

1 5 AUG 2000

DISPLAY TRAY FOR PACKAGED ARTICLES

Field of the Invention

5

The invention relates to a display tray which has a plurality of chambers for holding and displaying a plurality of packaged articles. More particularly, this invention relates to a display tray for holding
10 and displaying a plurality of elongated articles where the trays can be interconnected to form a network of trays so that a larger number of articles can be displayed.

Background of the Invention

15

There is a continuing need for display trays and display racks to hold and display articles that are for sale. The objective is to hold the articles in a neat arrangement while showing the unique attributes of the articles. Also, the articles must be able to be easily dispensed from
20 the racks or trays. The present need is for a display tray to hold and display packaged toothbrushes. The toothbrushes are packaged in elongated rectangular packages, usually blister packages. Typically these toothbrush packages have a slot adjacent the top which accepts a hook. These packages then hang from a hook and a display panel.
25 However, all sales outlets will not have the space for this type of a display. In some shops a shelf or counter top display arrangement is needed. What is needed is a display tray that will hold the packaged toothbrushes in a vertical orientation. It must be able to hold a plurality of packaged toothbrushes and to be expandable so that it can
30 display a large or small number of packaged toothbrushes.

The present display tray solves these problems. It can hold a large number of packaged toothbrushes in a vertical arrangement. In addition, by the attachment of additional modules a large number of
35 packaged toothbrushes can be held and displayed. The result is that the packaged toothbrushes can be held and displayed in a hanging arrangement or they can be held in a shelf or counter top display tray.

In either arrangement the packaged toothbrushes will be in a vertical orientation. The brush, and in particular the head of the brush that holds the bristles is displayed so that the purchaser can see the brush head at the time of purchase.

5

A prime advantage is that the display tray provides versatility to the merchant in displaying the packaged toothbrushes. He has more options in the design of his shop and the display of the products for sale in his shop.

10

Brief Description of the Invention

The invention comprises a display tray for packaged elongated articles, and more particularly, for toothbrushes. The tray holds and displays the packaged articles at the point of sale. The trays are supported on a shelf or counter top and hold a plurality of the packaged articles in a substantially vertical orientation.

The display trays are comprised of a plurality of connected chambers arranged in a plurality of rows. Each chamber has a front wall, rear wall and two side walls. Each sidewall forms an elongated longitudinal slot with the rear wall of each chamber. The slot is of a size and shape to accept the longitudinal edges of the packaged article. In one preferred embodiment the slot is formed by a longitudinal ledge projecting from the sidewall and spaced from the rear wall. In an additional preferred embodiment there is a second ledge on the sidewalls at an angle of about 90° or more from the first ledge and extending towards the front wall. This second ledge assists in placing the packaged articles into the display tray by directing the edges of the packaged articles into the elongated longitudinal slots.

The connected chambers can be of essentially any shape, but preferably are rectangular in cross-sectional shape. The chambers are of a depth to hold and display the packaged article. The display trays preferably will contain about 5 to 50 chambers, and most preferably about 10 to 20 chambers.

In a yet further preferred embodiment the display trays can be interconnected by an attaching mechanism on the exterior surface of at least two exterior walls of the display trays. This can be of essentially any connecting mechanism, and in a preferred mode, is comprised of one piece interfitting and locking into another, such as by a projection interfitting into a recess. Through the use of the concept of attaching display trays, an array of trays can be assembled to hold and display a large number of packaged articles.

10

Brief Description of the Drawings

Figure 1 is a perspective view of the display tray.

15

Figure 2 is top plan view of the display tray of Figure 1.

Figure 3 is cross-sectional view of the display tray of Figure 1.

20

Figure 4 is cross-sectional view of the display tray along line 4-4 of Figure 2.

Figure 5 is a front elevational view of the display tray.

25

Figure 6 is rear elevational view of the display tray of Figure 1.

Figure 7 is side elevational view of the display tray of Figure 1.

30

Figure 8 is a top plan view of the attachment of one tray to another.

Figure 9 is a front elevational view of the display tray with elongated packaged articles.

35

Figure 10 is side elevational view of the display tray with elongated packaged articles of Figure 9.

Detailed Description of the Invention

The display tray in a preferred embodiment will be described in more detail with reference to the drawings. This preferred embodiment
5 will be directed to the display of toothbrushes that are packaged in a plastic blister package. The blister package is held in an upright position in the display tray. In this way the consumer can see both the handle and brush head of the toothbrush. The display tray is compact,
lightweight, low-cost and expandable to hold a large number of
10 packaged toothbrushes.

