

May 22, 1956

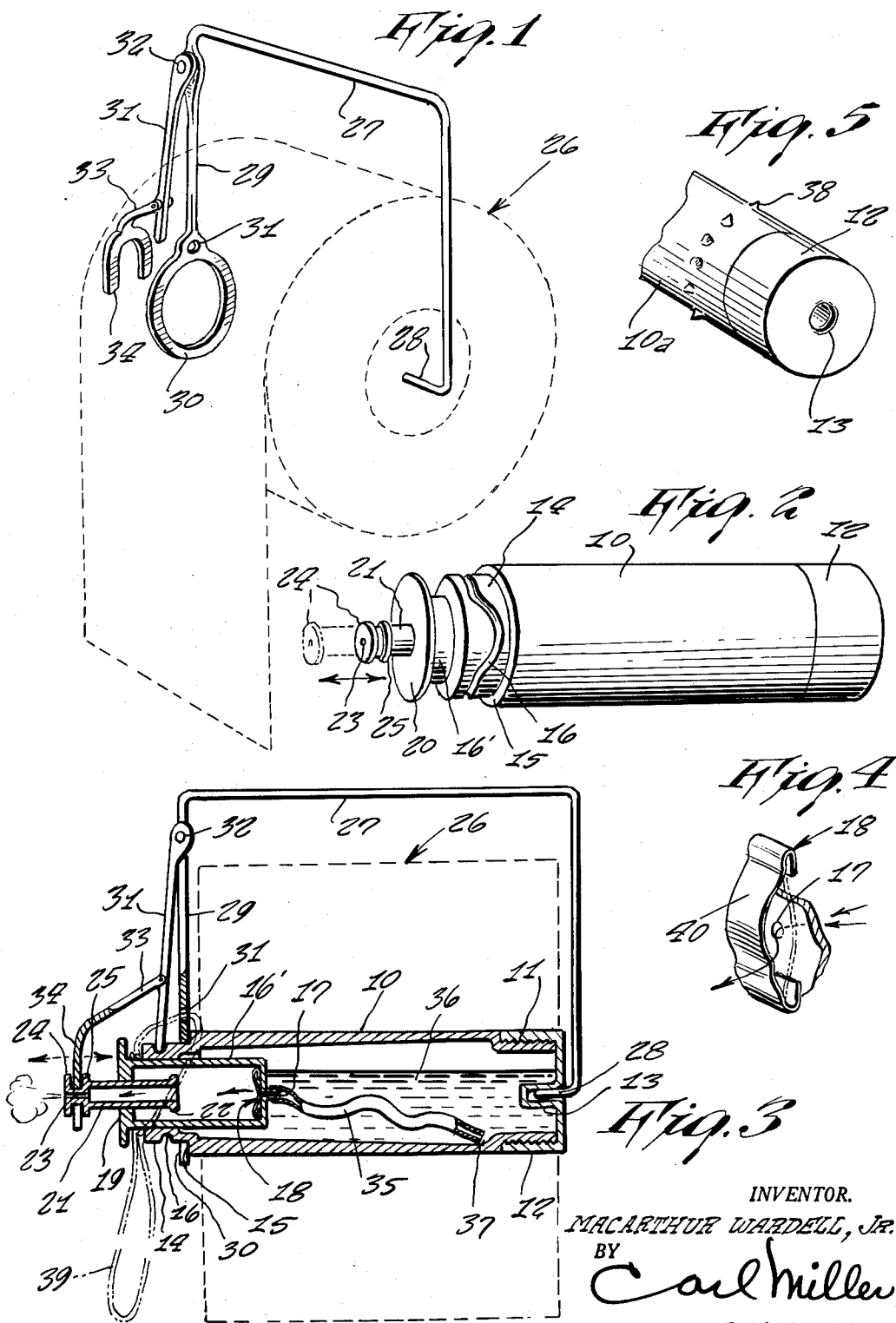
MACARTHUR WARDELL, JR

2,746,798

DEODORANT SPRAY TOILET PAPER HANGER

Filed May 18, 1955

2 Sheets-Sheet 1



May 22, 1956

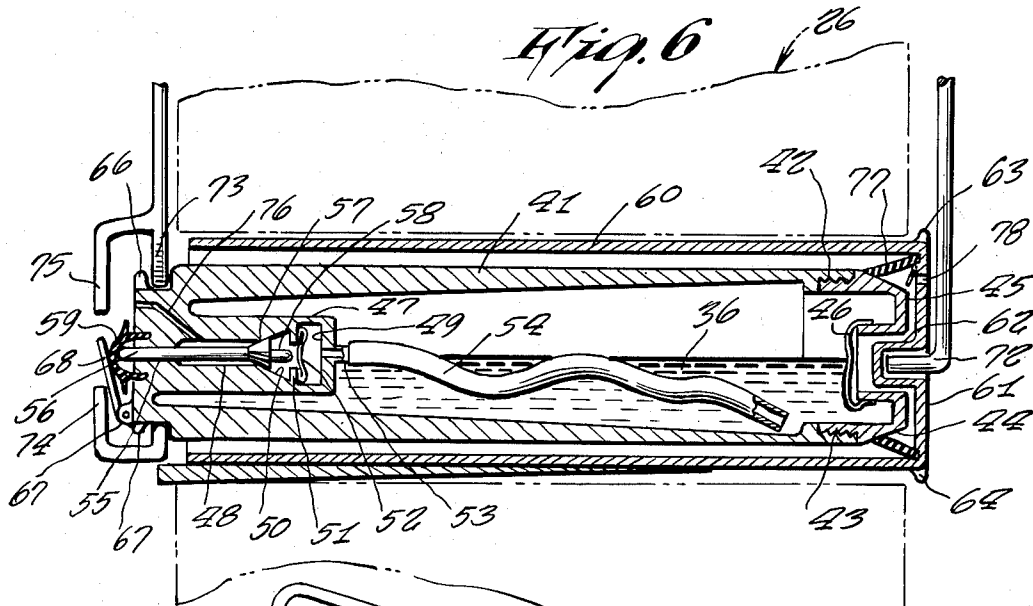
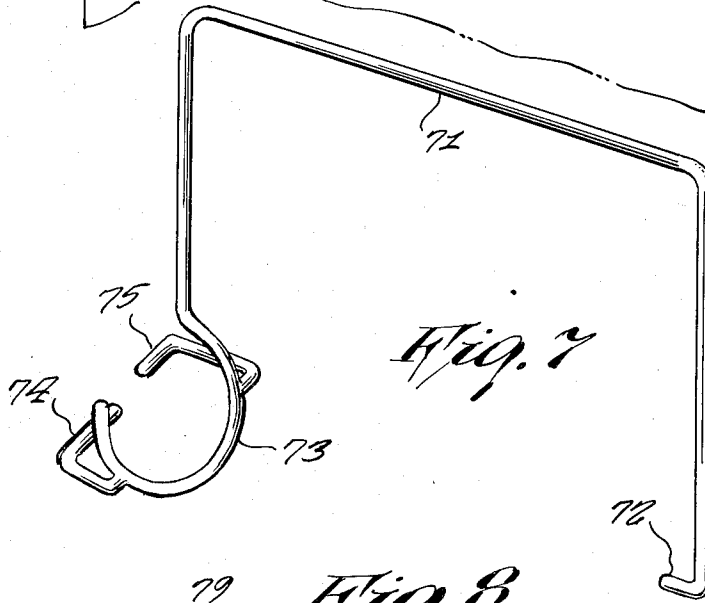
