United States Patent

Zeilinger

[15] **3,706,397**

[45] **Dec. 19, 1972**

[54] **GRAVITY FEED WITH CAN SUPPORTED INSERT**

[72] Inventor: **Alan F. Zeilinger,** Beachwood, Ohio

[73] Assignee: **Magic American Chemical Corporation,** Cleveland, Ohio

[22] Filed: **Nov. 23, 1970**

[21] Appl. No.: **91,957**

[52] **U.S. Cl.** .....**221/311,** 229/17 B

[51] **Int. Cl.** **A47f 1/08**

[58] **Field of Search** ....221/311, 194; 312/45, 72, 42; 229/7, 17 B; 206/44.12, 56 AC

[56] **References Cited**

UNITED STATES PATENTS

3,584,768	6/1971	Ascough et al.	229/17 B
1,378,533	5/1921	Fitzgerald	229/17 B
3,207,380	9/1965	Hennessey	229/17 B
3,388,788	6/1968	Hellem	206/65 S
3,536,247	10/1970	Gadiel	229/17 B

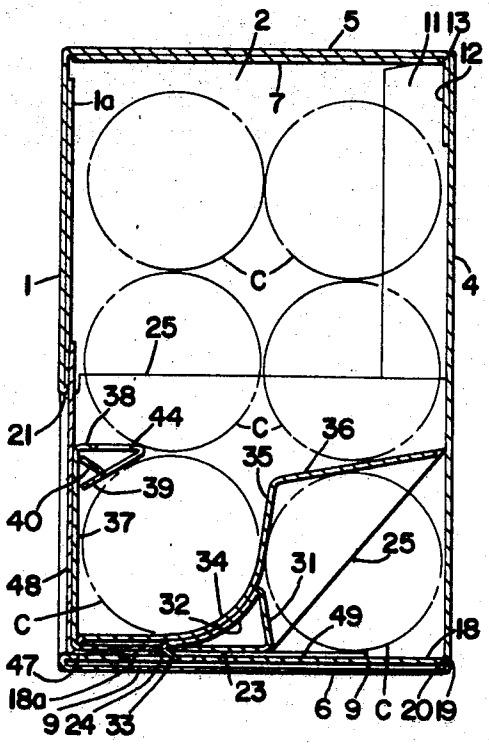
Primary Examiner—Stanley H. Tollberg

Attorney—Isler and Ornstein

[57] **ABSTRACT**

A gravity feed display pack for aerosol cans and the like is described, which is characterized by the use of an insert, which can be quickly and easily installed in the pack, and is utilized for automatically dispensing the cans, while the pack is on a display counter. A feature of the invention is the use of a retainer which not only holds the insert and cans within the pack during shipping and storage of the pack, but can be quickly and easily removed, just prior to placement of the pack on a display counter.