Figure 1 shows the display tray 10 in a perspective view. The display tray is comprised of front wall 14, right sidewall 20 and rear
sidewall 16. These walls along with longitudinal wall 24 and transverse
15 walls 22 form the chambers 12 for holding and displaying articles. The articles preferably are elongated packaged articles where the edge of the package fits into slot 32 formed by ledges 23 and 27 and slot 30 formed by ledges 28 and 27. Ledges 25 are shown as a part of
sidewall 20. These ledges and slots are shown in more detail in
20 subsequent views. Shown here are projections 44 on sidewall 20 for interfitting with mating recesses on the sidewall of another display tray. Such mating recesses 46 are shown on the other sidewall. Interconnecting recesses 40 are shown on the front surface. These
would interconnect with projections on the rear wall of another display
25 tray. The feet 50 assist in supporting the display tray.

Figure 2 is a top plan view of the display tray 10 with Figure 3
being a cross-sectional view of this tray. The display tray has a
plurality of chambers 12, each shown to be of the same size. However,
30 these can be of different sizes and shapes. The display tray is defined by peripheral front wall 14, rear wall 16 and side walls 18 and 20. Transverse walls 22 along with longitudinal wall 24 form the
chambers 12 within the peripheral front, rear and sidewalls. Each
chamber is of a size to accommodate a packaged article. The packaged
35 article fits down into each of the chambers.

Depending from side wall 18 is a ledge 23 and from sidewall 20 a ledge 25. These ledges form a slot 32 with the transverse walls 22 and rear wall 16. Depending from longitudinal sidewall 24 are ledges 26 and 28 which form slots 30 with transverse walls 22 and rear wall 16. It is these slots 30 and 32 which will hold an edge of the package that is being held in the display tray. The slots will be substantially horizontal. The ledges 23, 25, 26 and 28 will be perpendicular or at an angle to the transverse walls 22 and rear wall 16. When at an angle they will depend at an acute angle (see Figure 4) so as to assist in the placement of the articles into the chamber.

On the exterior surface of the front wall, rear wall and sidewalls are attachment devices for attaching one display tray to another to increase the number of articles to be displayed. Also, when the display trays are so attached into an array the trays cooperate to stabilize each other with a greater stability to the array of trays over a single tray. The attachment can be by means of a releasable adhesive, Velcro, magnetic or mechanical device such as a dovetail tongue and groove arrangement or any other interfitting of one piece into another piece. It is preferred that the attachment not be permanent. In Figure 2 there are shown dovetail projections 42 and 46 on rear wall 16 and sidewall 18 respectively, of the tray. By the sliding of dovetail projections 42 or 46 of one tray into recesses 40 or 44 of another tray, the trays can be interconnected. This interconnecting can extend in essentially any array by connecting a number of trays sidewall to sidewall and/or front wall to rear wall.

The structure of the tray of Figure 2 is shown in more detail in Figure 3. Figure 3 is a cross-sectional view of the tray showing the internal structure in more detail. Slots 30 and 32 are shown in more detail as are the ledges 23, 25, 26 and 28. In addition there is shown for each chamber 12 a substantially vertical ledge 27 which intersects with ledges 23, 25, 26 and 28. These substantially vertical ledges 27 further define the slots 30 or 32.

Figure 4 is a cross-sectional view of tray 10 along line 4-4 of Figure 2. This view shows longitudinal wall 24 in more detail. Ledges 28 and 27 are shown with the ledge 28 forming an angle 36 of about 90° with ledge 27 and an obtuse angle 34 of about 95° to 160° with ledge 27. The angle 36 can be about 75° to 120°. The slots 30 are clearly defined, each having an optional bottom wall. The slots 32 are similar in structure. Also shown are feet 50 which support the tray on a substantially horizontal surface.

Figure 5 is a front elevational view of the tray. This shows front surface 14 with interconnecting recesses 40. Also shown is longitudinal wall 24 and transverse chamber walls 22. Figure 7 is a rear elevational view. This shows rear wall 16 and projections 42. Figure 7 is a left side elevational view of the display tray. This shows sidewall 20 and interfitting attachment recesses 44. Also seen in this view is attachment projection 42 and tray longitudinal wall 24. Tray feet 50 support the tray on a substantially horizontal surface.

Figure 8 shows in partial view two trays that have been interconnected. The tray on the left is the tray of Figure 1 while the tray on the right is a substantially identical tray. The parts numbering for each tray is the same with the right tray including these same parts having the same part number with the designation (a) added. There is shown here sidewall 18 of one tray (left tray) and sidewall 20(a) of another tray (right tray). Sidewall 18 has projections 46 which fit into recesses 44(a) of sidewall 20(a). Shown are ledges 23 and 25(a), slots 32 and 32(b), transverse walls 22 and 22(a), front walls 14 and 14(a) with recesses 40 and 40(a), and rear wall 16 and 16(a) with projections 42 and 42(a). A large number of trays can be connected in this manner sidewall to sidewall or front wall to rear wall. An array of trays can be interconnected to form essentially any size or any shape display arrangement.