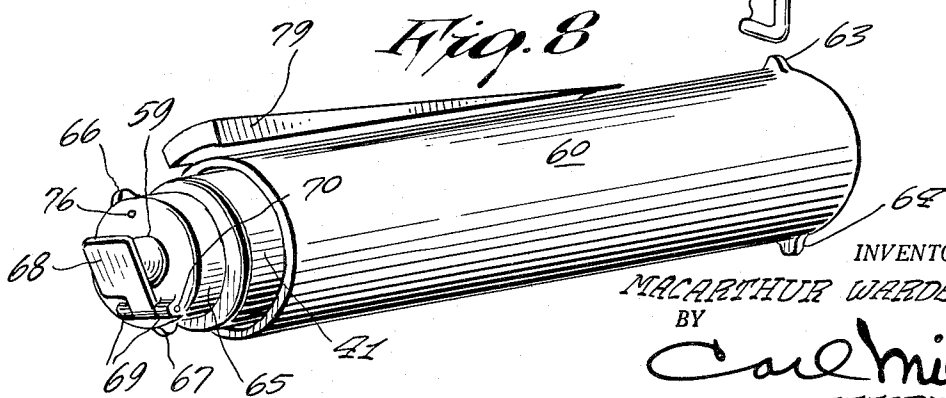
MACARTHUR WARDELL, JR

2,746,798

DEODORANT SPRAY TOILET PAPER HANGER

Filed May 18, 1955

2 Sheets-Sheet 2



INVENTOR.
MACARTHUR WARDELL, JR.
BY
Carl Miller
ATTORNEY

1

2,746,798

DEODORANT SPRAY TOILET PAPER HANGER

MacArthur Wardell, Jr., Jamaica, N. Y.