6 Claims, 12 Drawing Figures



PATENTED DEC 19 1972

3,706,397

SHEET 1 OF 3

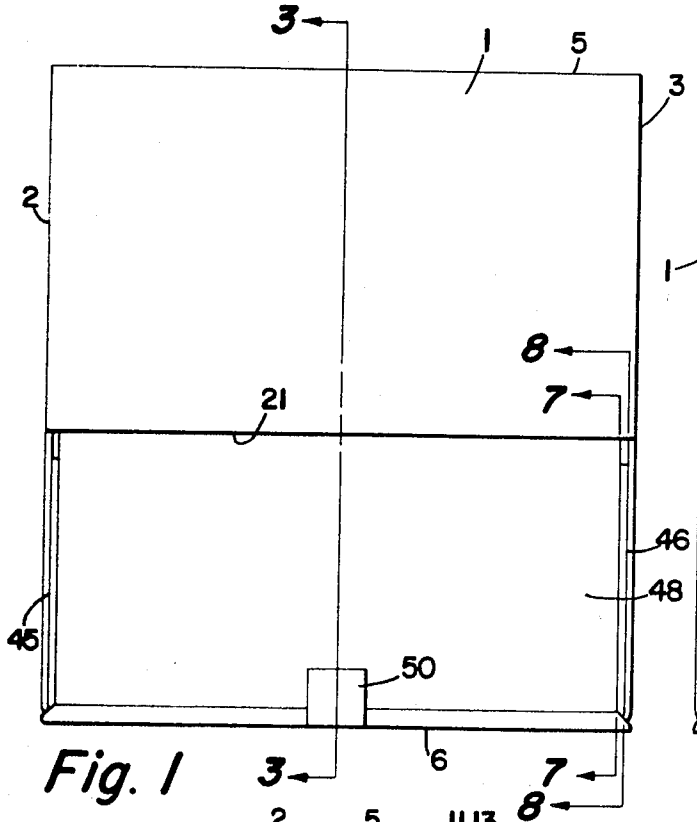


Fig. 1

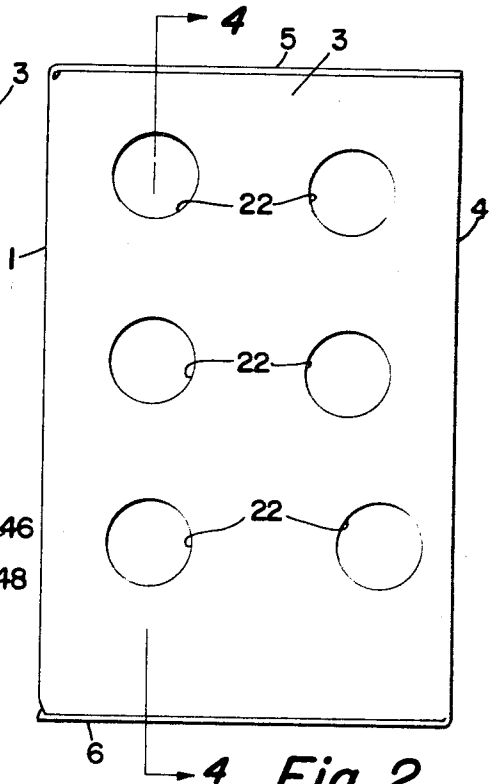


Fig. 2

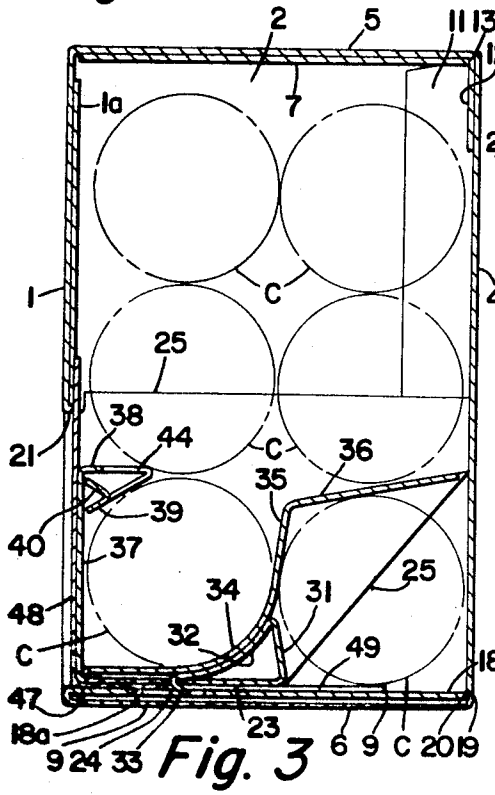


Fig. 3

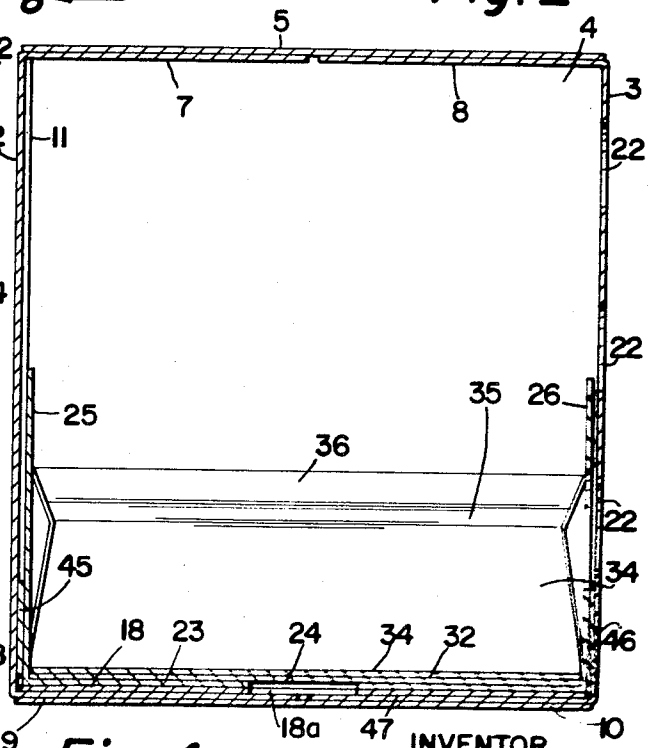


Fig. 4

INVENTOR.
ALAN F. ZEILINGER
BY Isler & Ornstein
ATTORNEYS

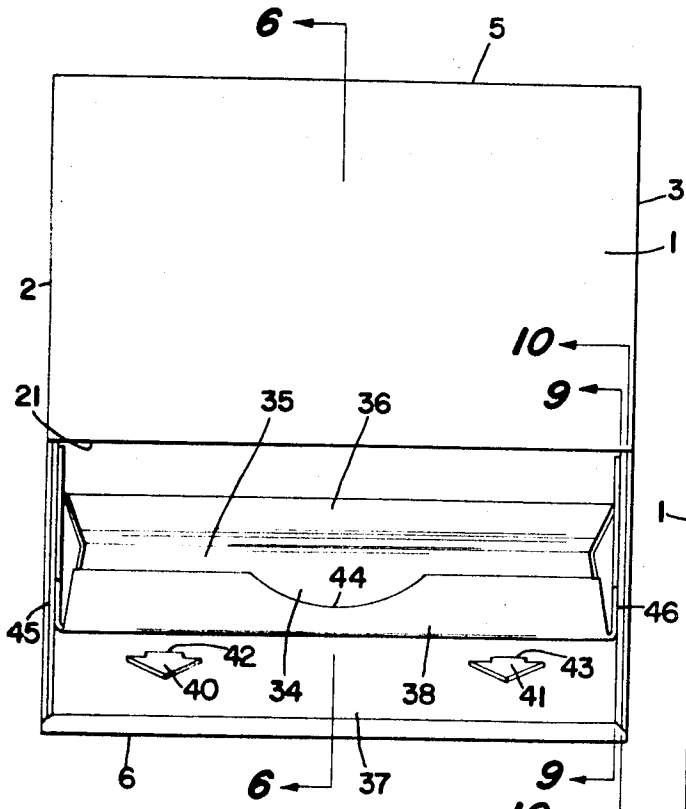


Fig. 5

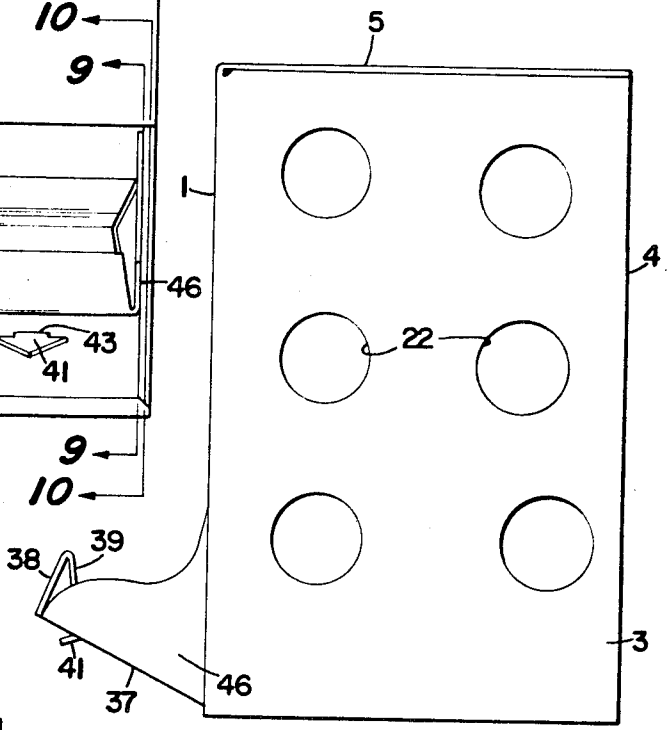


Fig. 6

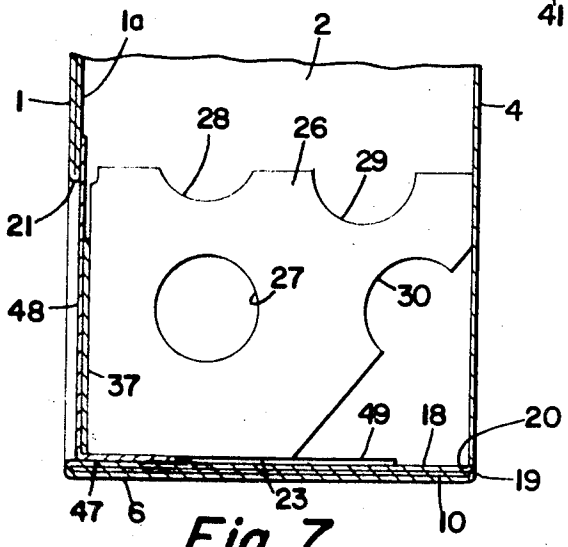


Fig. 7

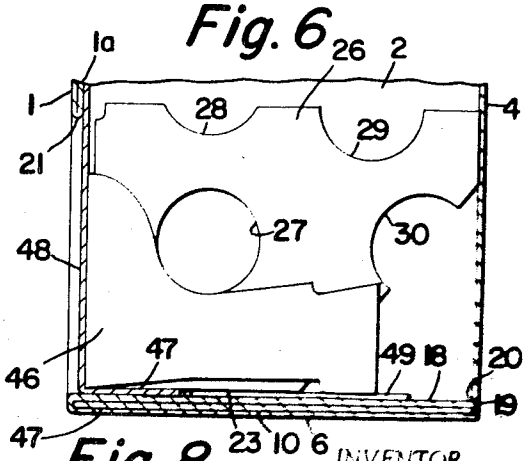


Fig. 8

INVENTOR.
ALAN F. ZEILINGER
BY
Cohen & Pontani
ATTORNEYS

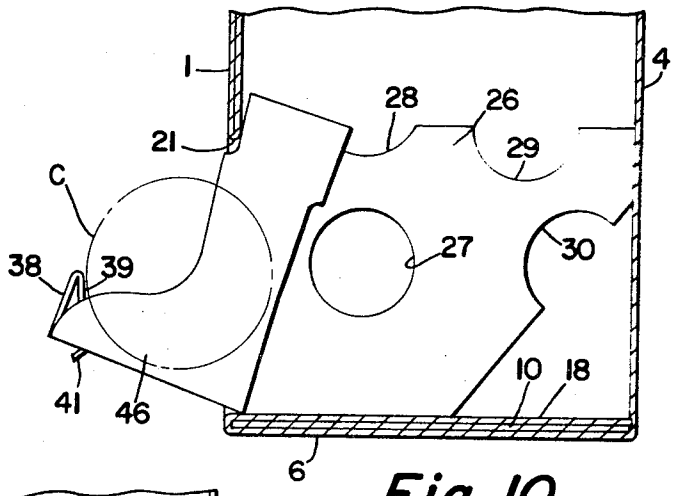


Fig. 10

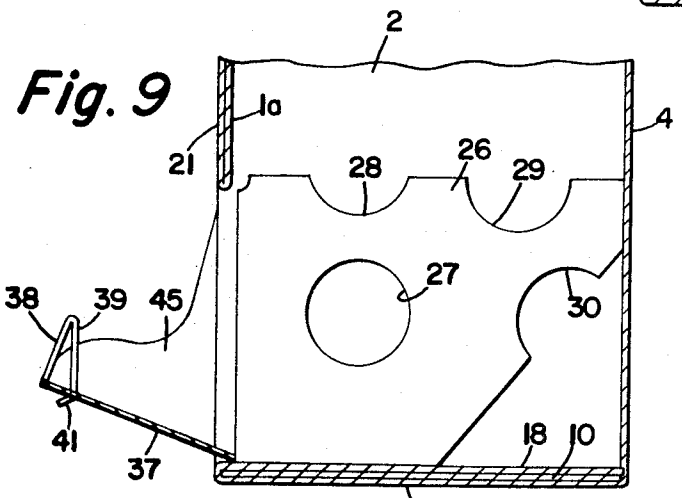


Fig. 9

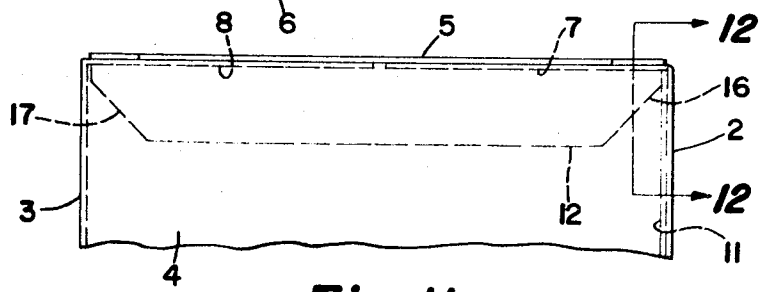


Fig. 11

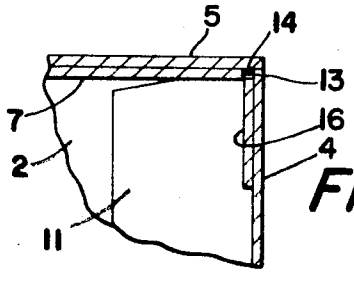


Fig. 12

INVENTOR.
ALAN F. ZEILINGER
BY
Isler & Aronstein
ATTORNEYS

GRAVITY FEED WITH CAN SUPPORTED INSERT

