

[54] TREATMENT DEVICE

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248/340, 368; 118/76 S; 137/268

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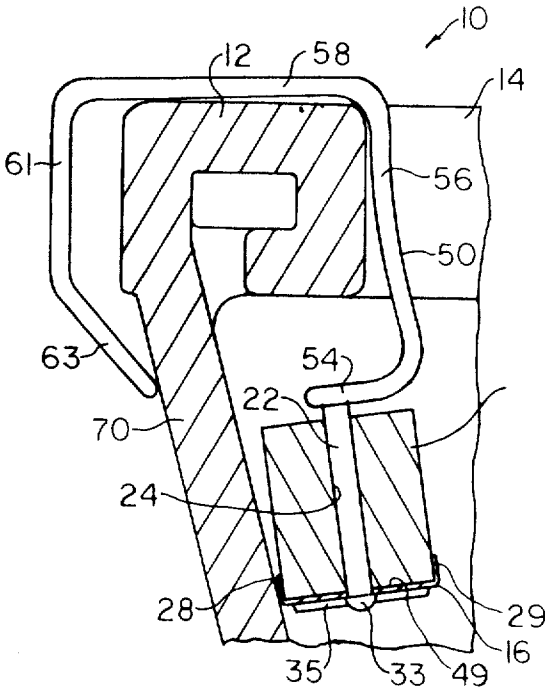
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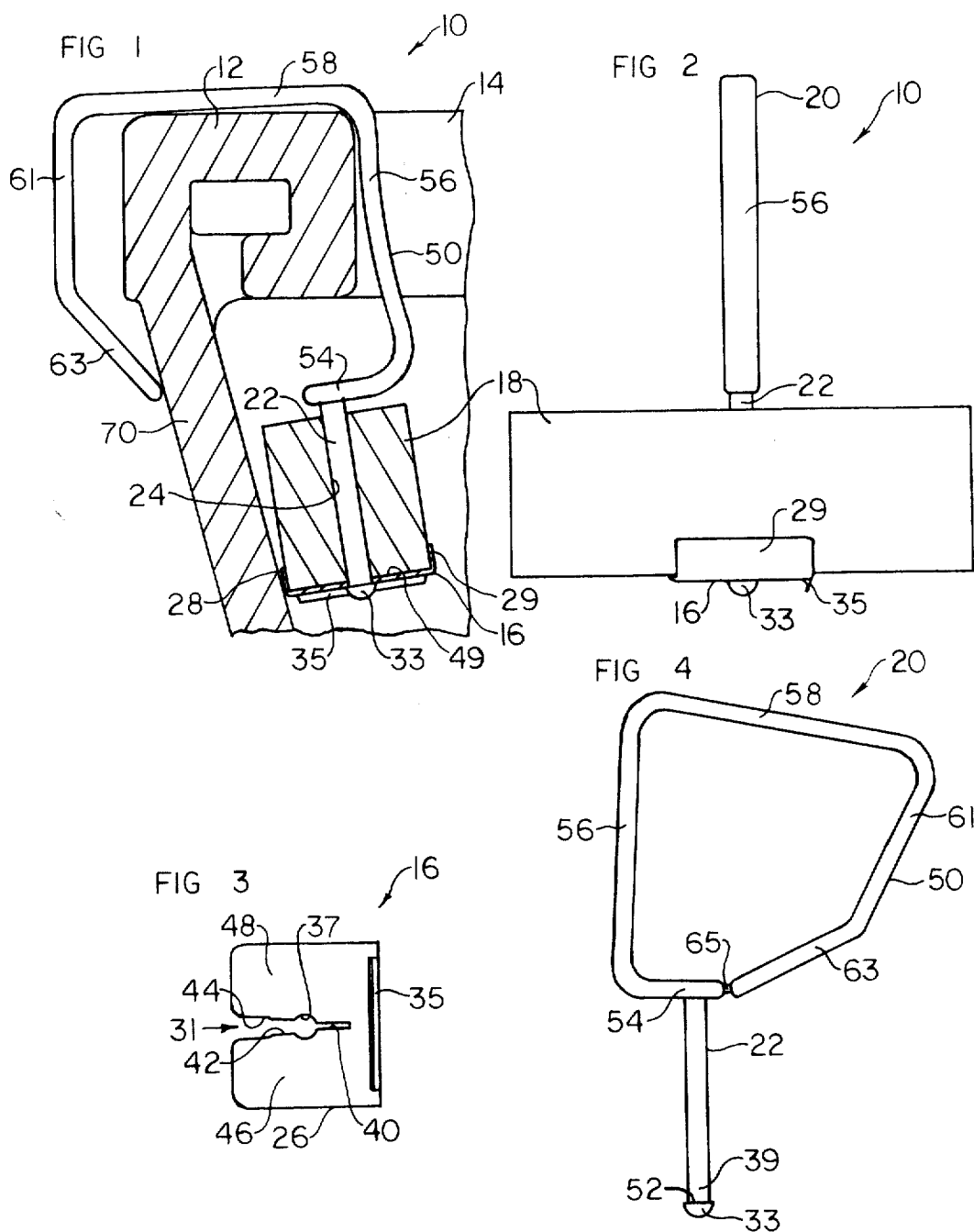
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[57] ABSTRACT

