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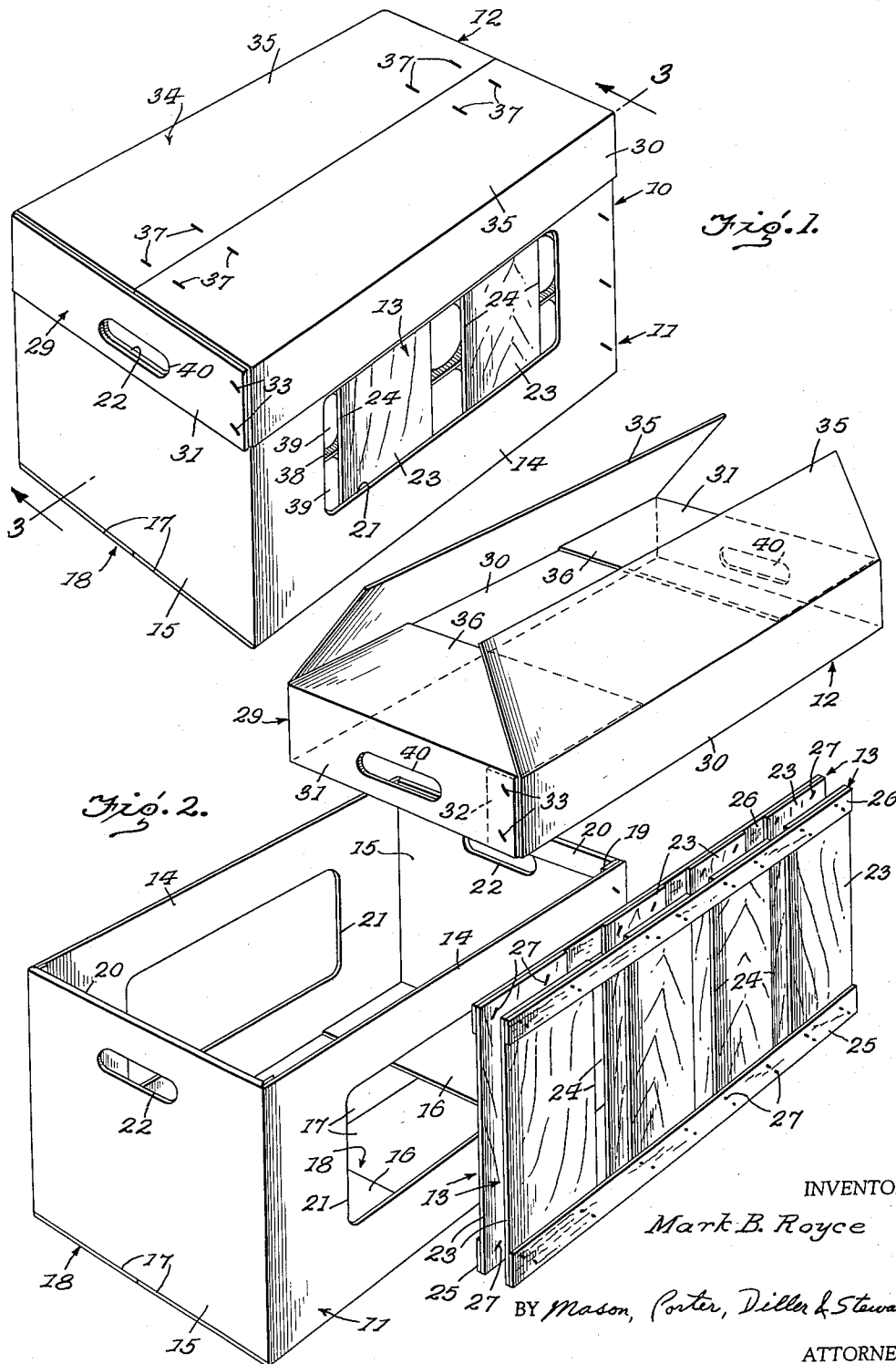
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CONTAINER FOR PACKAGING APPLES