This invention relates, as indicated, to display packs for aerosol cans and the like, but is directed more particularly to a pack of this type from which the cans are fed by gravity, so as to provide, in effect, a self-dispensing pack.

A primary object of the invention is to provide a display container for aerosol cans or the like, having an insert comprising a tray onto which the cans may fall successively by gravity, for the purpose of being picked up from the tray and purchased.

Another object of the invention is to provide a container of the character described, having an insert comprising means for gravity feeding of the cans to the tray in a controlled manner.

A further object of the invention is to provide a container of the character described, having means for retaining the tray in a can-receiving position.

A further object of the invention is to provide a container of the character described, having a gravity slide and means for maintaining said slide at a desired inclination.

A further object of the invention is to provide a container of the character described, having means for permitting the cans in the container to be stamped or marked with their sale or purchase price, without removal of the cans from the container.

A still further object of the invention is to provide a container of the character described, having means for preventing movement of the tray to its operative position, pending filling of the container with the cans or during shipment of the filled container.

Other objects and advantages of my invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same,

FIG. 1 is a front elevational view of the gravity feed display container or pack, in its unopened or inoperative condition;

FIG. 2 is a side elevational view of the container, as viewed from the right side of FIG. 1;

FIG. 3 is a cross-sectional view, taken on the line 3—3 of FIG. 1;

FIG. 4 is a cross-sectional view, taken on the line 4—4 of FIG. 2;

FIG. 5 is a view similar to FIG. 1, but with the retainer panel removed, and the tray in lowered or operative position;

FIG. 6 is a side elevational view, as viewed from the right side of FIG. 5;

FIG. 7 is a fragmentary cross-sectional view, taken on the line 7—7 of FIG. 1;

FIG. 8 is a fragmentary cross-sectional view, taken on the line 8—8 of FIG. 1;

FIG. 9 is a fragmentary cross-sectional view, taken on the line 9—9 of FIG. 5;

FIG. 10 is a fragmentary cross-sectional view, taken on the line 10—10 of FIG. 5;

FIG. 11 is a fragmentary elevational view of the upper portion of the rear of the container, and

FIG. 12 is a fragmentary cross-sectional view, taken on the line 12—12 of FIG. 11.