Application May 18, 1955, Serial No. 509,283

10 Claims. (Cl. 299—96)

This invention relates to toilet paper hangers.

It is an object of the present invention to provide a toilet paper hanger which will spray deodorant into the surrounding air as the toilet paper is consumed.

It is another object of the present invention to provide a toilet roll sprayer and deodorizer which will spray deodorizing material into the surrounding air upon the toilet roll being rotated as the toilet paper is consumed.

Other objects of the present invention are to provide a deodorant spray toilet paper hanger bearing the above objects in mind which is of simple construction, has a minimum number of parts, inexpensive to manufacture and efficient in operation.

For other objects and a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which:

Figure 1 is a perspective view of certain of the parts comprising a preferred embodiment of the present invention and showing the toilet roll in phantom;

Fig. 2 is a perspective view of certain other parts of the invention and showing the alternate positions of the pump valve in phantom;

Fig. 3 is a vertical sectional view of the invention in assembled relationship;

Fig. 4 is an enlarged fragmentary perspective view of the one way valve forming a part of the invention;

Fig. 5 is a fragmentary perspective view of a modified form of the present invention;

Fig. 6 is a view similar to Fig. 3 of a still further modified form of the present invention;

Fig. 7 is a perspective view of one of the parts of the modified form of the invention of Fig. 6; and

Fig. 8 is a perspective view of certain other of the parts of the modified form of the invention of Fig. 6.

Referring now more in detail to the drawing, and more particularly to Figs. 1 through 4, 10 represents a hollow cylindrical member having a reduced externally threaded end 11 onto which is screwed an internally threaded cap 12 having the same outside diameter as the cylinder 10 and provided with an indented recess 13 for a purpose which will hereinafter become clear. The cylinder 10 at the other end thereof is formed with a reduced hollow cylindrical portion 14 which forms with the cylinder 10 a shoulder 15, the reduced extension 14 being provided on the outside thereof with a cammed well groove 16 (Fig. 2). Mounted within the extension 14 is a hollow cylindrical member 16' having an inlet 17 at its inner end controlled by a one-way valve indicated generally at 18, the other end of the cylinder 16' having an end wall 19 integrally formed with a circular flange 20.

A hollow cylindrical reciprocating valve 21 is slidably mounted within an opening provided in the end wall 19 of the cylinder 16' being integrally formed at its inner end with a flange 22 whereby to limit its outward displacement. The outer end of the valve 21 is provided with a reduced bore or atomizer 23, the valve 21 on

2

opposite sides of the bore 23 being integrally formed with longitudinal spaced circular flanges 24 and 25.

The toilet paper roll indicated generally at 26 is positioned on the cylinder 10 and cap 12 (Fig. 3) in a frictional fit therewith whereby upon consumption of the toilet paper, the cylinder 10 will rotate and with it the cammed well 16. The assembly is supported on the L-shaped rod 27 formed at one end with an inwardly extending portion 28 which is rotatably received within the indented opening 13 in the cap 12 whereby to support one end of the assembly. The other end of the L-shaped rod 27 is integrally formed with the depending member 29, which terminates at its lower end in the ring 30 which rotatably receives therethrough the cylindrical extension 14, the ring 30 abutting the shoulder 15 whereby to rotatably mount the assembly at both ends. The ring 30 is provided with an opening 31 for a purpose which will hereinafter become clear. A link 31 is pivotally mounted at its upper end on the depending portion 29 by means of a pin 32 and pivotally mounts at its lower end the bifurcated portion 33 of the yoke shaped member 34 which is adapted to straddle the valve 21 intermediate the flanges 24 and 25. The lower end of the link 31 rides in the cammed well 16.

A flexible tube 35 is connected to the inlet 17 at one end and the other end thereof rests on the bottom of the cylinder 10 adjacent the cap 12 (Fig. 3). The cylinder 10 is filled with the deodorant (liquid) 36 and it will be noted that the inner walls of the cylinder are tapered so as to concentrate the residue adjacent the lower end of the tube 35 near the shoulder 37.

