May 26, 1953 H. I. MATCHETT 2,639,939

DEODORIZING TOILET PAPER HOLDER

Filed Oct. 8, 1951 2 Sheets-Sheet 1

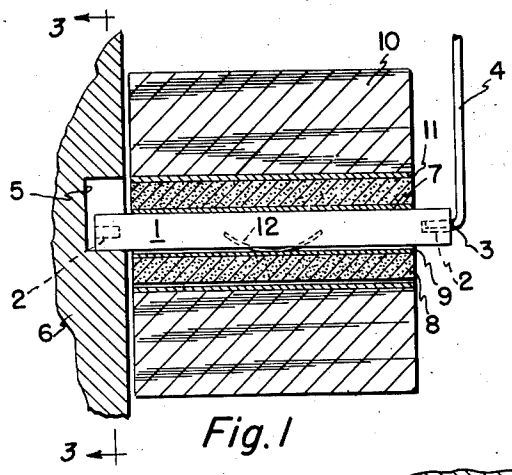


Fig. 1

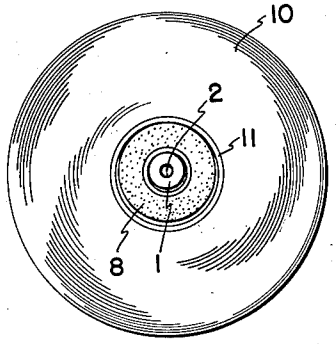


Fig. 2

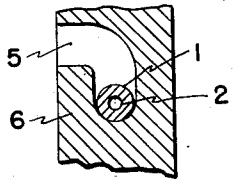


Fig. 3

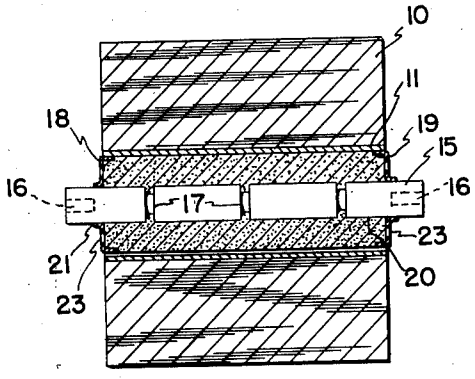


Fig. 4

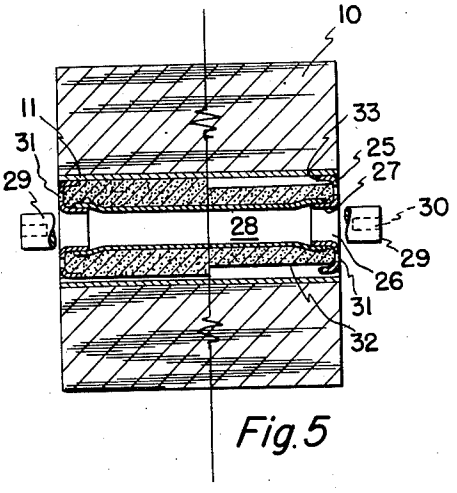


Fig. 5

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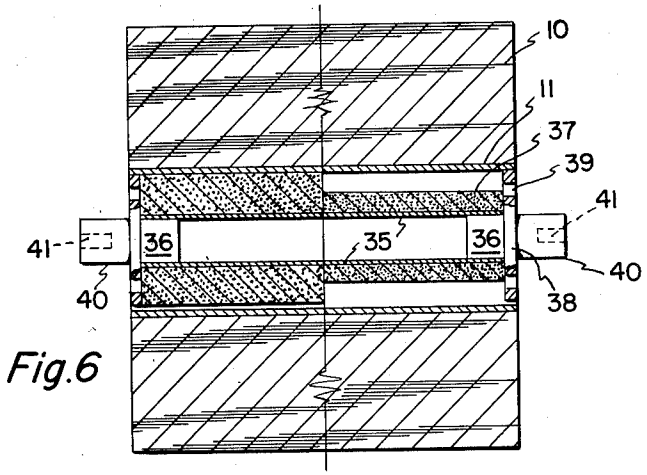


