Aug. 11, 1953 W. C. SMITH 2,648,429

DISPENSER

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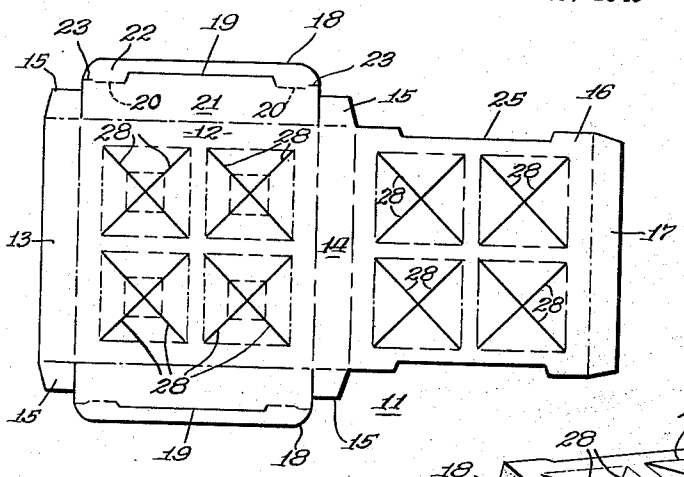


Fig. 1.

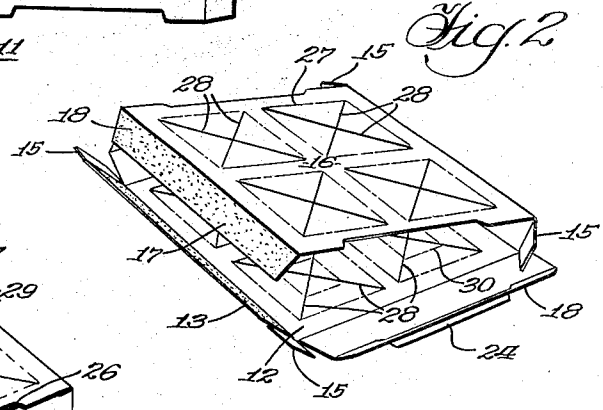


Fig. 2.

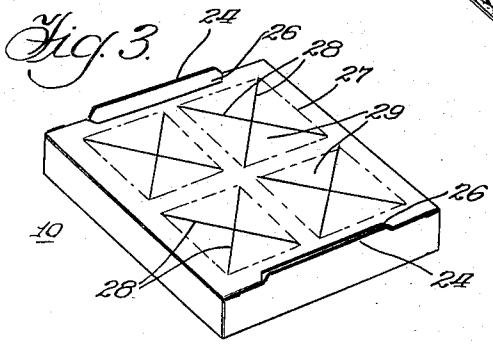


Fig. 3.

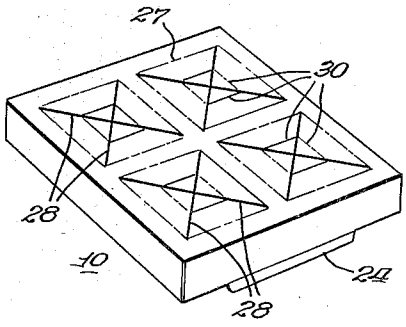


Fig. 4.

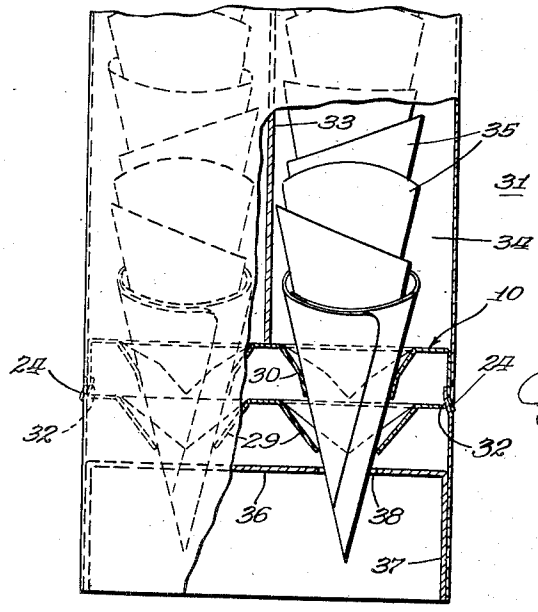


Fig. 5.

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DISPENSER

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4 Claims. (Cl. 206—56)

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This invention relates to dispensing cartons and, particularly, to dispensing cartons for ice cream cones and similarly shaped objects.