In operation, upon the toilet roll 26 being rotated upon consumption of the toilet tissue, the cylinder 10 will rotate and therealong with it the extension 14 and the cammed well 16. This will cause the link 31 to move back and forth about its pivot 32 which causes the yoke 34 to reciprocate the valve 21 and to draw the liquid deodorant 36 into the cylinder 16' through the one-way valve 18 and to force it out through the atomizing opening 23 into the surrounding air automatically as the paper is consumed.

Referring now particularly to Fig. 5, there is shown a modified form of the present invention wherein the cylinder 10a is integrally formed with the angularly spaced prongs 38 which will embed themselves in the core of the roll and to prevent displacement of the roll relative to the cylinder.

A pull string 39 may also be provided for alternate operation of the device, the pull string 39 being threaded through the opening 31.

As shown in Fig. 4, the one-way valve 18 includes a diaphragm 40 which is adapted to move against the inlet opening 18 to prevent the return flow of liquid. However, upon the liquid being drawn inwardly, the diaphragm 40 will be displaced to permit the entrance of the liquid deodorant into the cylinder 16'.

Referring now particularly to Figs. 6, 7 and 8, there is shown a modified form of the present invention including a hollow cylindrical member 41 having an internally threaded end 42 into which is screwed the externally threaded shank 43 of a cap 44 having an inlet opening 45 across which is disposed a one-way valve or diaphragm 46. The other end of the cylinder 41 is closed and is integrally formed with the inwardly extending core 47 having a central bore 48 which communicates with an enlarged bore 49 through the frusto-conical bore 50, a partition 51 separating the bore 50 from bore 49 and having a one-way valve 52 thereacross. The inner end of the core 47 is provided with an inlet 53 to which is connected a flexible tube 54 and which communicates with the bore 49. The core 47 at its outer end is provided with a reduced bore 55 which communi-

3

cates with the bore 48 and which slidably mounts the valve stem 56 provided at its inner end with the valve or frusto-conical member 57 adapted to be seated in the frusto-conical bore 50 when in the position of Fig. 6, the valve stem 56 extending beyond the valve 57 as at 58 and being adapted to contact the diaphragm 52 upon inward movement. A rubber cap 59 surrounds the outer end of the valve stem 56.

A hollow cylindrical sleeve 60 surrounds the cylinder 41 in freely spaced relationship thereto and is formed at one end with the end wall 61 having the indented opening 62 which is received inwardly within the inlet 45 of the cap 44. The end wall 61 is formed with the oppositely disposed tabs 63 and 64. The tabs 63, 64 will limit the inward displacement of the sleeve 60 through the toilet paper roll indicated generally at 26, as will be obvious.

The other end of the cylinder 41 is reduced, as at 65, and is integrally formed at the end thereof with the oppositely disposed tabs 66 and 67. A flapper 68 is pivotally mounted below the rubber cap 59 by means of the hinge lugs 69 and pin 70, the flapper 68 abutting the rubber cap 59.

The assembly is supported by means of a U-shaped rod 71 formed at one end with the inwardly extending portion 72 which is journaled in the indented opening 62. The other end of the rod is integrally formed with the circular portion 73 which is received on the reduced portion 65, the ring 73 being retained thereon by the tabs 66 and 67 whereby to support the assembly at both ends. The ring 73 is integrally formed with the oppositely disposed L-shaped fingers 74 and 75 which, as shown in Fig. 6, are adapted to contact the flapper 68 upon rotational movement of the assembly and the toilet paper roll, as the paper is consumed. This will force the valve stem 56 inwardly to move the valve 57 from the seat 50 and to oscillate the diaphragm 52, causing the liquid deodorant and the deodorizer 36 to be drawn through the tube 54 and into the bore 48. The cylinder 41 at the end thereof is provided with an outlet bore 76 which communicates with the bore 48 and dispenses the deodorizer into the surrounding air.

As a means of building up pressure within the cylinder 41, the end wall 61 of the sleeve 60 is connected to the cap 44 by means of the frusto-conical rubber skirt 77, the end wall 61 being provided with a one-way valve 78. Upon reciprocation of the sleeve 60 relative to the cylinder 41, the air will be forced through the one-way valve 78 and through the one-way valve 46 to build up pressure within the cylinder 41, as will be obvious.

In order to insure frictional engagement between the sleeve 60 and the core of the toilet paper roll 26, an elongated wedge 79 is provided and is inserted down inwardly between the core of the toilet paper roll and the outside of the sleeve 60.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention, as defined by the appended claims.