Filed Jan. 13, 1960

2 Sheets-Sheet 1



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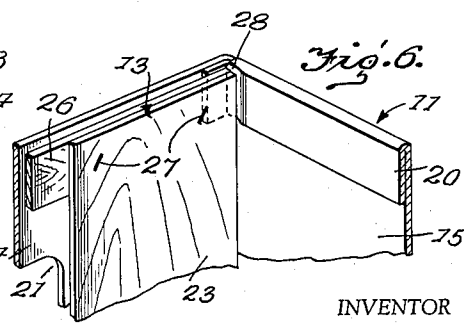
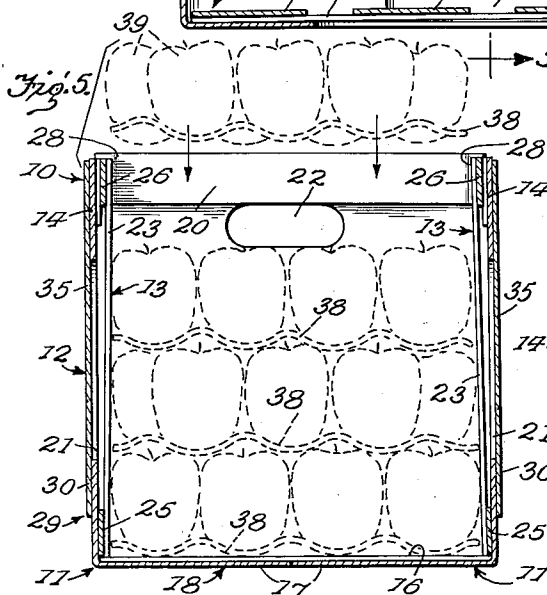
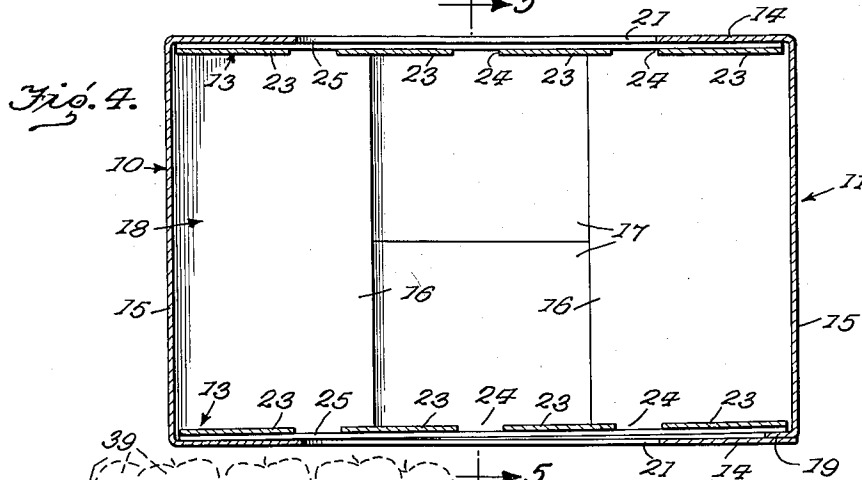
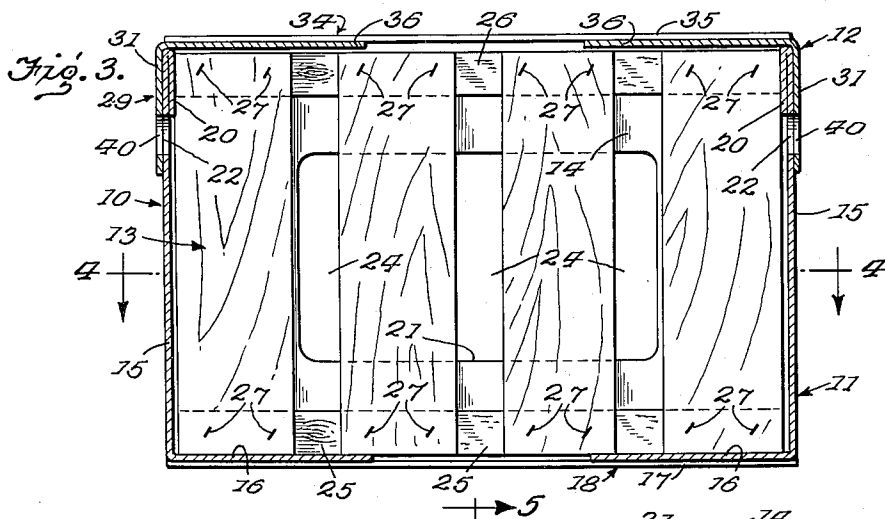
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2 Sheets-Sheet 2



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CONTAINER FOR PACKAGING APPLES

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4 Claims. (Cl. 229—6)

This invention relates in general to new and useful improvements in the container art, and more particularly relates to a novel container for packaging fruits, such as apples and the like.