Fig.6

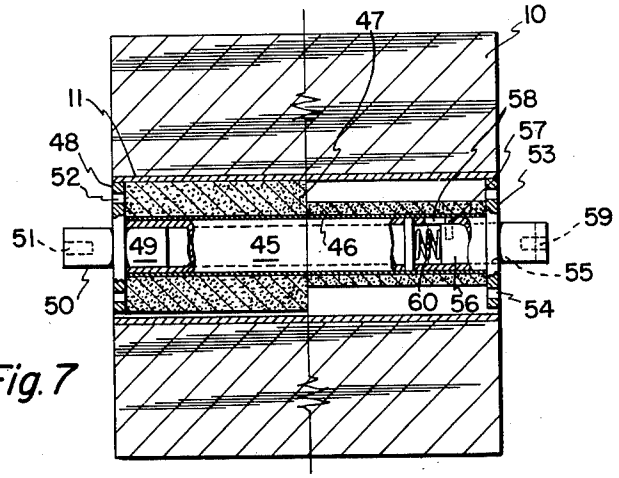


Fig.7

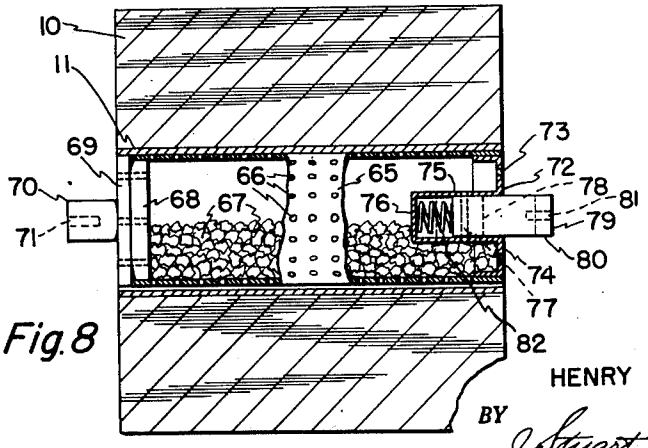


Fig.8

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DEODORIZING TOILET PAPER HOLDER

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4 Claims. (Cl. 299—24)

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The object of the invention is to provide improvements in devices used to impart to the atmosphere of a given room or other area relative fragrance, and more especially to offset or counteract offensive or fetid odors in such an area, as for example in a toilet, lavatory, or privy.

In rooms designed and set aside more or less exclusively for use as toilets, various provisions are made for operatively supporting rolls of toilet paper. These may take the form of recessed tiles in a wall, or a depending pair of wire elements, having inwardly directed angular end portions, usually comprising integral extensions of a single wire or the like, and in any case detachably supporting the opposite ends of a suitable spindle, which is surrounded by the inner tubular cardboard core that carries the usual roll of paper.

While the invention will be hereinafter described as for use in toilets, it is to be understood that the holders for operatively supporting the fragrant volatilizable chemicals may be placed in any chamber or other enclosure, where there exist odors of fetid, malodorous, nidorous and other obnoxious scents, whether continuously or intermittently, so that the offensive odors of whatever sort may be neutralized or counteracted by more pleasant odors, until the former can be expelled and the atmosphere freshened.

Another and more specific object is to provide as one embodiment of the invention the combination of a perforated cylindrical casing adapted to enter and support an ordinary roll of toilet paper, in combination with a preferably fixed closure for one end of said cylinder that preferably provides a yieldingly positioned trunnion for resiliently securing the device in one of the usual supporting tiles or wire holders, the opposite end of said cylinder being normally closed by removable trunnion element, and the interior of said cylinder receiving deodorizing chemicals, which in volatilizing impart the desired fragrance to the surrounding atmosphere.

A further object is to provide a relatively slender tube, rod, or other form of mandrel, which is adapted to be inserted into the axial bore of a cylindrical body of the proper chemicals, and said mandrel being provided with a preferably fixed flange on one end and a detachable flange upon the other end, said flanges initially cooperating with the fragrant body to support the paper roll, or supporting the said roll unaided by said intervening body, and means to permit the assembled unfit to be removably secured in operative position in the particular type of wall support at hand.

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Still another object is to provide a more simple form of the device, that comprises a slender mandrel preferably provided with surface irregularities, and a volatilizable body molded directly upon said mandrel, the said body directly supporting the paper roll, and the ends of said mandrel being provided with axial bores for the reception of wire supporting elements, while the ends of the mandrel serve to provide trunnions to enter the recesses of a wall tile, and thereby rotatably support a paper roll with respect thereto.

A still further object is to provide a slender mandrel, that is insertable through a similar size of bore in a volatilizable body, and directly supports a paper roll until the said body has completely disappeared through vaporization when the mandrel supports the roll, and the ends of said body if desired being protected by thin metal end members having peripherial cylindrical flanges, that if desired may serve as supports for the said roll after said body has partially or entirely disappeared from between them, the opposite ends of said mandrel in this instance functioning as with the form last above referred to.

And still another object is to provide a compressed body of suitable chemicals, that is adapted for use in two or more of the modifications hereinbefore described, and essentially comprising a solid cylindrical mass having an axial bore, adapted to slideably receive the mandrels referred to.