To promote the sanitary storage of pastry cones by vendors of ice cream, it is desirable to package cones in a dispensing container from which the cones may be readily withdrawn one by one, as required, without exposing the rest of the cones in the container. In the usual container of this type a stack of nested cones is supported, points down, in a resiliently bounded aperture, through which the lowermost cone of the stack partially extends. As the cone is forcibly withdrawn downwardly from the container, the aperture expands to permit the passage of the enlarged mouth end of the cone, and contracts immediately thereafter to re-grasp the next cone thereby to resume support of the stack. While such a structure is well suited to dispensing pastry cones of the ordinary type, that is, that type which has a more or less abruptly enlarged upper end portion with a generally circular mouth lying in a plane perpendicular to the axis of the cone, the so-called "sugar cone" presents a special problem.

Sugar cones are approximately circular cones formed by convoluting a thin sheet of enriched cake. The elements of the sugar cones are unequal in length and terminate in an irregular mouth which approximates an ellipse inclined from the axis of the cone. When the cones are stacked, therefore, the distance between the mouths of adjacent cones is not uniform, and when such cones are dispensed from the ordinary type of dispenser, the resiliently contracting boundaries of the supporting means of conventional dispensers will not unfailingly re-grasp the next-to-bottom cone uniformly. The restraining force of the resulting partial contact may not be sufficient to retain the succeeding lowermost cone within the carton with the result that two (or even more) cones may be dispensed instead of the desired one, thus defeating the purpose of the dispenser.

Accordingly, it is the principal object of the invention to provide an improved dispenser for sugar cones and similarly shaped objects, which will assure the individual delivery of the cones.

Other objects and advantages will appear and the invention will be better understood by reference to the following description and the accompanying drawings in which:

Figure 1 is a plan view of the blank of sheet material from which my improved dispenser is formed;

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Figure 2 is a perspective view of the dispenser at one point in its formation;

Figure 3 is a perspective view of the dispenser, showing the bottom thereof;

Figure 4 is a similar perspective view showing the top of the dispenser; and

Figure 5 is an elevational view of a carton incorporating the dispenser, which has been partially cut away to show the relationship of the inner parts.

In the specific embodiment of the invention illustrated in the drawings, the dispenser comprises a flat box-like structure 10 which is desirably fabricated from a single blank 11 of sheet material, such as is illustrated in Figure 1. Ordinary paperboard approximately .025" thick is suitable structural material. The blank is generally oblong in shape and is creased along the dotted lines indicated in Figure 1 to define a square panel 12 adjoined on one pair of opposite sides by a pair of narrow side panels 13 and 14 to each end of which a tongue 15 is hingedly attached. Another square panel 16, equal in size to the aforementionel square panel 12, is attached to the side panel 14, this panel 16 being provided with a narrow glue flap 17 on the side opposite its attachment to the side panel 14. When the blank is folded along the indicated crease lines, as shown in Figure 2, the square panels 12 and 16 become respectively the top and bottom walls of a box-like structure, in which the side panel 13 and the flap 17 are overlapped and adhesively bonded together by glue indicated at 18.

Hingedly connected to each of the other opposite sides of the top panel 12 is a pair of jointed flaps 18 which serve as closure members for opposite ends of the box 10. Each of the flaps 18 is divided by a U-shaped slit 19 and a pair of spaced hinges 20 into a closure panel 21 and a tucking flap or panel 22. The two panels 21 and 22 are separated at their outer ends by short slits 23 so that when the tucking flap is inserted into the box, the edges of the flaps 22 defined by the slits 23 engage the tongues 15 to lock the closure panel in place as a side of the box.

When the two constituent panels of the jointed flap 18 are perpendicular to one another, as when the box is set up and closed, a portion 24 of the closure panel 21, defined by the aforementioned U-shaped slit, projects below the plane of the bottom wall of the box, leaving in the tucking flap a slot corresponding in shape to said projecting portion. The bottom wall 16 of the box is provided along its free sides with similarly shaped indentations 25 which overlie the slots in the

tucking flaps to provide slot openings 26 in the box immediately adjacent and parallel to the projecting portions 24 of the closure panel. This slot and projection coact, in a manner to be later described, with similar members of the cone carton to support the box-like structure within the carton.

The top and bottom walls 12 and 16 of the box are creased or embossed with the outlines of squares 27 to provide in each wall a plurality of square panels each having a counterpart in the other wall. The walls are cut through along the diagonals 28 of the square panels to provide a plurality of apertures, which are normally closed by triangular tabs 29 resiliently hinged along the perimeters of the apertures.