Many fruits, particularly apples, are packed in paperboard boxes, with the individual layers of apples being separated by molded pulp trays, much in the same manner as eggs. In the normal packaging of apples, in the packing plant, the apples travel along on a conveyor belt past an operator who picks the apples from the belt and places them in the cavities of the molded pulp trays. The filled trays are dropped into the boxes, and the air in the bottom of the boxes beneath the trays is trapped and functions as a cushion to the descent of the trays of apples. Such a principle has proven to be a very successful one. However, it is also desirable to provide openings in the boxes to permit the circulation of air around the fruit therewithin. The openings, on the other hand, provide a situation wherein the air is no longer trapped beneath the tray as it is lowered into the box, and as a result, the tray falls rapidly to the bottom of the box and the fruit is displaced from the individual pockets of the tray. Further, when additional trays are dropped into the box, if their descent is not cushioned, they will strike the previously positioned fruit and bruise the fruit. For this reason, the present containers for apples and other fruit wherein the fruit is packaged in trays are not provided with the desirable ventilation openings.

It is an object of the invention to provide a novel container for packaging apples and other fruits, which container is provided with openings to permit the circulation of air around the fruit, and at the same time to employ the air cushioning principles presently utilized, the container being provided with a cover which initially has the top forming flaps thereof loose, and which cover is telescoped down over the container box portion to temporarily close the air holes therein so that air may be trapped within the container box beneath the trays to cushion their descent in the normal manner, and the cover being movable upwardly after the box has been filled with the fruit, and the flaps stapled into place.

Still another object of the invention is to provide a novel container for packaging apples and like fruit, which container may be readily handled in a packing plant and which is complete in itself, the container including a box and a cover, the cover having the top wall thereof formed by a plurality of flaps which are folded together and are to be stapled, the cover initially having its flaps unstapled and the entire cover, including the flaps, being telescoped over the box so that once the box is filled, it is merely necessary to slide the cover up and to staple the flaps, thus completing the packing operation.

Still another object of the invention is to provide a novel container for packaging apples and the like, the container including a paperboard box having a bottom, side walls and end walls, the end walls being provided at the upper edges thereof with inturned depending flaps,

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the upper portions of the end walls being provided with hand holes, the upper boundaries of the hand holes being disposed flush with the lower edges of the flaps, whereby a two ply grip is provided, and there additionally being provided a cover having hand holes aligned with the other hand holes so that the finished container may have a three ply grip.

A further object of the invention is to provide a novel container for packaging apples and the like, the container including a paperboard box which has a bottom, side walls, and end walls, the end walls terminating at the upper ends thereof in inturned depending flaps, the side walls being provided with large ventilating openings, and the box being reinforced by upstanding inner side members which are of a slotted construction and have smaller openings therein aligned with the large openings of the side walls, the lengths of the inner side members being slightly greater than the spacing between the flaps so as to crush the flaps and to form an interlock with the box.

With the above, and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims, and the several views illustrated in the accompanying drawings.

In the drawings:

Figure 1 is a perspective view of a container constructed in accordance with the invention and packed with apples.

Figure 2 is an exploded perspective view, showing the various components of the container.

Figure 3 is an enlarged vertical sectional view taken along the section line 3—3 of Figure 1, and shows the specific relationship between the various components of the container, the apples being omitted for purposes of clarity.

Figure 4 is an enlarged horizontal sectional view taken along the section line 4—4 of Figure 3, and shows further the relationship of the various components of the container.

Figure 5 is a transverse vertical sectional view taken along the section line 5—5 of Figure 4, and shows still further the details of the container, the positioning of apples both packaged within the container and about to be packaged within the container being shown in dotted lines.

Figure 6 is an enlarged fragmentary perspective view of an upper inner corner of the box portion of the container and shows the manner in which one of the inner side members is interlocked with the inturned flap on one of the end walls.

In describing the embodiment of the invention illustrated in the drawings, reference will be made to the packaging of apples therein. It is to be understood, however, that apples are only one of the many articles which may be packaged in containers of the type to which this invention pertains.

In the embodiment of the invention illustrated, the entire container is generally referred to by the numeral

10. The container 10 is basically formed of a paperboard box, generally referred to by the numeral 11, a paperboard cover, generally referred to by the numeral 12, and a pair of slotted inner side members, generally referred to by the numeral 13. For convenience of shipment, the box 11 and the cover 12 will be shipped in the flat blank state, and the box 11 completely assembled, as is illustrated in Figure 2, and the cover 12 only partially assembled, as is illustrated in Figure 2.

