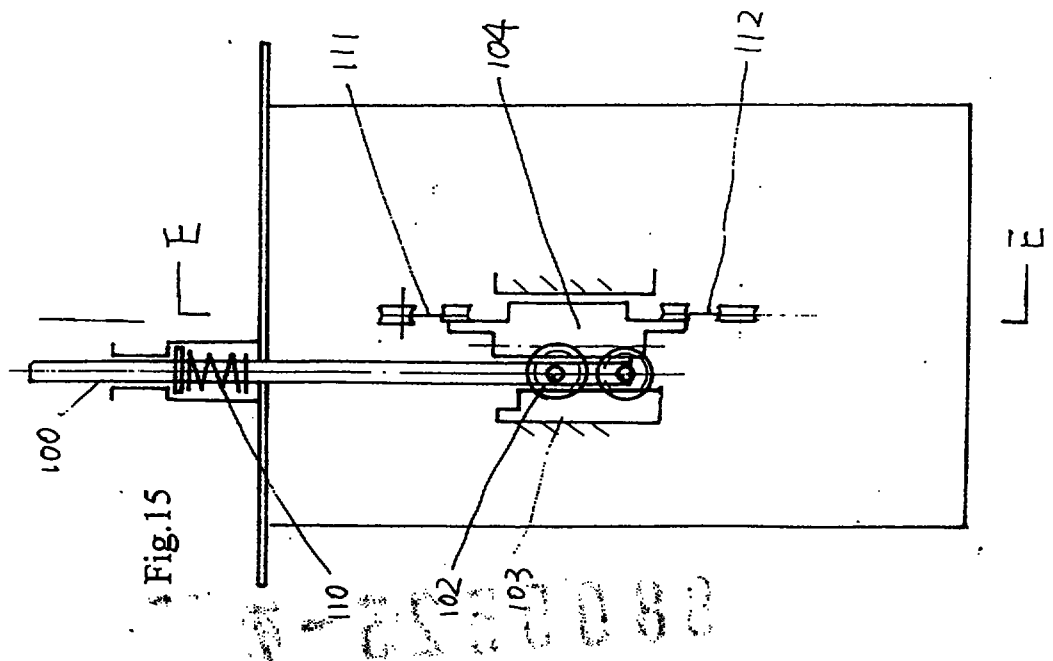


Fig.14





权 利 要 求 书

1. 一种全自动免冲洗洁具,包括一个箱体;安装在箱体上的成形腔;设置在成形腔上的座圈;一长筒形的塑料袋;安装在箱体中的用于控制成形腔与在箱体下面安装的盛便箱是否连通的牵引塑料袋的牵引开合机构;其特征就在于所述长筒形塑料袋的一端位于成形腔之外,另一端绕过所述座圈的表面,进入成形腔,并经过所述牵引开合机构进入所述的盛便箱,从而所述的塑料袋分为位于成形腔之外的备用部分、位于成形腔中的待用部分和位于所述牵引开合机构之下的用过部分;所述牵引开合机构与塑料袋的待用部分配合并通过带动所述待用部分而使所述备用部分的一部分沿所述座圈向所述成形腔内滑动而成为新的待用部分;所说箱体安装在一踏板上,所说踏板的后端与底座铰接,所说踏板的前端为摆动端,在其端部和底座之间安装一个压簧,在踏板上铰接至少一个控制牵引开合机构工作的曲拐,所说曲拐的一端滚压在底座的支撑板上,另一端与牵引开合机构连接。

2. 根据权利要求1所述的洁具,其特征就在于,所说牵引开合机构包括密封装置和牵引装置,所说密封装置具有一对安装在上隔板上的上密封门和一对安装在下隔板上的下密封门,上下密封门各有迫使其闭合的弹簧,上下密封门呈交替闭合状态,两上密封门通过滑轮组与两根拉索连接,两下密封门通过一对拉索及滑轮组与两上密封门连接,用于上密封门的弹簧弹力大于用于下密封门的弹簧弹力;所说牵引装置设置在上下密封门之间,并具有安装在一传动轴上的牵引轮,与牵引轮配合的压紧轮,一安装在传动轴上的链轮,所说链轮和牵引轮之间设有超越离合器;

所说曲拐有两个,一个用于控制密封装置的第一曲拐和一个用于控制牵引装置的第二曲拐。

3. 根据权利要求1所述的洁具,其特征就在于,所说牵引开合机构包括密封装置和牵引装置,所说密封装置具有一对安装在上隔板上的上密封门,在上密封门上装有迫使其闭合的弹簧,上密封门通过滑轮组与两根拉索连接,各拉索与所说第一曲拐相连;所说牵引装置设置在密封门之下,并具有安装在一传动轴上的牵引轮、与牵引轮配合的压紧轮和一安装在传动轴上的链轮;