In addition, the tabs in the upper wall of the box are scored on their outer surfaces along the lines 30 intermediate their extremities and their hinged connections to the perimeters of said apertures. When the box is supported in the cone carton, as shown in Figure 5, the apertures thus formed are positioned as vertically aligned pairs.

The carton or caddy in which the illustrated embodiment of the dispenser is incorporated is an elongated rectangular box 31 preferably formed of paperboard, which may be closed at either end by the usual hinged flaps (not shown). Two opposite walls of the carton are cut through with inverted U-shaped slits near the bottom of the carton to provide upwardly extending tongues 32 which may be inwardly depressed so that when the box-like dispenser structure 10 is placed in the carton, the tongues 32 may be inserted into the slot openings 26, and the projections 24 through said slits, to support the dispenser as a floor member within the carton.

A number of vertical partitions 33 divide the carton into a plurality of tube-like chambers 34 extending upwardly from the floor member. Each of the chambers houses a stack of nested cones 35 which is supported, points down, in the aligned apertures of the dispenser through which the lowermost cone of the stack partially extends. A stiff paperboard sub-floor 36 having depending flanges 37 is located immediately below and spaced from the dispenser. Holes 38 are provided in the sub-floor in alignment with said dispensing apertures and are of such size as to engage the projecting portions of the lowermost cones of the stacks thereby relieving the resilient tabs 29 of their stack-supporting function while the cone carton is in transit and subject to rough handling.

When the carton is mounted for use, the sub-floor is removed and the stacks of cones are supported solely by the tabs surrounding the apertures in the dispensing floor member. Although the sugar cones are nearly identical in shape and could theoretically be stacked with corresponding elements in vertical alignment so that the mouths of adjacent cones would be uniformly spaced in the stack, under actual conditions the cones are stacked haphazardly with corresponding elements rotatively displaced from one another so that the distance between vertically aligned elements of the mouths of the same pair of adjacent cones, as well as their respective distances from the axis of the stack, may vary considerably. Therefore, as the lowermost cone of the stack is pulled downwardly, the deflection of the resilient tabs is increased, as is the restraining force resisting withdrawal of the cone, until the upper end portion of the cone being withdrawn passes the tabs surrounding the upper aperture, whereupon said tabs rebound individually against the surface of the next lowermost cone. Urged downwardly by its own weight, the stack will follow the movement of the lowermost cone until the combined restraining force exerted by the tabs is great enough to resume support of the stack. Depending upon the speed with which the lowermost cone is withdrawn and upon the weight of the stack and, hence, its inertia, the restraining force of the uppermost tabs may be sufficient in one instance to completely stop the downward movement of the remaining stack, and only sufficient in another instance to initially retard or brake that downward movement. In the latter case, the action of the upper tabs provides a time delay during which the tabs surrounding the lower aperture may release the lowermost cone and rebound into gripping engagement with the sides of the next lowermost cone to completely stop the downward movement of the stack. In either event, the lower tabs hold the succeeding lowermost cone securely within the carton until it is positively withdrawn.

In the illustrated embodiment of the invention the tabs surrounding the upper apertures are jointed to provide a separate cone-grasping tip. In this manner, the gripping area of the tabs is increased, and the deflection of the fore-shortened base portions of the tabs is decreased so as to more evenly distribute the weight of the stack between the upper and lower tabs.

While the apertures of the illustrated embodiment of the dispenser have been illustrated as formed by cutting the panels along a pair of mutually bisecting lines to form a square aperture with four tabs, it will be appreciated by those skilled in the art that the principles embodied in this construction may equally well be employed in other dispensing structures having spaced apertures of different shapes bounded by other types of resilient retaining members, without departing from the spirit and scope of the invention.

I claim as my invention:

1. A dispensing container for ice cream cones comprising a vertically elongated receptacle adapted to house a stack of upright nested ice cream cones which have upper end edges disposed in planes more or less inclined to the axes of the cones with the planes of successive cones being disposed in more or less irregular, non-parallel relationship, whereby irregularly arranged, tapering width, upper end portions of the nested cones are exposed in the stack, and a cone-dispensing and stack-supporting structure in said receptacle adjacent the lower end thereof, said dispensing and supporting structure having vertically-spaced upper and lower walls extending transversely of the length of the receptacle, said walls being provided with vertically-aligned openings through which cones are downwardly withdrawable from the receptacle, said walls having resilient tabs extending from the edges of said aligned openings toward the axis thereof, said tabs being deflectable downwardly by cones drawn downwardly through said openings, the spacing of said walls being such as to enable tabs on both of said walls to simultaneously engage a single cone, said tabs on the upper of said walls being operable to engage the exposed upper end portion of the cone immediately following the cone being withdrawn before the latter is fully withdrawn through the opening in the uppermost wall, thereby to resist and

