Nov. 14, 1961 W. T. COOK 3,008,625

FRUIT SHIPPING CONTAINER

Filed March 18, 1959 2 Sheets-Sheet 1

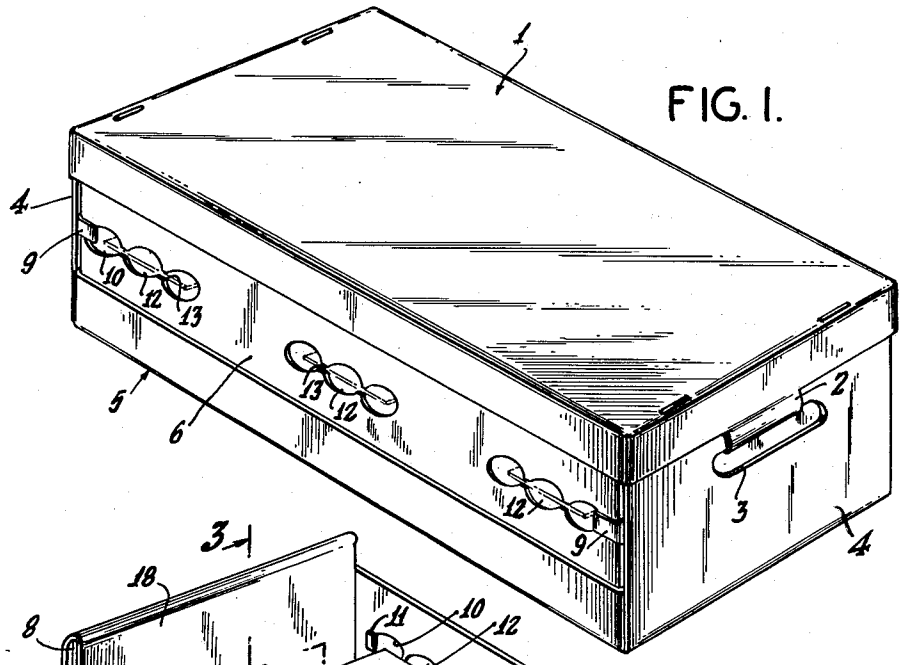

FIG. 1.

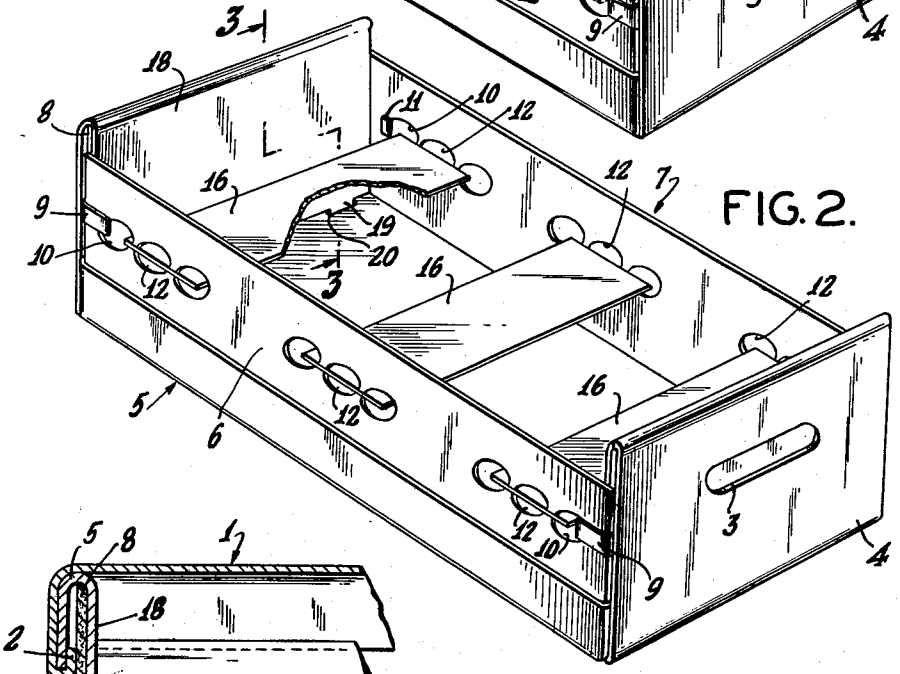

FIG. 2.