所说曲拐有两个,一个用于控制上密封门的第一曲拐和一个用于控制牵引装置的第二曲拐。

4. 根据权利要求 2 或 3 所述的厕具,其特征在於,第一曲拐和第二曲拐运动方向相反,第一曲拐的摆动端通过一拉索及在拉索上连接的链条带动所说链轮转动;链条的另一端通过一拉簧与箱体连接,在所说第一曲拐的摆动端和底座之间连接一个复位弹簧,所说复位弹簧的弹力大于所说拉簧的弹力;第二曲拐与一对带动所说上密封门的拉索连接;在所说链轮和牵引轮之间设置超越离合器。

5. 根据权利要求 1 所述的厕具,其特征在於,所说牵引开合机构包括对称设置的两个辊轮,每个辊轮具有两个牵引轮部分,两牵引轮部分通过一处于辊轮轴线上的夹板相连接,夹板的最大宽度等于辊轮的直径,夹板的厚度小于辊轮的半径,两辊轮通过传动装置带动沿相反方向转动。

6. 根据权利要求 1 或 5 所述的厕具,其特征在於,所说曲拐的摆动端通过一拉索及在拉索上连接的链条带动一链轮,所说链条的另一端通过一拉簧与箱体连接,在所说曲拐的摆动端和底座之间连接一复位弹簧,所说复位弹簧的弹力大于所说拉簧的弹力。

7. 一种全自动免冲洗厕具,包括一个箱体;安装在箱体上的成形腔;设在成形腔上的座圈;一长筒形的塑料袋;安装在箱体中的用于控制成形腔与在箱体下面安装的盛便箱是否连通的牵引塑料袋的牵引开合机构;其特征在於,所述长筒形塑料袋的一端位于成形腔之外,另一端绕过所述座圈的表面,进入成形腔,并经过所述牵引开合机构进入所述的盛便箱,并分为位于成形腔之外的备用部分、位于成形腔中的待用部分和位于所述牵引开合机构之下的用过部分;所述牵引开合机构与塑料袋的待用部分配合并通过带动所述待用部分而使所述备用部分的一部分沿所述座圈向所述成形腔内滑动而成为新的待用部分;设置至少一个可垂直滑动的控制杆,所说座圈的后端铰接在成形腔上,控制杆的上端通过安装在其上的弹簧顶靠在座圈上,在控制杆的下部可转动地安装至少一个齿轮,该齿轮与一固定齿条和一滑动齿条相啮合,所说牵引开合机构与所说滑动齿条相连接。

8. 根据权利要求 7 所述的厕具,其特征在於,所说牵引开合机构与所说滑轮齿条通过一拉索相连接。

9. 根据权利要求 8 所述的厕具,其特征在於,在滑动齿条上安装有第

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一和第二动滑轮,在所说箱体上安装有第一和第二定滑轮,所说拉索的一端固定在箱体上,再按顺序绕过第一动滑轮、第一定滑轮、第二动滑轮和第二定滑轮,然后与牵引开合机构连接。

10. 根据权利要求1或7所述的厕具,其特征在于,在牵引轮部分下面设置一个可随其开合而开合的下密封门。

11. 根据权利要求10所述的厕具,其特征在于,所说下密封门为可绕枢轴转动的翻转门。

12. 根据权利要求1、2、3、5、7、8、9或11所述的厕具,其特征在于在成形腔内安装一个扩张环。

13. 根据权利要求1或7所述的厕具,其特征在于,所述厕具还包括一设置在箱体外周的塑料袋护罩。

What I claim is:

1. A fully automatic toilet ware without flushing including a case body, a shaped cavity mounted on said case body, a seat ring provided on said shaped cavity, a cover for a plastic bag provided over periphery of said case body and an open-close pulling mechanism mounted in said case body for controlling connection between said shaped cavity and an excrement holding case fixed under said case body, characterized in that one end of said plastic bag is located at outside of the shaped cavity, the other end through the shaped cavity bypass said cover of the seat ring, and then enter into said excrement holding case through said open-close pulling mechanism, thus said plastic bag divides three parts: the reserve part which is outside at the shaped cavity, the part which is to be used in the shaped cavity, and the used part which is under said open-close pulling mechanism; said open-close pulling mechanism which cooperated with the part that to be used of the plastic bag make a section of said reserve part become a new part that to be used by driving said to be used part and sliding along the inside of said shaped cavity; said case body is fixed on a pedal which has its rear end hinged with a base and its front end structured as a swing end, and between the end said base there is provided with a press spring, and said pedal is at least hinged with a crank for controlling the operation of said open-close pulling mechanism, and said crank has one end rolled in a supporting board of said base and the other end connected with said open-close pulling mechanism.
2. A toilet ware in accordance with claim 1. Characterized in that said open-close mechanism includes a sealing means and a pulling means, said sealing means has a pair of upper sealing doors mounted on an upper partition board and a pair of lower sealing doors mounted on a lower partition board and said sealing doors have respectively springs which may force them to close and said upper and lower sealing doors are alternatively opened or closed, and two upper doors are connected with two pulling ropes through pulleys and two lower doors are connected with said two upper doors through a pair of pulling ropes and pulleys, and a spring of said upper sealing doors are stronger than that of lower doors; said pulling means is provided between said upper and lower sealing doors and has a pulling wheel mounted on a