The box 11 includes a pair of side walls 14 and a pair of end walls 15. The lower edges of the end walls 15 terminate in inturned flaps 16 which overlie inturned flaps 17 integrally connected to the lower edges of the

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side walls 14. The flaps 16 and 17 are suitably connected together, such as by staples, to form a bottom wall 18 of the box 11. Also, one of the end walls 15 has a narrow vertical flap 19 which is secured to an overlapping portion of one of the side walls 14 to complete the periphery of the box 11.

The upper edges of the end walls 15 terminate in in-turned depending flaps 20. These flaps 20 have a dual purpose, as will be described in detail hereinafter.

The side walls 14 are provided with relatively large openings 21. These openings 21 are much larger than the articles to be packaged within the box 11, and are primarily for ventilating purposes, although they will also facilitate the inspection of the articles packaged within the box 11.

Upper portions of the end walls 15 are provided with hand holes 22. As is best illustrated in Figure 3, the upper boundaries of the hand holes 22 are disposed flush with the lower edges of the flaps 20. As a result, a two ply grip is provided on the box 11.

The inner side members 13 are of a slatted construction, and each inner side member 13 is formed of a plurality of slats 23 which are vertically disposed, and which are spaced apart to provide vertical openings 24. The lower ends of the vertical slats 23 are connected together by a horizontal slat 25. A second horizontal slat 26 extends between and connects the upper edges of the slats 23. If desired, staples, such as the staples 27, may be used for securing the slats together.

Each of the inner side members 13 is of a length slightly greater than the initial spacing between the flaps 20. As a result, when the inner side member 13 is positioned within the box 11, the ends of the flaps 20 are crushed to form a vertical recess 28, best illustrated in Figure 6. The upper corners of the inner side members 13 being disposed within the recesses 28, the inner side members 13 are locked in place within the box 11. It is to be noted that the openings 24 are aligned generally with the large openings 21 and thus in effect restrict the size of the large openings 21.

The cover 12 is of a similar construction to the box 11, and includes a body portion, generally referred to by the numeral 29, the body portion 29 being formed by a pair of cover side walls 30 and a pair of cover end walls 31. One of the cover side walls 30 is provided with a flap 32 on the end thereof, which flap 32 underlies one of the cover end walls 31 and is secured thereto by staples 33.

The cover 12 also includes a top wall 34. The top wall 34 is formed by a pair of flaps 35 which are extensions of the cover side walls 30, and a pair of flaps 36 which are extensions of the cover end walls 31, the flaps 36 underlying the flaps 35 and being secured thereto by staples 37, as is best illustrated in Figure 1.

At the beginning of the packaging operation, the container 10 is assembled, as is best illustrated in Figure 5. In this condition, the inner side members 13 are disposed within the assembled box 11, and the body portion 29 of the cover 12 has been assembled, but the flaps 35 and 36 are still free. The cover 12 is telescoped down over the box 11 with the body portion 29, and the flaps 35 and 36 engaging respective ones of the side walls and end walls of the box 11 to close the openings 21. Thus, the container 10 is provided in its complete condition ready to be filled and closed. The container 10 assembled as described above, is suspended from a hook member in the packing house and travels along on a conveyor in front of the packers. When a container is needed, the packer merely reaches up, grabs off a container, and has in one assembly the two piece container, that is, the box and the cover, plus the slatted inner side members.

In the packing plant, apples travel along on a conveyor belt past an operator who picks up the apples from the belt and places them in cavities of a molded pulp tray, such as the pulp trays 38 illustrated in Figure 5. When

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the tray 38 is filled with apples 39, it is then dropped into the box 11. The air within the box 11 is trapped beneath the tray 38, which tray has an outline corresponding to the general cross-section of the box 11, and cushions the descent of the tray, the tray descending gradually as the air escapes. The air escapes around the edges of the tray and through the spacing between the flaps of the inner side members 13. If the cover 12 were not in place over the openings 21, the air would escape through the openings 21 too quickly to support the tray of apples, with the result that the tray of apples would rapidly descend into the box 11. Such rapid rate of descent, coupled with the sudden stopping of the tray at the bottom of the box 11, would result in the apples 39 being displaced from their respective cavities in the tray 38. Furthermore, the loaded tray 38 striking a lower tier of apples would result in the bruising of such apples.