A treatment device is adapted to be supported from a supporting surface, such as a rim of a toilet bowl or other object to be treated, and includes a hook-shaped arm which clips onto the top edge of the toilet bowl rim and which has a base portion secured to the upper end of an elongated member extending downwardly through a central opening in a block of material composed of deodorizing, antiseptic, insecticide or other material and which is disposed within the toilet bowl when the arm is clipped onto the bowl and which is consumed upon exposure to ambient conditions. A channel-shaped supporting plate is snap fitted at the lower end of the elongated member and has a pair of upwardly projecting side walls to embrace the lower portion of the block.

5 Claims, 4 Drawing Figures





TREATMENT DEVICE

The invention relates to a treatment device and more particularly to a device which is comparatively simple and economically manufacturable, while being readily installed and highly reliable and effective in operation.

Treatment devices have heretofore been provided with a block of material which is consumed upon exposure to ambient conditions. For example, the blocks have been supported from the rim of a toilet bowl and have included surfactants for cleansing action; chelates to aid in preventing iron, calcium and magnesium deposits; quaternary ammonium compounds for deodorizing; and aromatic fixatives for adding a pleasant aroma to the surrounding air. The block material gradually evaporates when exposed to the air using a basic material of paradichlorobenzene or the equivalent. Similar types of treatment devices are usable for control of moths or other insects or as antiseptics for bacteria. They may be disposed in clothes closets, lockers, refuse or garbage cans, diaper cans, urinals, or kitchens. In order to support such a block from the rim of the toilet bowl or other supporting surface, prior art devices have included a wire basket supporting the block and a clip or hook connected to the basket to clip onto the rim of the bowl, whereby the basket is supported within the bowl. However, such devices have not been entirely satisfactory for some applications. In this regard, as the block evaporates, it shrinks in size until it breaks apart and falls from the basket into the bowl, the problem being that too much of the block is thereby wasted. Thus, it would be highly desirable to have a treatment device which includes a block of consumable material and which permits a greater consumption of the block.

Thus, the principal object of the present invention is to provide a new and improved treatment device.

Another object of the present invention is to provide a new and improved treatment device including a block of a treatment material which is consumed upon exposure to ambient conditions. A further object of the invention is to provide a treatment device which is readily installed and highly effective and reliable, while being simple and economically manufacturable.

Briefly, the above and further objects of the present invention are realized by providing a treatment device which includes a consumable block having a central hole therethrough, and a clip device having an elongated member extending through the hole in the block. The clip device includes a channel-shaped plate which is swivelly connected to the elongated member and which receives the block, and a hanger which comprises a resilient hook-shaped arm for clipping onto the rim of a toilet bowl or the like supporting surface. The clip includes a flat or planar supporting surface for engaging the undersurface of the block to retard the consumption of the lower portion of the block until the remaining portion of the block is consumed, whereby the block is prevented from breaking apart prematurely. The hook-shaped arm includes a base portion which is integrally connected to the elongated member, and a terminal end portion. In order to prevent a plurality of the hook-shaped arms from becoming tangled during handling and shipping prior to use, a break-away thin fragile connection is provided between the base portion and the terminal end portion.