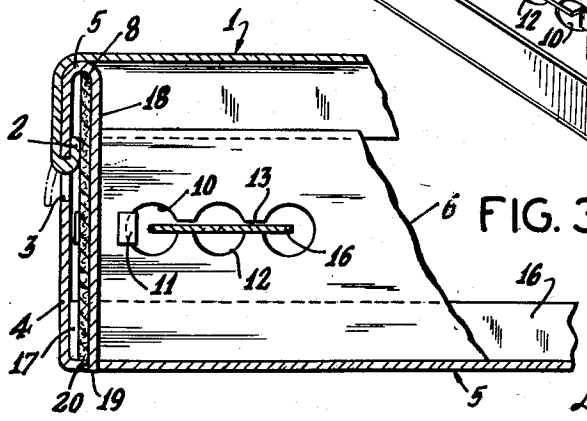

FIG. 3.

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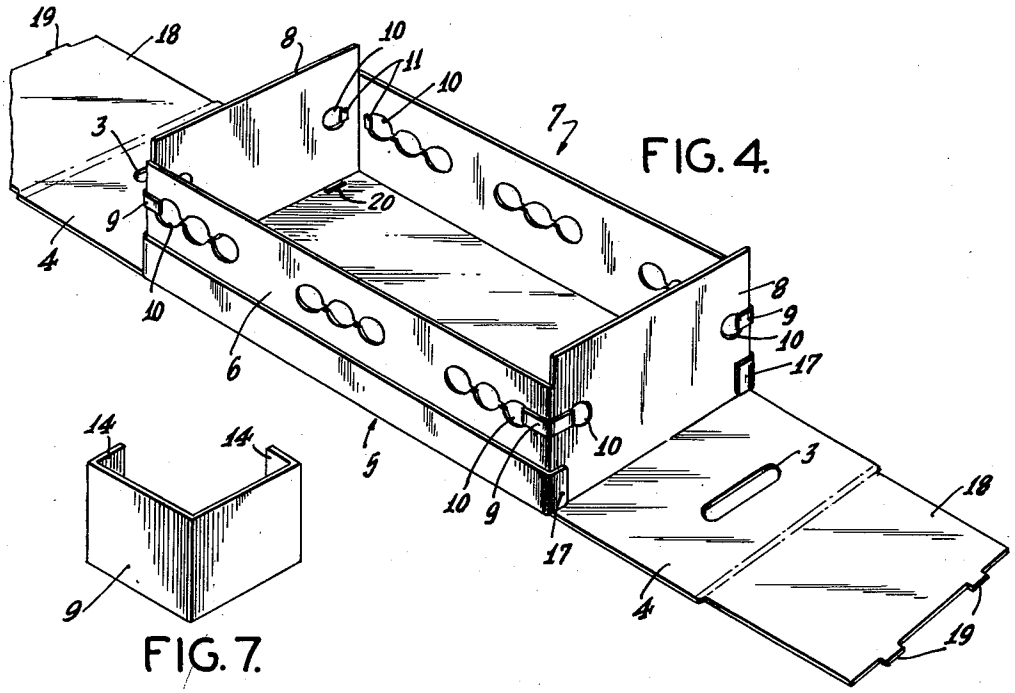

FIG. 4.

FIG. 7.