Having thus set forth and disclosed the nature of my invention, what is claimed is:

1. A deodorant spray toilet paper hanger comprising a hollow cylindrical container for liquid deodorant, said container fitting into the core of the toilet paper roll in frictional engagement therewith, whereby to rotate as the toilet paper is consumed, means for rotatably supporting said cylindrical member and the toilet paper roll, valve means for spraying the liquid deodorant into the surrounding air, and means actuable upon the toilet paper being consumed and said cylinder being rotated for operating said valve means.

2. A deodorant spray toilet paper hanger according to claim 1, said valve means comprising a reduced cylindrical extension at one end of said cylinder having a cammed well around the outside thereof, a cylinder mounted within said extension and extending outwardly therefrom,

4

and a cylindrical valve slidable in the outer end of said cylinder, said second cylinder having an inlet connected to a flexible tube extending downwardly into the bottom of said first cylinder, a one-way valve across said inlet, said valve having a restricted outlet whereby to atomize the spray upon reciprocation movement thereof.

3. A deodorant spray toilet paper hanger according to claim 2, said means for operating said valve comprising a link pivotally connected at its upper end to said means for rotatably mounting said cylinder, the lower end of said link riding in said cammed well, a second bifurcated link pivotally connected to said first link, said bifurcated link terminating in a yoke-shaped portion, said valve having longitudinally spaced flanges receiving said yoke-shaped member therebetween.

4. A deodorant spray toilet paper hanger according to claim 3, said means for supporting said cylinder comprising said cylinder at the other end thereof having an indented opening, an L-shaped rod having an inwardly bent end received within said indented opening, said L-shaped rod at the other end thereof being integrally formed with a depending member terminating in a ring received on said reduced cylindrical extension, said first link being pivotally connected to said depending member.

5. A deodorant spray toilet paper hanger according to claim 4, said ring having an opening at the top thereof and a pull string threaded through said opening for alternate operation of said valve.

6. A deodorant spray toilet paper hanger according to claim 1, said cylinder at the end thereof remote from said valve means being externally threaded, an internally threaded cap screwed thereon having said indented opening, said cylinder adjacent said cap being provided with a plurality of angularly spaced prongs adapted to engage the toilet paper core.

7. A toilet paper hanger according to claim 1, said valve means comprising said cylinder at one end being integrally formed with an inwardly extending core having a longitudinal bore connecting with an enlarged bore at the inner end thereof to a frusto-conical bore, a one-way valve intermediate said enlarged and frusto-conical bores, said core having an inlet communicating with said enlarged bore and connected to a flexible tube extending downwardly into the bottom of said container and liquid, a valve stem slidable through said longitudinal bore extending outwardly through the outer end of said bore, a valve on said valve stem adapted to seat within said frusto-conical bore, means for reciprocating said valve stem upon rotation of said cylinder, and means for increasing the pressure of the liquid within said cylinder.

8. A deodorant spray toilet paper hanger according to claim 7, said core having an outlet bore communicating with said longitudinal bore, said means for supporting said cylinder comprising an outer sleeve extending along said cylinder and terminating in an end wall having an indented bore, said cylinder having an internally threaded end, an externally threaded closure cap screwed into said internally threaded end and having an inlet receiving said indented opening therewithin, a one-way valve across said inlet, said cylinder at the other end thereof being formed with a reduced cylindrical extension, said supporting means comprising a U-shaped rod having inwardly bent end received within said indented opening, the other end of said rod having a circular ring formation which is slidably received on said cylindrical extension.

9. A deodorant spray toilet paper hanger according to claim 8, said means for reciprocating said valve stem comprising a rubber cap surrounding the same at the end of said extension, a flapper contacting said cap pivotally mounted therebelow and a pair of inwardly extending fingers oppositely disposed on said ring and adapted to force said flapper inwardly against said cap upon rotational movement of said cylinder.

10. A deodorant spray toilet paper hanger according to claim 9, said means for increasing the pressure within

5

the cylinder comprising a rubber skirt connecting the end of said cylinder with the end of said sleeve, said sleeve enclosure having an inlet one-way valve communicating with said first inlet one-way valve whereby upon reciprocation of said sleeve relative to said cylinder, the internal pressure therein will be built up.

5

6

References Cited in the file of this patent

UNITED STATES PATENTS

598,053	Lewis	Jan. 25, 1898
1,110,653	Smart	Sept. 15, 1914
2,611,647	Ash	Sept. 23, 1952