initiate retardation of the downward movement of the stack remaining above the cone being withdrawn, the continued withdrawal of said lowermost cone serving to effect enlargement of the depth of the exposed portion of said following cone, and tabs on the lower wall being operable to engage the exposed portion of said following cone before withdrawal of the lowermost cone is completed, thereby to further retard the downward movement of the stack and, in cooperation with the tabs on said upper wall, to stop the downward movement of the stack.

2. A dispensing container for ice cream cones comprising a vertically elongated receptacle adapted to house a stack of upright nested ice cream cones, and a cone-dispensing and stack-supporting structure in said receptacle adjacent the lower end thereof, said dispensing and supporting structure having vertically spaced upper and lower walls extending transversely of the length of said receptacle, said walls being provided with vertically aligned openings through which cones are downwardly withdrawable from the receptacle, said walls having resilient tabs extending from the edges of said aligned openings toward the axis thereof, said resilient tabs being deflectable downwardly by cones withdrawn through said openings, the spacing of said walls being such as to enable tabs on both of said walls to simultaneously engage a single cone, one or more of the tabs on said upper wall being engageable with the cone immediately following the lowermost cone to thereby resist and initiate retardation of the downward movement of said stack while withdrawal of the lowermost cone is continued against the resistance of the tabs on the lower wall, said tabs on the lower wall being engageable with said following cone upon completion of the withdrawal of said lowermost cone through said lower wall to thereby further retard and in cooperation with the tabs of said upper wall to stop the downward movement of the stack of cones.

3. A supporting and dispensing device for a stack of ice cream cones which are arranged in nested, vertically stacked relationship with the taper of the cones facing downwardly, comprising a pair of vertically spaced walls provided with vertically aligned sets of tabs which are resiliently displaceable downwardly so as to provide vertically aligned tab bounded openings in said walls, the cone stack being adapted to be seated and supported in said openings by engagement of the lowermost cone of the stack with said tabs, said lowermost cone being withdrawable downwardly through said tab bounded openings by the application of sufficient downward force to such lowermost cone to cause the latter to effect additional resilient displacement of said tabs to enlarge said openings so as to permit passage of said lowermost cone completely through said openings, the spacing of said walls being such as to enable one or more of the tabs on said upper wall to resiliently engage the cone immediately following the lowermost cone upon passage of the latter downwardly beyond such one or more

tabs, thereby to retard the downward movement of said stack while withdrawal of the lowermost cone is continued, said tabs on the lower wall being also resiliently engageable with said following cone upon completion of the withdrawal of said lowermost cone through said lower wall to thereby further retard and, in cooperation with the tabs of said upper wall, to stop the downward movement of the stack of cones.

4. A supporting and dispensing device for a stack of ice cream cones which are arranged in nested, vertically stacked relationship with the taper of the cones facing downwardly, comprising a pair of vertically spaced walls provided with vertically aligned sets of tabs having free inner ends and outer ends hinged to said walls, said tabs being resiliently displaceable downwardly so as to provide vertically aligned tab bounded openings in said walls, the cone stack being adapted to be seated and supported in said openings by engagement of the lowermost cone of the stack with said tabs, said lowermost cone being withdrawable downwardly through said tab bounded openings by the application of sufficient downward force to said lowermost cone to cause the latter to effect additional resilient displacement of said tabs to enlarge said openings so as to permit passage of said lowermost cone completely through said openings, the spacing of said walls being such as to enable one or more of the tabs on said upper wall to resiliently engage the cone immediately following the lowermost cone upon passage of the latter downwardly beyond such one or more tabs, thereby to retard the downward movement of said stack while withdrawal of the lowermost cone is continued, said tabs on the lower wall being also resiliently engageable with said following cone upon completion of the withdrawal of said lowermost cone through said lower wall to thereby further retard and, in cooperation with the tabs of said upper wall, to stop the downward movement of the stack of cones, the tabs on said upper wall being provided with transverse score lines permitting the free end portions of said tabs to bend downwardly relative to the hinged end portions, thereby to reduce the extent of bending required of said upper wall tabs at their hinge connections to the upper wall when said upper wall tabs are displaced to cone stack supporting position, whereby the strength of said upper wall tabs at their hinge connections is preserved.

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