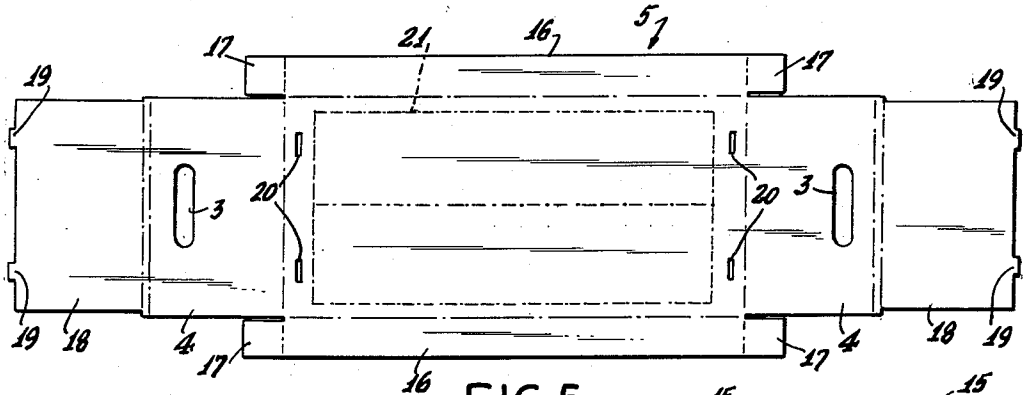

FIG. 5.

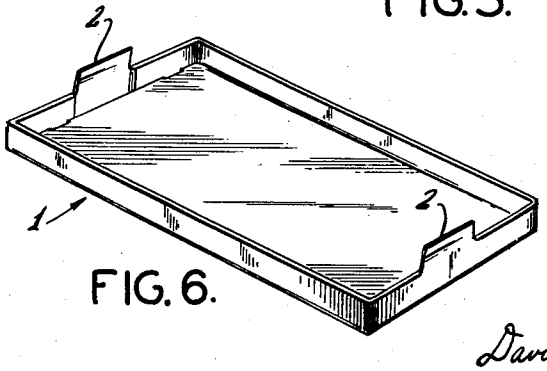

FIG. 6.

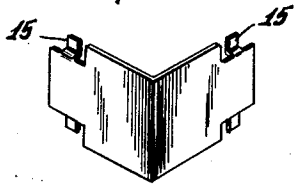

FIG. 8.

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FRUIT SHIPPING CONTAINER

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1 Claim. (Cl. 229—23)

This invention relates to shipping containers and, more particularly, to shipping containers for transporting and exhibiting fresh fruit or vegetables from distant growing areas.

Shipping boxes normally used for the transportation of perishable fruits and vegetables are generally constructed of wood or corrugated paper board or combinations of both materials. Containers made of corrugated paper board are not sufficiently strong to withstand the stacking of boxes in tiers in large numbers without subjecting the lowermost boxes to excessive weight from the upper ones, thus tending to crush the boxes and perishable contents alike. Containers constructed entirely of wood are sufficiently strong for the purpose, but are expensive and bulky to store prior to use.

It is the purpose of my invention to provide a novel shipping container which combines the economic features of corrugated paper board and the structural strength of wooden boxes while retaining an advantage of the former type in that the components may be stored in flat piles until ready for use. My invention also eliminates a further objection encountered with slatted wooden boxes where the outside fruit is often cut, bruised or damaged by the sharp edges of the slats, especially under conditions of vibration arising in transit.

My invention resides in the use of top lid and bottom members of corrugated paper board which enclose the open ends of a frame having side and end walls constructed of separate pieces of strong reinforcing material such as hardboard, pressboard, plastic or even possibly of thin wood, which are interconnected to form the retaining side portions of the shipping container.

In describing the preferred embodiment of my invention reference will be made to the constructional details set forth in the accompanying drawings of which:

FIG. 1 is a perspective view of a shipping container embodying my invention.

FIG. 2 is a perspective view of the container with the lid member removed to show construction details of the bottom portion.

FIG. 3 is a partial sectional view of the lower portion of the container taken along line 3—3 of FIG. 2, showing the details of the end construction.

FIG. 4 is a perspective view of the bottom portion of the container where the corrugated paper board is partially unfolded to reveal the construction details of the central strengthener frame.

FIG. 5 is a plan view of the bottom corrugated paper board member showing the score lines for folding.

FIG. 6 is a perspective view of the lid portion of my container.

FIG. 7 and FIG. 8 are views of two types of clip for interconnecting the side members.

FIG. 1 illustrates the top lid member **1** of conventional design having end flaps **2** for securing the lid to the receptacle portion during transit. The end flaps **2** are tucked back inside the lower portion of the container through the finger recess **3** in end wall **4**.

The receptacle portion of the container consists of two separate units which lock together during erection. These two units are the frame section **7** and the bottom section **5** as illustrated in FIG. 1.