Referring more particularly to FIGS. 1, 2, 3, 4, 7, 8, 11 and 12 of the drawings, a container or carton made

of corrugated paperboard or the like, comprising a front panel 1, side panels 2 and 3, a back panel 4, a top panel 5 and a bottom panel 6. The side panels 2 and 3 are respectively provided at their upper edges with closure flaps 7 and 8, and are respectively provided at their lower edges with closure flaps 9 and 10, all of these closure flaps being hinged to the side panels.

The back panel 4 is provided with a flap 11 which is adhesively secured to the inner face of the side panel 2.

The top panel 5, which is hinged to the upper edge of the front panel 1, is provided at its rear edge with a locking flap 12, which, after the carton has been filled with the cans C (FIG. 3), and the flaps 7 and 8 are closed, is passed downwardly through a slot 13, between the rear edges of the flaps 7 and 8 and the upper edge of the back panel 4.

For the purpose of locking the flap 12 to the closure flaps 7 and 8, the flaps 7 and 8 are provided adjacent the ends of the slot 13, with tabs 14 (FIG. 12) and the flap 12 is provided at its ends with tongues 16 and 17, which, when the flap 12 is moved downwardly through the slot 13, snap under the tabs 14, and thus lock the flap 12 to the flaps 7 and 8.

The bottom panel 6, which is hinged to the lower edge of the back panel 4, is provided with a locking flap 18, which is hinged to the forward edge of the panel 6, and is utilized to lock the closure flaps 9 and 10 in closed position. For this purpose, the flap 18 is folded over the flaps 9 and 10, and is provided at its rear edge with a central tongue 19 which snaps into an indentation 20 in the inner face of the back panel 4, thus locking the flap 18 to the back panel, while, at the same time, maintaining the closure flaps 9 and 10 in their closed position.

It may be noted, at this point, that a portion 1*a* of the front panel 1 is folded upwardly and into contiguity with the rear face of the upper portion of the front panel 1, to thereby provide a rectangular opening 21, for a purpose to be presently described, and that the side panel 3 is provided with spaced circular openings or holes 22, for a purpose also to be presently described.

An important feature of the invention resides in the provision of an insert, preferably made from a single piece of relatively thin and flexible cardboard or the like.

This insert comprises a rectangular bottom 23 of a length substantially the same as the distance between the side panels 2 and 3 of the carton, but of a front to rear depth substantially less than the distance between the front panel 1 and back panel 4. The bottom 23 is provided at its center with a slot 24, the function of which will be presently described.

The bottom 23 has hinged to the ends thereof upstanding flanges 25 and 26, which, when the insert is inserted into the carton through the upper end of the carton and the bottom 23 is disposed adjacent the flap 18 of the carton, are respectively disposed adjacent the inner faces of the side panels 2 and 3. These flanges are of a front to rear depth substantially equal to the distance between the portion 1*a* of the front panel 1 and the back panel 4, but are of a height slightly in excess of the height of the opening 21 of the carton, so that these flanges abut the portion 1*a* of the front panel 1 and thus prevent the insert from being slid out of the carton through the opening 21.

The flange 26 is provided with a circular opening 27, and with recesses 28, 29 and 30, which are axially aligned with the four lower openings 22 in the side panel 3.

The bottom 23 of the insert has hinged to its rear edge an upstanding flange 31, to the upper edge of which a flange 32 is hinged. The flange 32 extends forwardly and downwardly and is of arcuate cross-section, so that its forward edge lies on the bottom 23 adjacent the forward edge of the bottom. For the purpose of locking the flange 32 to the bottom 23, the flange 32 is provided with a locking tongue 33, which is snapped through the slot 24 of the bottom 23, the ends of this tongue engaging the lower surface of the bottom to prevent retraction of the tongue. This tongue 33 extends into an opening 18*a* in the flap 18.

The flange 32 has hinged to its forward end a flange 34, which overlies and substantially corresponds, in cross-section, to the flange 32. The flange 34 has extending from the rear edge thereof, an upstanding flange 35, from the upper edge of which a flap 36 extends rearwardly.