Figures 9 and 10 show the display tray holding two packaged toothbrushes 60. Figure 8 shows a front elevational view of the display tray 10 with packaged toothbrush 60. The toothbrushes 66 are in blister pack packaging 60 which is comprised of a backing card 64 and blister 66. The edge of the blister can extend over backing card 64. Shown at the top of the blister pack is a hook arrangement 62. these toothbrushes can be displayed on a peg board or through use of the display trays. The longitudinal edges 64(a) of the blister pack backing card will fit into slots 30 and 32 of the display trays. By being within the slots of the display tray the packaged toothbrushes are held in a vertical array. These packaged toothbrushes are shown in a side elevational view in Figure 10. There is shown here a sidewall with projections 44 for interconnecting to another tray.

The trays can be made out of many different materials including metals and plastics. It is preferred that they be made from a moldable plastic. Suitable plastics are the polyenes such as polyethylenes and polypropylenes, copolymers of these polymers and alkyl-butadiene-styrene polymers. There is no significant limitation posed by type of plastic or other material form which the trays can be produced.

The foregoing sets out the preferred embodiments for the display tray. Modification and variations of the described trays are considered to be within the disclosed concept and within the present invention.

Claims

What is claimed is:

- 5
1. A tray for displaying a plurality of elongated packaged articles comprising a plurality of connected chambers, said plurality of chambers being arranged in a plurality of rows, each chamber having a front wall, a rear wall and two side walls, each side wall forming an alignment slot with said rear wall to accommodate an edge of a packaged article.
- 10
2. A tray as in claim 1 wherein said chambers are rectangular in cross-sectional shape.
- 15
3. A tray as in claim 1 wherein each side wall has a longitudinal ledge depending therefrom spaced from said rear wall to accommodate the edge of a packaged article.
- 20
4. A tray as in claim 3 wherein said longitudinal ledge at an upper end interconnects with a second ledge.
- 25
5. A tray as in claim 4 wherein said second ledge forms an angle with said first ledge of more than about 75°.
- 30
6. A tray as in claim 5 wherein said second ledge forms an angle with said first ledge of 90° or more.
7. A tray as in claim 1 wherein said tray has a tray front wall, a tray rear wall and two tray side walls at least one of said tray front wall, said tray rear wall and said tray side walls having part of an attachment mechanism on an exterior surface thereof to attach one of said trays to a second of said trays.
- 35
8. A tray as in claim 7 wherein there is a part of an attachment mechanism on each of said tray front wall, said tray rear wall and said tray side walls.



- 5 9. A tray as in claim 7 wherein said part of an attachment mechanism is a tongue and groove mechanism wherein said tongue is on a wall surface of one tray and said groove is on a wall surface of a second tray.
- 10 10. A tray as in claim 7 wherein said part of an attachment mechanism is located adjacent an end of said tray front wall, said tray rear wall and said tray side walls.
- 15 11. A tray containing a plurality of elongated packaged articles comprising a plurality of connected chambers, said plurality of chambers being arranged in a plurality of rows, each chamber having a front wall, a rear wall and two side walls, each side wall forming an alignment slot with said rear wall to accommodate an edge of said packaged article, at least one of said plurality of connected chambers containing an elongated packaged article.
- 20 12. A tray as in claim 11 wherein said chambers are rectangular in cross-sectional shape.
- 25 13. A tray as in claim 11 wherein each side wall has a longitudinal ledge depending therefrom spaced from said rear wall to accommodate the edge of a packaged article.
- 30 14. A tray as in claim 13 wherein said longitudinal ledge at an upper end interconnects with a second ledge.
15. A tray as in claim 14 wherein said second ledge forms an angle with said first ledge of more than about 75°.
16. A tray as in claim 15 wherein said second ledge forms an angle with said first ledge of 90° or more.
- 35 17. A tray as in claim 11 wherein said tray has a tray front wall, a tray rear wall and two tray side walls at least one of said tray front wall, said tray rear wall and said tray side walls having part



of an attachment mechanism on an exterior surface thereof to attach one of said trays to a second of said trays.

- 5 18. *A tray as in claim 17 wherein there is a part of an attachment mechanism on each of said tray front wall, said tray rear wall and said tray side walls.*
- 10 19. *A tray as in claim 17 wherein said part of an attachment mechanism is a tongue and groove mechanism wherein said tongue is on a wall surface of one tray and said groove is on a wall surface of a second tray.*
- 15 20. *A tray as in claim 17 wherein said part of an attachment mechanism is located adjacent an end of said tray front wall, said tray rear wall and said tray side walls.*