The frame section is more clearly shown in FIG. 4 and consists of two side members **6** and two taller end members **8**. These four members are connected together at

their abutting ends by the metal clips **9**. Members **6** need not be less tall than end members **8** as shown, but it is common practice to construct fruit shipping containers in that manner.

During transit the combination of vibration and shrivelling of the fruit causes the general level of the merchandise to sink below the level, represented by the end portions, to which it was originally packed. Merchandising techniques dictate that freshly unpacked fruit when displayed should be level with the edges of the sidewall members or slightly above. The open space resulting from use of the less tall members **6** also provides additional ventilation during transit. If desired, the side members could be extended to the same width as the end members. In my preferred embodiment of the invention, I make these vertical wall members of "Masonite" or other fiberboard material having superior compressional characteristics under conditions of edge loading. Other materials may be substituted such as plastic or even wood veneer providing it has suitable compressional characteristics for the use intended.

Sidewall members **6** have spaced ventilation holes **12** to permit air circulation. The shape of the ventilating holes, comprising, as shown, three closely spaced round holes with interconnecting slots, provides small gaps **13** into which may be inserted lateral slat-type level spacing members **16**, if desired. For instance, if it is desired to ship tangerines, two levels of fruit would fill the box and layer separators, if used, serve to minimize the pressure applied to the lower level. However, if grapefruit are to be shipped no layer separator would be utilized since one level would fill the box.

The four elements of the frame section are maintained in a rectangular shape by the end clips **9** which engage the members **6** and **8** on the outside corners thereof and pass through the end holes **10** to engage the inner surfaces of the members as at **11**.

Two forms of the clip **9** which I have found suitable are illustrated in FIGURES 7 and 8. The clip of FIG. 7 has extended ears **14** which, if made of soft metal such as aluminum, may be inserted into the proper openings and folded back on themselves along the inside surface of the side members during assembly. The clip illustrated in FIG. 8 has ears **15** which, when snapped into position, engage the inner surface of the side members and provides an interlocking feature without any bending being necessary. When this latter form of clip is used, it should be made of metal such as thin steel having a spring-like quality.

The bottom member **5** is made of heavy material such as corrugated paper which may be folded during erection. The plan view of the member **5** is set forth in FIG. 5. Holes **20** are adapted to receive the tabs **19** on the end extensions **18**.

To assemble the receptacle portion, an assembled frame is placed upon bottom member **5**. The edges are folded up around the frame and the tabs **17** are tucked around the end of the frame. Ends **4** are bent upwardly and extension **18** is bent around the frame member until tabs **19** enter their respective recesses **20**, thus combining the bottom and frame into a unit receptacle.

Bottom **5** may be provided with scored flaps **21** if desired. It is sometimes desirable to load fruit containers of this type from the bottom in order that the top layer of fruit, on opening for display, will be level with the inside surface of the lid. Where small fruit such as cherries are packed, non-uniformity in size and shape of the fruit yields an uneven and unattractive surface layer unless packed from the bottom of the container. After packing, the loading flaps may be resealed with an adhesive tape.

The fruit shipping container thus described has superior strength while reducing the width of corrugated paper necessary for fabrication of bottom members of the conventional type. The smooth inner surface presented by this construction reduces the damage to the outer fruit resulting from vibration against sharp projections which arise during transit. These advantages may be obtained at no material increase over the cost of construction of similar sized fruit containers of conventional design.

I claim:

A shipping container comprising a bottom lid member having a rectangular bottom panel, vertical side edges and vertical end walls with similar sized extensions extending downwardly to the bottom lid member, a frame section having four discrete vertical members of rigid material extending upwardly from said bottom panel, two opposed members being side members in juxtaposition to their respective side edges, the other two members being end members sandwiched between their respective end walls and extensions, the side members being less tall than the end members to facilitate ventilation and merchandising, the side members having a series of ventilation

holes horizontally aligned with interconnecting slots, slat-type level spacing members extending horizontally between said side members and having their ends disposed in said slots and holes, the end members having end holes, clips of resilient material extending around the outer corners formed by adjacent side and end members and having resilient ears extending through said holes into engagement with the internal surface of the side and end members, and a shallow top member telescopically seated over the top of said side members and the end walls.

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