With the objects thus briefly set forth, the invention comprises further details of construction and operation, which are hereinafter fully described in the following specification, when read in conjunction with the accompanying drawings, in which Fig. 1 is a vertical longitudinal section through a roll of toilet paper operatively supported by and surrounding a mandrel composed of volatile material of the general character described and comprising one embodiment of the invention; Fig. 2 is an end elevation of the same; Fig. 3 is a fragmentary sectional view on the line 3—3 of Fig. 1; Fig. 4 is a vertical longitudinal section through a modified form of so-called deodorizing mandrel and roll of toilet paper supported thereby; Fig. 5 is a similar section showing another modification of said deodorizing mandrel; and Figs. 6, 7 and 8 are similar sections through further modified forms of the invention.

Referring to Figs. 1, 2 and 3, there is here initially shown a slender cylindrical mandrel 1 of wood or plastic, whose ends are provided with axially positioned, inwardly extending, shallow bores 2 for the reception of the angular end

portions 3 of wire supports 4, such as are widely used in many places. To obviate the necessity otherwise of having to show an additional separate figure, the right hand end only is shown as being suspended by a wire holder, while the left hand end is shown as extending rotatably into a recess 5 in a wall tile 6, such as is usually found in tiled toilets, bathrooms and lavatories. The mandrel 1 is slideably inserted through the axial bore 7 of a cylindrical molded body 8 of fragrant volatile material, said bore preferably though not necessarily being lined with a tube 9 of paper, cardboard, or other suitable material. Finally, a roll of paper 10 having a tubular cardboard lining 11 in its axial bore surrounds said fragrant body. To prevent longitudinal shifting of the molded body with respect to its supporting mandrel, the latter may be provided with any suitable form of ribbon or wire spring 12, the ends of which may be embedded within said mandrel, while its central portion extends radially and yieldingly from said mandrel, and operates to frictionally engage and prevent relative movement between said body and said mandrel in any direction. In this form of the invention, as the material of the molded body volatilizes and thereby reduces in its outside diameter, the paper roll resting thereon obviously descends until in time its tubular core rests upon the body core 9, present, or otherwise directly upon said mandrel, whereupon a refill body is placed in operative position as shown.

Referring to Fig. 4, a central mandrel 15 is here shown as being provided with axially aligned bores 16 in its ends for the purpose above described, and also with one or more peripheral grooves 17. Adjacent to the ends of and surrounding said mandrel in this form of the invention are thin metal discs or plates 18, the outer edge portions of which are deflected towards each other to provide aligned cylindrical flanges 19, while a central bore 20 of each plate is surrounded by a preferably outwardly directed flange 21, that frictionally grips the surface of said mandrel, so as to secure between said plates a molded body 22 of fragrant volatile material, said plates being provided with a plurality of apertures 23 for the passage of vapors from said body, while a similar escape of fumes takes place in the narrow space between the lower portions of said body and the tubular core 11 of the paper roll. In this form of the device, as the volatile body decreases in size through vaporization, the weight of the paper roll is carried by the flanges 19 of the plates 18, so that there is no dropping of the roll with respect to the supporting mandrel, and when the fragrant body has been completely expended a fresh unit is installed, comprising a similar mandrel, surrounding molded body and end plates, said mandrel and plates being formed of relatively low-cost or waste materials, and said mandrel being supported either by wires or between tiles as first above described.

Referring to Fig. 5, a pair of end plates 25 are shown as being provided with central apertures 26, surrounded by cylindrical flanges 27 that extend into and are secured to the opposite ends of a tubular core 28, which together with said flanges normally receives the central portion of a slender mandrel 29, only the opposite end portions of which are shown outside of but in alignment with said core, said end portions preferably being provided with wire-

receiving bore 30. Radially outwardly of said central apertures, each of said plates is provided with a plurality of apertures 31 for the passage of vapors from and during the volatilization of a body 32 of molded material positioned between said plates around said core, and whose end portions are partially enclosed within peripheral protective cylindrical flanges 33. In this form of the device the mandrel 29 is preserved, and as the body 32 vaporizes the core 28 and the end plates connected thereby are discarded and a new fragrant unit made to surround said mandrel. The paper roll 10 and its tubular core 11 are similar to those used with each of the several forms of the device here described. Also, as in the form shown in Fig. 4, the right hand side of Fig. 5 is intended to indicate how the flanges 33 continue to support the paper roll core 11 after the intervening body 32 has either partially or completely volatilized.

Referring to Fig. 6, a tubular core 35 is shown as being closed at its opposite ends by means of similar plugs 36, one of which may be permanently secured in place if desired, but in any case one of them must be removable in order to permit a refill 37 to be placed between them, said refill comprising a molded body of fragrant volatilizable material as previously referred to. Preferably each of said plugs also comprises radial flanges 38 having exit apertures 39, and oppositely projection trunnions 40 that if provided with axial bores 41 may be supported by wire holders, as well as being supportable in and between tiles as hereinbefore described. The right hand side of this figure indicates how after some or all of the said body has vaporized, the weight of the usual core 11 of the paper roll 10 continues to be supported by said plug flanges, and thus maintained in coaxial relation with respect to the plugs 36—49.