The insert further includes a rectangular portion 37 which is hinged to the forward edge of the bottom 23, and constitutes what will hereinafter be referred to as a "tray." This tray terminates at its forward edge in a flange 38, which, in turn, terminates in a rebent flange 39 provided with spaced locking tongues 40 and 41, which are snapped through openings 42 and 43 respectively, in the tray 37, for the purpose of locking the flange 39 to the tray, so that the flange 38 functions as an abutment for the cans C, in a manner to be presently described. Portions of the flanges 38 and 39 are removed, as at 44, to provide a finger hold for facilitating forward movement of the tray, in a manner to be presently described.

The tray 37 has hinged to the ends thereof tongues 45 and 46 (see FIG. 8). The tongue 45 lies between the inner face of the side panel 2 and the flange 25, and the tongue 46 lies between the inner face of the side panel 3 and the flange 26. The tongues 45 and 46 are of a length slightly greater than the height of the opening 21 of the carton, for a reason to be presently described.

Before the insert is placed in the bottom of the carton, means are inserted in the bottom of the carton for the purpose of retaining the tray 37 against movement through the opening 21, both during filling of the carton with the cans, and during shipment of the filled carton. Such means comprises a cardboard retainer, consisting of a base portion 47 which lies on the flap 18, and an upright portion 48, which covers the opening 21 and lies inwardly of the portion 1*a* of the panel 1.

The base portion 47 has a cut-out or recess 49, the base of which is disposed forwardly of the tongue 33, and the upright portion 48 is of a height such that its upper portion extends above the upper edge of the opening 21, so that the portion 1*a* of the front panel 1 retains the cardboard retainer in position pending filling of the container with the cans C.

In order to prevent inadvertent removal of the cardboard retainer, a piece of adhesive tape 50 is secured to the upright portion 48 of the retainer and the bottom panel 6 of the carton.

In filling the carton with cans, a can is first inserted onto the flange 34 of the insert, the curvature of this flange conforming substantially with the curvature of the cylindrical can. This can is retained against forward movement by the tray 37 (see FIG. 3).

The flange 35 and flap 36 are then lifted upwardly to permit insertion of a second can in the bottom of the carton, after which the flange 35 and flap 36 are restored to their original position, and the flap 36 rests upon the second can, as seen in FIG. 3. A second tier of cans is then placed in the carton over the first can and the flap 36, after which the third or final tier of cans is placed in the carton over the second tier of cans, as in FIG. 3.

After the carton has thus been filled with the cans, the carton is closed, in an obvious manner.

It is to be noted, in this connection, that all of the cans are inserted in the carton with their caps or covers facing and in axial alignment with the openings 22 in the side panel 3. This enables the caps of the cans to have the price stamped thereon through the openings 22, so that the cans need not be removed from the carton for this purpose.

When the carton is placed on display, the cardboard retainer is removed by first cutting the tape 50, and then removing the retainer from the carton by squeezing the upright portion 48 inwardly at the fold line between the portions 47 and 48, and then pulling the retainer from the carton, and discarding it.

The tray 37 is then pulled forwardly through the opening 21 and to the position shown in FIGS. 5, 6, 9 and 10. The extent to which the tray is thus pulled forwardly is determined by the engagement of the rear ends of the tongues 45 and 46 with the rear face of the portion 1*a* of the front panel 1 (see FIG. 10).

With the tray thus pulled forwardly, the first can will fall by gravity down the inclined flange 34 of the insert and onto the tray 37, to the position indicated in FIG. 9, from which it may be easily removed when purchased. After the first can has thus been removed, each of the remaining cans, with the exception of the one under the flap 36, will fall, in succession, onto the tray 37. In this connection, it may be noted that the can under the flap 36 maintains the flap 36 at a slight forwardly and downwardly sloping inclination, so that the can which rests on this flap will also fall by gravity onto the flange 34 and onto the tray 37.

After five cans have thus been removed from the carton, the flap 36 may be lifted, and the sixth can be removed and placed in the tray.