The invention, both as to its organization and method of operation, together with further objects and advantages thereof, will best be understood by reference to the following detailed description taken in connection with the accompanying drawings, wherein:

FIG. 1 is a fragmentary cross-sectional view of a treatment device which is constructed in accordance with the present invention and which is supported by a rim of a toilet bowl;

FIG. 2 is a front elevational view of the treatment device of FIG. 1;

FIG. 3 is a slightly enlarged view of the supporting plate of the treatment device of FIG. 1; and

FIG. 4 is an elevational view of the hanger of FIG. 1, showing the break-away connection in place prior to use as the treatment device.

Referring now to the drawings, and more particularly to FIG. 1 thereof, there is shown a treatment device 10 which incorporates the principles of the present invention, and which is supported by a rim 12 of a toilet bowl 14. While the treatment device 10 is adapted for use with toilet bowls, it is to be understood that the treatment device of the present invention has many other applications and uses. The treatment device 10 generally comprises a channel-shaped supporting plate 16 for receiving and supporting a block 18 composed of a treatment material which is consumed upon exposure to ambient conditions, a hanger 20 which connects the clip 16 to the rim 12 of the toilet bowl 14, and an elongated member or rod 22 which extends through a centrally-disposed opening or hole 24 in the block 18, and is swivel connected to the supporting plate 16 by means of a snap connection. In use, after assembling the treatment device 10, the hanger 20 is slipped over the top edge of the rim 12 of the toilet bowl 14 to suspend the plate 16 and the block 18 on the inside of the toilet bowl 14.

Considering now the plate 16 in greater detail with reference to FIGS. 1, 2 and 3 of the drawings, the plate 16 is generally channel shaped and is preferably composed of a flexible plastic material. However, it is to be understood that other suitable materials, such as metal, may also be used. The plate 16 generally comprises a base 26 having a pair of oppositely-disposed upstanding flanges 28 and 29 for receiving and engaging the sides of the block 18 therebetween, an open-ended slot 31 extending from one of the side edges of the base 26 for receiving the elongated member 22 above its enlarged end or head portion 33 to swivelly connect the elongated member 22 to the plate 16, and a depending flange 35 extending along the other end edge of the base 26 to facilitate the connection of the plate 16 to the elongated member 22. The slot 31 includes an enlarged generally-circular portion 37 for receiving a rod-like shank portion 39 of the elongated member 22. A narrow closed-end portion 40 of the slot 31 extends from the circular-portion 37 toward the depending flange 35, and a restricted intermediate portion 42 of the slot 31 extends between the circular portion 37 and a slightly outwardly tapered open end portion 44 to retain the shank 39 in the circular portion 37. Thus, the slot 31 divides the base 26 into a pair of spaced-apart fingers 46 and 48 which are resilient and which can be spread apart to receive the shank portion 39 of the elongated member 22 therebetween. When the clip 16 is in its unstressed condition, the restricted intermediate portion 42 of the slot 31 has a width which is less than the diameter of the shank 39 of the elongated member 22, whereby the shank 39 is retained in the circular portion 37 of the slot 31. As shown in FIG. 1 of the drawings, the base 26 has an upper block-engaging surface 49 which is planar or flat and which engages the undersurface of the block 18. The undersurface of the block 18 is not exposed to the air, and thus consumption of the lower portion of the block 18 is retarded until the upper portion of the block 18 is consumed. Thus, the block 18 is prevented from breaking apart prematurely.

Considering now the hanger 20 in greater detail with reference to FIGS. 1, 2 and 4 of the drawings, the hanger 20 generally comprises a hook-shaped arm 50 which is integrally connected to the elongated member 22 and which forms a resilient clip for clipping onto the rim 12 of the bowl 14. The enlarged end portion 33 of the elongated member 39 is in the shape of a hemi-sphere, and thus is provided with an upper flat annular surface 52 upon which rests the base 26.

The hook-shaped arm 50 includes a base portion 54 which is integrally connected to the elongated member 22. An upwardly extending portion 56 is joined to the portion 54 at right angles thereto when the arm 50 is unstressed as shown in FIG. 4. A straight transversely extending portion 58 is integrally joined to the upwardly extending portion 56 at an acute angle relative thereto when the arm 50 is unstressed and a downwardly extending reentrant portion 61 is integrally joined to the transversely extending portion 58 at an acute angle relative thereto. A terminal end portion 63 is integrally connected to the downwardly extending portion 61 at an obtuse angle relative thereto. A relatively thin and short fragile

connection 65 connecting the terminal end portion 63 and the base portion 54 serves as a break-away member so that prior to using the treatment device 10, the hook-shaped arm 50 does not become tangled with similar hook-shaped arms during storage and handling of the hanger 20.