transmission shaft, a tension wheel, and a chain wheel mounted on said transmission shaft, and between said chain wheel and pulling wheel there is a surpassing clutch; There are two cranks, one first crank for controlling said upper sealing doors and one there are two cranks for controlling said pulling means.

3. A toilet ware in accordance with claim 1 characterized in that said open-close pulling mechanism includes a sealing means and a pulling means, said sealing means has a pair of upper sealing doors mounted on an upper partition board, and said upper sealing doors have springs which may force them closed and are connected with two pulling ropes through pulleys, said ropes are connected with said first crank; said pulling means are provided under said sealing doors and have a pulling wheel mounted on an mounted on said transmission shaft; a tension wheel cooperated with the pulling wheel and a chain wheel mounted on said transmission shaft.
There are two cranks, one first crank for controlling said upper sealing doors and one there are two cranks for controlling said pulling means.
4. A toilet ware in accordance with claims 2 or 3 characterized in that said first crank and second crank have opposite direction of movement, and said first crank has its swing end drive a chain wheel rotate through a pulling rope and a chain connected with said rope; said chain has the other end connected with said case body through an extension spring, and between said swing end of said first crank and said base there is connected with a reset spring, said reset spring has a stronger force than that of the extension spring, said second crank is connected with a pair of ropes bringing said upper sealing doors; there is a surpassing clutch provided between said chain wheels and pulling wheels.
5. A toilet ware in accordance with claim 1 characterized in that said open-close pulling mechanism includes two symmetrically provided rollers, of which each has two pulling wheel parts which are connected to one another by a plywood board positioned along the axis of said rollers, said plywood board has its maximum width equal to the diameter of said rollers and its thickness less than the radius of said rollers, said two rollers rotate in opposite directions driven by said transmission means.



6. A toilet ware in accordance with claims 1 or 5 characterized in that said cranks have their swing ends drive a chain wheel through a rope and a chain connected with said rope, said rope has the other end connected with said case body through a extension spring, between said swing end of said crank and said base there is connected with a reset spring, said reset spring has stronger force than that of said extension spring.
7. A fully automatic toilet ware without flushing including a case body, a shaped cavity mounted on said case body, a seat ring provided on said shaped cavity, a cover for plastic bag provide over periphery of said case body and an open-close pulling mechanism mounted in said case body for controlling connection between said shaped cavity and an excrement holding case under said case body, characterized in that one end of said plastic bag is located at the outside of the shaped cavity, the other end go through the shaped cavity bypass said cover of the seat ring, and then enter into said excrement holding case through said open-close pulling mechanism, thus said plastic bag divides three parts: the reserve part which is outside at the shaped cavity, the part which is to be used in the shaped cavity, and the used part which is under said open-close pulling mechanism; said open-close pulling mechanism which cooperated with the part that to be used of the plastic bag make a section of said reserve part become new part that to be used by driving said to be used part and sliding along the inside of said shaped cavity; at least one vertically movable control rod is provided over said cover of plastic bag, said rear end of said seat ring is hinged on said shaped cavity, said control rod has its upper end against said seat ring and the lower part of said control rod has at least one gear wheel movably fixed, said gear wheel is joggled with one fixed rack and a movable rack, said open-close pulling mechanism is connected with said movable rack.
8. A toilet ware in accordance with claim 7 characterized in that said open-closed pulling mechanism is connected with said movable rack through a pulling rope.
9. A toilet ware in accordance with claim 8 characterized in that on said movable rack there is mounted a first and a second movable pulleys, and on said case body there is mounted a with a first and second fixed pulleys, said pulling rope have one end fixed on said case body go on around said first movable pulley, first fixed pulley, second



movable pulley and second fixed pulley, and then is connected with said open-closed pulling mechanism.