After the required number of trays of apples are positioned within the box 11, the cover 12 is moved upwardly and the flaps 35 and 36 are stapled together, as is best illustrated in Figure 1. At this time, the package is complete.

It is to be noted that the cover end walls 31 are also provided with hand holes 40. The hand holes 40 are so positioned within the cover end walls 31 that they are aligned with the hand holes 22. Thus, as is best illustrated in Figure 3, a three ply grip is provided for the finished package.

In the finished package, the openings 21 are partially closed by the slats 23 of the inner side members 13 and the aligned openings 21 and 24 permit the necessary circulation of air between the individual pieces of fruit within the container 10 to prevent spoilage. Also, a limited inspection may be had through the openings in the inner side members 13. The inner side members 13 have an additional function, in that they are of sufficient vertical rigidity to reinforce the containers 10 against crushing. This is highly desirable in that when the containers 10 are stored in their packaged state, they are placed one on top of the other.

From the foregoing, it will be seen that novel and advantageous provisions has been made for carrying out the desired end. However, attention is again directed to the fact that variations may be made in the example method and apparatus disclosed herein without departing from the spirit and scope of the invention, as defined in the appended claims.

I claim:

1. A container unit for receiving and packaging fruit and the like disposed on trays, said container unit comprising a box having a bottom and upstanding walls, certain of said upstanding walls having ventilation openings therein, reinforcing members disposed within said box alongside at least two opposite ones of said certain upstanding walls, said reinforcing members extending substantially the full height of said upstanding walls to prevent collapsing of said upstanding wall from a downward load placed on the container, said reinforcing members having openings generally aligned with said ventilation openings, and a cover forming member, said cover forming member having a tubular body portion corresponding generally to the outline of the bottom of said box and flaps extending upwardly from said body portion for forming a top, said cover forming member being telescoped down over said box upstanding walls with said body portion and at least certain of said flaps overlying and closing said ventilation openings.

2. A container for fruit and the like comprising a paperboard box having a bottom, side walls, and end walls, said side walls each having large ventilation openings as compared to the size of the side wall, an inner side member extending along the inner surface of each side wall, said inner side members having smaller openings generally aligned with said side wall openings to permit ventilation and inspection of packaged articles

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and at the same time preventing removal of the articles, and a cover, said cover including a tubular body portion and top wall forming flaps, said body portion being telescoped over lower portions of said side and end walls and said cover flaps forming continuations of said body portion and being disposed in face-to-face relation to upper portions of said side and end walls, said cover temporarily covering said side wall openings.

3. A container unit for receiving and packaging fruit and the like disposed in trays, said container unit comprising a box having a bottom and upstanding walls having openings therein for the circulation of air through said certain upstanding walls to ventilate the interior of said box, said upstanding walls having interior edges defining boundaries of said openings with opposed portions of the interior edges defining each opening being spaced apart to permit free circulation of air through said openings, and a cover forming member, said cover forming member having a tubular body portion corresponding generally to the outline of the bottom of said box and flaps extending upwardly from said body portion for forming a top, said cover forming member being telescoped down over said box upstanding walls with said body portion and at least certain of said flaps each partially overlying said ventilation openings with said body portion and said certain flaps combining to close all of said ventilation openings.

4. A container unit for packaging fruit and the like disposed on trays, said container unit comprising a box having a bottom and upstanding walls, at least one of said upstanding walls having an opening therein for the circulation of air through said one upstanding wall to ventilate the interior of said box, said one upstanding wall having interior edges defining boundaries of said ventilation opening with opposed portions of said interior edges being spaced apart to permit free circulation of air through said ventilation opening, and a cover mem-

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ber, said cover member having a tubular body portion corresponding generally to the outline of the bottom of said box and imperforate top forming flaps connected to said body portion along the upper edges thereof, said top forming flaps being initially free and swingable upwardly to form extensions of said body portion, the combined vertical dimension along said body portion and an associated one of said top forming flaps being at least as great as the distance from said bottom to the top of said ventilation opening whereby said cover member may be telescoped over said box with said body portion and said top forming flaps combining to temporarily close said ventilation opening and thus provide an air cushion for trays descending in said box, and the height of said body portion being relatively small as compared to the height of said side walls and generally equal to the distance between the top of said box and the upper boundary of said ventilation opening, whereby when said cover is in a normal box closing position substantially all of said ventilation opening will be exposed.

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