It is thus seen that I have provided a display pack for aerosol cans and the like having an insert of unique construction, comprising a tray onto which the cans may fall successively by gravity, for the purpose of being picked up from the tray, when purchased; which has means for gravity feeding of the cans to the tray in a controlled manner; which has means for retaining the tray in a can-receiving position; which has means for permitting the cans in the pack to be stamped or marked with their sale or purchase price, without so marking the cans prior to insertion in the pack, or after removal from the pack, and which is further characterized by the provision of means for preventing movement of the tray to its operative position pending filling of the pack with the cans or during shipment or storage of the pack.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a

preferred example of the same, and that various changes may be made in the shape, size and arrangement of parts thereof, without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. In a display pack of the character described, a container having a front panel and an opening below said panel, said container adapted to contain a plurality of cans in superposed relation, and means for dispensing said cans individually from said container and through said opening, said means including an insert entirely independent of said container disposed in the bottom of said container and having a tray-like portion adapted to receive each can and movable from a position within the container to a position forwardly of said opening, whereby the can may be lifted and removed from said portion, said insert including tongues at the ends of said tray-like portion, said tongues being of a length such that when said tray-like portion is moved forwardly of said opening they come into abutment with portions of said container, whereby to limit forward movement of said tray-like portion, said insert being provided rearwardly of said tray-like portion with an inclined slide formed integrally with said tray-like portion and extending substantially the length of said tray-like portion and down which said cans are adapted to slide by gravity into said tray-like portion when said tray-like portion is moved to said forward position, said insert further including a flap extending rearwardly from the rear of said inclined slide, said flap engaging a can disposed in the bottom of said container rearwardly of said slide, whereby said can maintains said flap in an inclined position for facilitating gravity movement of cans overlying said flap onto said slide.

2. In a display pack of the character described, a container having a front panel and an opening below said panel, said container adapted to contain a plurality of cans in superposed relation, and means for dispensing said cans individually from said container and through said opening, said means including an insert entirely independent of said container and disposed in the bottom of said container and having a tray-like portion adapted to receive each can and movable from a position within the container to a position forwardly of said opening, whereby the can may be lifted and removed from said portion, said insert including tongues at the ends of said tray-like portion, said tongues being of a length such that when said tray-like portion is moved forwardly of said opening they come into abutment with portions of said container, whereby to limit forward movement of said tray-like portion, said insert being provided rearwardly of said tray-like portion with an inclined slide down which said cans are adapted to slide by gravity into said tray-like portion when said tray-like portion is moved to said forward position, said insert further including a flap extending rearwardly from the rear of said inclined slide, said flap adapted to overlie a can disposed in the bottom of said container rearwardly of said slide, whereby said can maintains said flap in an inclined position for facilitating gravity movement of cans overlying said flap onto said slide, said flap being pivotally secured to said slide, whereby to permit lifting of said flap to permit removal of said underlying can.

3. A display pack, as defined in claim 2, wherein said insert further includes end flaps having a front to rear dimension corresponding substantially to the front to rear dimension of the interior of said container, and a height in excess of the height of said opening, whereby to prevent shifting of said insert bodily through said opening.

4. A display pack, as defined in claim 3, including means for temporarily closing said opening and for retaining said tray-like portion rearwardly of said opening, said means being removable from said container prior to movement of said tray-like portion to said forward position.

5. A display pack, as defined in claim 1, wherein said container has a side panel having spaced openings in axial alignment with the cans within said container, whereby the purchase price of the cans may be imprinted on the ends of the cans, while said cans are in the container.

6. In a display pack of the character described, a container having a front panel and an opening below said panel, said container adapted to contain a plurality of cans in superposed relation, and means for dispensing said cans individually from said container and through said opening, said means including a one-piece insert which is entirely independent of said container, and is formed to provide a tray-like portion adapted to receive each can and movable from a position within the container to a position forwardly of said opening, whereby the can may be lifted and removed from said portion, a supporting portion of arcuate cross-section disposed rearwardly of said tray portion, an inclined slide portion overlying and supported by said supporting portion, and down which said cans are adapted to slide by gravity into said tray-like portion, and a flap extending rearwardly from the rear of said inclined slide, said flap adapted to overlie a can disposed in the bottom of said container rearwardly of said slide, whereby said can maintains said flap in an inclined position for facilitating gravity movement of said cans overlying said flap onto said slide.

* * * * *