The hanger 20 is preferably composed of a flexible plastic material, but it is to be understood that other flexible materials, such as a suitable flexible metal, may also be used. The hook-shaped arm 50 is substantially rectangular and uniform in cross section. In use, the connection 65 of the arm 50 is first broken, and then the rod 22 is slipped through the hole 24 in the block 18, which hole is slightly larger in diameter than the enlarged end portion 33 of the rod 22. With the arm 50 held in an inverted position so that the block is resting on the base portion 54 of the arm 50, the plate 16 is slid along the underside of the block 18 until the open end portion of the slot 31 receives the shank 39 of the rod 22 to spread apart the fingers 46 and 48. In this regard, the thumb or finger nail of the user can engage the flange 35 to slide the plate 16 relative to the block 18. Upon entering the slot 31, the shank 39 thereafter snaps into the circular portion 37 of the slot 31 and is retained therein by the restricted intermediate portion 42. Thereafter, the hook-shaped arm 50 may be slipped over the top edge of the rim 12 of the toilet bowl 14 so that the flat undersurface of the transversely extending portion 58 of the hook-shaped arm 50 engages the flat upper surface of the top edge of the rim 12. In so doing, the user spreads the flexible hook-shaped arm to slip it over the rim 12, whereby the transversely extending portion 58 engages the rim 12, and the distal end portion of the terminal end portion 63 engages the outer surface of the side wall 70 of the bowl 14. In so doing, the block 18 and the plate 16 extend into the bowl 14 and the side flange 28 of the plate 16 engages the inner surface of the side wall 70 of the bowl 14, whereby the upwardly extending portion 56 of the hook-shaped arm 50 flexes into a bow shape as shown in FIG. 1. Thus, the stressed condition of the hook-shaped arm 50, as shown in FIG. 1, causes the treatment device 10 to be held in position. The swivel connection between the plate 16 and the elongated member 22 of the hanger 20 permits the plate 16 to accommodate various different sizes and shapes of toilet bowls.

While the present invention has been described in connection with a particular embodiment thereof, it will be understood that many changes and modifications of this invention may be made by those skilled in the art without departing from the true spirit and scope thereof. Accordingly, the appended claims are intended to cover all such changes and modifications as fall within the true spirit and scope of the present invention.

I claim as my invention:

1. In a toilet bowl clip device for use with a block of a treatment material consumable from exposure to ambient conditions and having a central opening therethrough, hanger means attachable on a supporting structure, an elongated member secured at its upper end to said hanger means and arranged to extend downwardly through said central opening in said block, and securing means on the lower end of said elongated member engagable with the underside of said block, said hanger means comprising a single generally hook-shaped arm having a base portion secured to said upper end of said elongated member and extending from said base portion upwardly, transversely and downwardly to a terminal end portion, said arm being formed of a molded plastic material and initially including a relatively thin short fragile break-away connection between said base portion and said terminal end portion, said connection being breakable to permit mounting of said device on said supporting structure.

2. In a toilet bowl clip device for use with a block of a treatment material consumable from exposure to ambient conditions and having a central opening therethrough, hanger means attachable on a supporting structure, an elongated member secured at its upper end to said hanger means and arranged to extend downwardly through said central opening in said block, and securing means on the lower end of said elongated member engagable with the underside of said block, said securing means including a generally planar upper surface of substantial surface area adapted to engage the under surface of said block to retard consumption of the lower portion of said block engaged therewith until the remaining portion of said block is consumed, and said securing means further including side walls, extending upwardly from the opposite edges of said planar surface along opposite sides of said block.

3. In a clip device as defined in claim 2, said securing means comprising a plate adapted to be secured to said lower end of said elongated member with a snap connection.

4. In a clip device as defined in claim 3, said elongated member having an enlarged head portion at its lower end, said plate including a generally flat portion defining said generally planar upper surface adapted to engage the underside of said block, and said plate having a slot extending from one other edge of said flat portion with an intermediate portion of said slot being of a width less than the thickness of said elongated member above said head portion.

5. In a clip device as defined in claim 4, said plate including a depending flange portion adapted to be engaged by a finger-nail for sliding said clip along said block in assembly of said device.

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