10. A toilet ware in accordance with claims 1 or 5 characterized in that under said pulling wheel there is provide with a lower sealing door which may be opened and closed along its action.
11. A toilet ware in accordance with claim 10 characterized in that said lower scaling door is a turning door, which may rotate around said axis.
12. A toilet ware in accordance with claims 1,2,3,5,7,8,9 or 11 characterized in that there is an expanding ring fixed within said shaped cavity.
13. A toilet ware in accordance with claims 1 or 7 characterized in that said toilet ware also includes a plastic bag cover which is mounted on the outside of the case body.



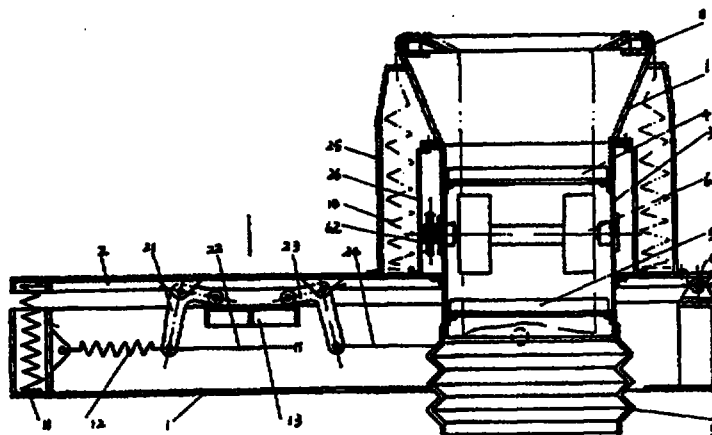


按照专利合作条约(PCT)所公布的国际申请

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(21) 国际申请号: PCT/CN96/00027 (22) 国际申请日: 1996年4月24日 (24.04.96) (71) (72) 申请人及发明人: 赫恩龙 (HE, Englong) [CN/CN]; 中国北京市朝阳区安外小关东里10号, 邮政编码: 100029, Beijing (CN). (74) 代理人: 北京市中原信达知识产权代理公司 (CHINA SINDA INTELLECTUAL PROPERTY LTD.); 中国北京市海淀区学院路41号希格玛商务中心4层, 邮政编码: 100088, Beijing (CN).	(81) 指定国: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO专 KE, LS, MW, SD, SZ, UG), 欧亚专利 (AM, AZ, KG, KZ, MD, RU, TJ, TM), 欧洲专利 (AT, BE, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, SE), OAPI专利 (BF, BJ, CF, CG, CI, CM, GA, GN, MR, NE, SN, TD, TG) 本国际公布: 包括国际检索报告。	

(54) Title: COMPLETELY AUTOMATIC WATERLESS CLOSET

(54) 发明名称: 全自动免冲洗厕具



(57) Abstract

A completely automatic waterless closet according to this invention includes a case (3), a shaping cavity (7) mounted on the case (3), an annular seat (8) mounted on the shaping cavity (7), a shield of the plastic bag (10) arranged around the case (3), and a pulling-opening-closing mechanism mounted in the case (3), said mechanism controls the shaping cavity (7) to connect with the receptacle collecting excrement and urine mounted below the case (3) and pulls the plastic bag (10). Said case (3) is mounted on a pedal (2), the back end of said pedal (2) is hinged to the base (1), the front end of said pedal (2) is a swing end, a compressed spring (11) is mounted between the front end part and the base (1), at least a crank controlling operation of the pulling-opening-closing mechanism is hinged to the pedal (2), one end of said crank presses rollingly on the support plate (13) of the base (1), the other end of said crank is connected with the pulling-opening-closing mechanism. The completely automatic waterless closet above mentioned is suitable to the areas without water and electricity, it can prevent cross-infection and isn't easy to produce mis-operation.

(57) 摘要

按照本发明的一种全自动免冲洗洁具, 包括一个箱体(3)、安装在箱体(3)上的成形腔(7)、设置在成形腔(7)上的座圈(8)、设置在箱体外围的塑料袋(10)护罩、安装在箱体(3)中的用于控制成形腔(7)与在箱体(3)下面安装的盛便箱连通、并牵引塑料袋(10)的牵引开合机构。所说箱体(3)安装在一踏板上(2), 所说踏板(2)的后端与底座(1)铰接, 所说踏板(2)的前端为摆动端, 在前端的端部和底座(1)之间安装一个压簧(11), 在踏板(2)上的铰接至少一个控制牵引开合机构操作的曲拐, 所说曲拐的一端滚压在底座(1)的支撑板上(13), 所说曲拐的另一端与牵引开合机构连接。上述的全自动免冲洗洁具适合于无电无水地区, 既防止了交叉感染, 又不易发生误动作。

以下内容仅供参考

在按照PCT所公布的国际申请小册子首页上所采用的PCT成员国国家代码如下:

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