Referring to Fig. 7, a somewhat more expensive form of the device is here shown as comprising a tubular mandrel 45, that is normally surrounded by a lining core 46 of a cylindrical body 47 of volatile material, which is retained upon said mandrel in one direction by the annular flange 48 of a plug 49, having an outwardly projecting trunnion extension 50, said trunnion preferably being provided with a bore 51 for the reception of a wire support (not shown), while said flange is provided with apertures 52 for the escape of vapor from said body as the latter volatilizes. In the opposite direction said body is maintained upon said mandrel by means of a disc 53, that is secured to the mandrel and provided with vapor-escape apertures 54, while through a central aperture 55 in said disc is slideably positioned a plug 56, having a radial pin 57 that extends outwardly and is slideable in a longitudinal slot 58 in said mandrel, said plug extending outwardly beyond said flange to provide a trunnion having an axial bore 59, equivalent to the corresponding bore 51 in the plug 49. Said last-mentioned plug is normally maintained in outward position by means of a compression coil spring 60 within said mandrel, and which spring is limited as to its movement into said mandrel by means of a transversely extending pin 61 or other suitable member. In this form of the device, as in others above described, the weight of the paper roll 10 and its cardboard tube 11 are carried by the flange 48 and the disc 53, as the diameter of said body 47 decreases, as indicated at the right hand side of said figure.

Referring to Fig. 8, the modification of the invention here shown provides for the use of volatile crystals instead of the molded body hereinbefore referred to, and comprises a preferably metallic cylinder **65** having a plurality of apertures **66** for the escape of vapor from crystals **67**. The left hand end of said cylinder is normally closed by a removable plug **68**, having a peripheral flange **69** that limits its movement inwardly as it abuts directly against the end of said cylinder, and is provided exteriorly with a trunnion extension **70**, having a central bore **71** for a wire support as before mentioned. Secured in the opposite end of said perforated cylinder is a disc **72**, having apertures **73** and a peripheral cylindrical flange **74**, that engages the inner surface of said cylinder, while axially said disc is provided with a tubular extension **75**, that projects into said cylinder and is closed at its inner end by a wall **76**. A pin **77** extends diametrically through this extension and slideably through an elongated aperture **78** in a plug **79**, that in projecting freely through and from said disc provides a second trunnion **80**, having an axial bore **81** corresponding with the similar bore in the plug **70**, said plug **79** being forced outwardly by a compression coil spring **82**. In this form of the device, when the crystals **67** have completely evaporated or volatilized, the plug **68** is removed from the perforated cylinder **65** and more crystals placed therein, after which said plug is replaced as shown, and the device is ready for mounting in a wire holder or between a pair of recessed tiles as hereinbefore described.

Having thus described my invention, what I claim and desire to protect by Letters Patent of the United States is:

1. A deodorizing support for a toilet paper roll, comprising a cylindrical body of volatile material having an axial bore, a pair of plugs extending into said bore and also projecting therefrom to provide supporting trunnions, and an annular disc surrounding each of said plugs intermediate its ends and provided with apertures to permit escape of the scent emanating from said body, said discs supporting an encircling paper roll independently of said body as said body diminishes diametrically through volatilization.

2. A deodorizing support for a toilet paper roll, comprising a cylindrical body of fragrant volatile material having an axial bore, a tubular lining for said bore, a pair of plugs extending into said bore and also projecting therefrom to provide supporting trunnions, an annular disc surrounding each of said plugs intermediate its ends and provided with apertures to permit escape of scent emanating from said body, said discs initially supporting an encircling paper roll, and continuing to support said roll after said body has shrunken diametrically through volatilization.

3. A deodorizing support for a toilet paper roll, comprising a mandrel having axially extending end recesses, plugs projecting from within said recesses to provide freely extending trunnions, annular discs surrounding said plugs, one of said plugs being resiliently positioned with respect to said mandrel, and a cylindrical body of volatile material surrounding said mandrel between said discs, and said discs being operative to support a surrounding roll of toilet paper independently of said body, as said body diminishes in size diametrically through volatilization.

4. A deodorizing support for a toilet paper roll, comprising a mandrel having axially inwardly extending bores, plugs projecting from within said bores to provide freely extending trunnions, annular discs surrounding said plugs, one of said plugs being removably positioned in its receiving bore and the other plug being resiliently positioned in its bore, a cylindrical body of volatile material having an axial bore, and a tubular liner for said last-mentioned bore surrounding and in slideable engagement with said mandrel between said discs, said discs being operative to support an encircling roll of toilet paper independently of said body as said body diminishes in size diametrically through volatilization.

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