HOLDER AND EJECTOR FOR COLLAPSIBLE TUBES

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This invention relates to a wall fixture for holding and ejecting collapsible toothpaste tubes.

In the household, toothpaste tubes are usually kept in bathroom medicine cabinets along with other articles such as combs, brushes, razors, etc. Aside from the unsanitary aspects of this arrangement, the selection and removal of any one of the items without displacement of the others on the same shelf often presents a problem. This is particularly true in connection with toothpaste tubes since their smooth and generally cylindrical shape tends to make their retention upon cabinet shelves difficult when other articles must be removed therefrom.

Therefore, one of the principal objects of the present invention is to provide a convenient receptacle for toothpaste tubes which overcomes the disadvantages mentioned above. Another object is to provide a combination holder for a toothpaste tube and toothbrushes, the tube normally being supported in concealed condition and being easily accessible upon manipulation of ejecting means. A further object is to provide a sanitary holder for toothpaste tubes which permits the circulation of air about the tube while it is held in concealed condition and which may be easily and quickly disassembled for cleaning. A still further object is to provide a receptacle for holding a toothpaste tube in concealed and protected condition, the device having a movable tube supporting member which may be easily manipulated for removing the tube regardless of its size.

Other objects will appear from the specification and drawings in which:

Figure 1 is a perspective view of a toothbrush and toothpaste tube holder combination embodying the present invention;

Figure 2 is a top plan view of the fixture shown in Figure 1.

Figure 3 is an exploded perspective view of the toothbrush and toothpaste tube holder showing the three parts of the structure.

Figure 4 is a vertical sectional view of the holder illustrating the tube supported therein and showing the manner in which the tube-supporting member may be removed.

In the embodiment of the invention illustrated in the drawings, the numeral 10 generally designates a holder comprising a vertically elongated tubular casing 11, a mounting bracket 12, and a tube-supporting member 13. I prefer to form these parts from a suitable metal such as chromium-plated brass, or stainless steel, although it will be understood that other materials including plastics may also be used.

Casing 11 comprises an elongated cylindrical tube of uniform diameter defining a chamber 14 therein. The vertical tube is open at both its upper and lower ends and is provided along its front surface with a longitudinally extending slit 15. As shown most clearly in Figure 3, the slit or opening 15 is straight and terminates spaced distances from both the upper and lower ends of the tube. The diameter of the tube, as well as its length, are such that chamber 14 will easily accommodate even the largest sizes of collapsible toothpaste tubes.

The mounting bracket 12 has a flat annular portion 16 and a depending rear portion 17 formed integrally therewith. Openings 18 may be provided in the depending portion to receive screws for securely mounting the holder upon a wall surface. The horizontal annular portion 16 defines an opening 19 for snugly receiving casing 11 and is cut away at 20 to prevent obstruction of vertical slit 15. A plurality of circumferentially spaced openings 21 are provided in the collar portion 16 to receive the handles of toothbrushes and to support one or more toothbrushes 22 in the manner indicated in Figure 1.

The mounting bracket 12 and vertical tube 11 are welded together or are securely connected to each other in any other suitable manner. Preferably, these parts are oriented as shown in the drawings with the greater proportion of the tube's length disposed below the horizontal collar of the mounting bracket.

From Figures 3 and 4 it will be seen that the tube-supporting member 13 has a generally L-shaped configuration with an upstanding leg portion 23 and a forwardly extending base portion 24. The upstanding leg portion 23 is vertically elongated and has a horizontal or transverse curvature corresponding with the curvature of the cylindrical tube 11 (Figure 2). The transverse curvature of the upstanding leg portion not only rigidifies or strengthens that leg, but also provides the leg with a curved rear surface for slidably engaging the inner surface of the tubular casing.

In the illustration given, base portion 24 is in the shape of a flat disk which has a diameter sufficiently smaller than the inside diameter of the casing 11 to provide arcuate spaces 25 for the circulation of air therebetween (Figure 2). The disk lies along a substantially horizontal plane and is formed at its front with a handle portion 26 which lies along a vertical plane and which projects forwardly through the vertical slit or opening 15 of the tubular casing. The disk 24 is rigidly supported by leg portion 23 which, in combination with the vertical handle 26 disposed in vertical slot 15, prevents tilting of the disk within the tube. Preferably, the entire support member, including handle 26, disk 24 and leg portion 23, is formed from a single die-cut metal sheet.

Forward movement of handle 26 through opening 15 is limited by the disk portion 24 which will engage the inner surface of the tube adjacent the slit opening, while rearward movement of the handle into the interior of the tube is prevented by the upstanding leg 23 and the rear of the disk portion 24 which will engage the rear surface of the tube. Even when the upper end of the upstanding leg 23 is drawn forwardly within chamber 14 so that it engages the inner surface of the tube adjacent the slit, the handle portion 26 will still not be retracted sufficiently to bring it fully within the inner diameter of the tubular casing. In other words, the shortest distance between the rear corner of the L-shaped member and the imaginary hypotenuse of that member (as measured along a line perpendicular to the hypotenuse) is greater than the inside diameter of the tubular casing. Thus, during normal use, the tube-supporting member is maintained in operative position within the casing 11. However, when cleaning of the casing and the support member is desired, the member may be easily withdrawn from the casing by first lifting the handle 26 into its fully raised position and then drawing it downward and upwardly until the rear edge of the disk portion 24 clears the inner rear surface of the casing. This removal operation is illustrated in broken lines in Figure 4.

In normal use, a toothpaste tube represented in Figure...
4 by broken line 27, is supported upon the disk portion 24 and rests against the concave inner surface of leg portion 23. Hence, the tube 27 is held in substantially vertical condition and is normally concealed within the chamber 14 of the casing. The weight of the toothpaste tube urges the lower base portion of the support member downwardly and, in so doing, drives the curved rear surface of the upwardly leg into surface engagement with the inside of the cylindrical casing. Since the lower edge of the handle 26 rests upon the casing at the lower end of slit 15, and since the support member cannot be positioned completely within chamber 14 (as described above), the tube 27 is securely supported within the holder.

When removal of the toothpaste tube is desired, a user simply lifts handle 26 a sufficient distance to expose the tube above the upper open end of the casing. The toothpaste tube may then be withdrawn from the holder, the user releasing handle 26 to permit descent of the support member into its lowermost position. After the tube has been used, it is simply dropped into the casing through the open upper end thereof where it falls downwardly into its original position illustrated in Figure 4. It will be noted that even where a tube has been reduced in size by successive rolling, it is still easily accessible for removal from the holder because of the wide range of movement between the support member's lowered and raised positions.

Any moisture that might cling to a toothpaste tube after it has been used will readily evaporate from the tube after it has been returned to the holder because of the circulation of air through the open ends of the casing. In this connection, it is important to note the arcuate spaces 25 between the disk portion 24 of the supporting member and the inner surface of the tubular casing, since these spaces permit air to circulate through the chamber 14 about the toothpaste tube contained therein.

While in the foregoing I have disclosed an embodiment of the present invention in considerable detail for purposes of illustration, it will be understood by those skilled in the art that many of these details may be varied widely without departing from the spirit and scope of the invention.

I claim:

1. A toothpaste tube holder comprising a vertically elongated casing having open upper and lower ends for the free circulation of air therethrough and having a longitudinally-extending slit terminating at its lower end above the bottom of said casing, a tube-supporting member disposed within said casing for vertical sliding movement between raised and lowered positions therein and having a handle portion projecting outwardly through said slit, and bracket means for mounting said holder upon a wall surface, said tube-supporting member having a base portion of substantially smaller diameter than the interior of said casing and having an upstanding leg portion opposite from said handle for slidably engaging the inner surface of said casing.

2. The structure of claim 1 in which said handle portion lies along a plane passing through said longitudinally-extending slit and thereby cooperates with said slitted casing to prevent tipping of said tube-supporting member therein, said leg portion bearing outwardly against said casing and said handle portion engaging said casing at the lower end of said slit when said tube-supporting member is in fully lowered position.

3. The structure of claim 1 in which said upstanding leg portion is transversely curved to provide a convexly curved outer surface for slidably engaging the inside surface of said tubular casing and a concave inner surface for supporting a toothpaste tube.

4. In a holder of the character described, a casing comprising a vertical tube having open upper and lower ends for the circulation of air therethrough and having a vertical slit extending therealong, an L-shaped supporting member slidably disposed within said casing having an upstanding leg portion and a generally horizontal base portion, said base portion providing an upper surface for supporting a toothpaste tube within said casing and having a handle projecting outwardly through said slit, the shortest distance from the junction of said base and leg portions to the hypotenuse of the L-shaped member being greater than the inner diameter of said tubular casing, and mounting means for anchoring said holder upon a surface.

5. The structure of claim 4 in which the leg, base and handle portions of said L-shaped member are integrally formed from sheet material.

6. The structure of claim 4 in which said upstanding leg portion of said L-shaped member is transversely curved to provide a convex outer surface slidably engageable with the inner surface of said tubular casing and a concave inner surface for supporting an article thereon.

7. The structure of claim 4 in which said handle lies along a vertical plane and cooperates with said slitted tube to prevent tipping movement of said base therein, said handle resting at the bottom of said slit and said leg portion bearing outwardly against the inner surface of said casing when said supporting member is fully lowered.

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