

- [54] **DISPLAY TRAY**
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- [58] Field of Search ..... **206/1 R, 44 R, 45.14, 206/65 R, 73; 229/28 R, 34 R**

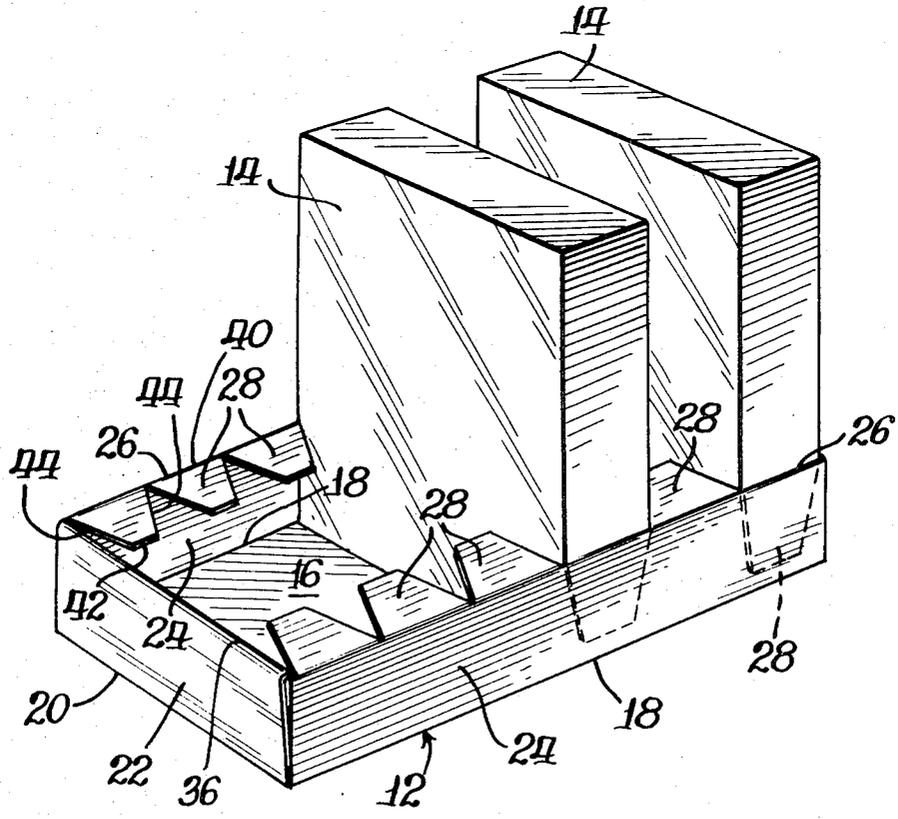
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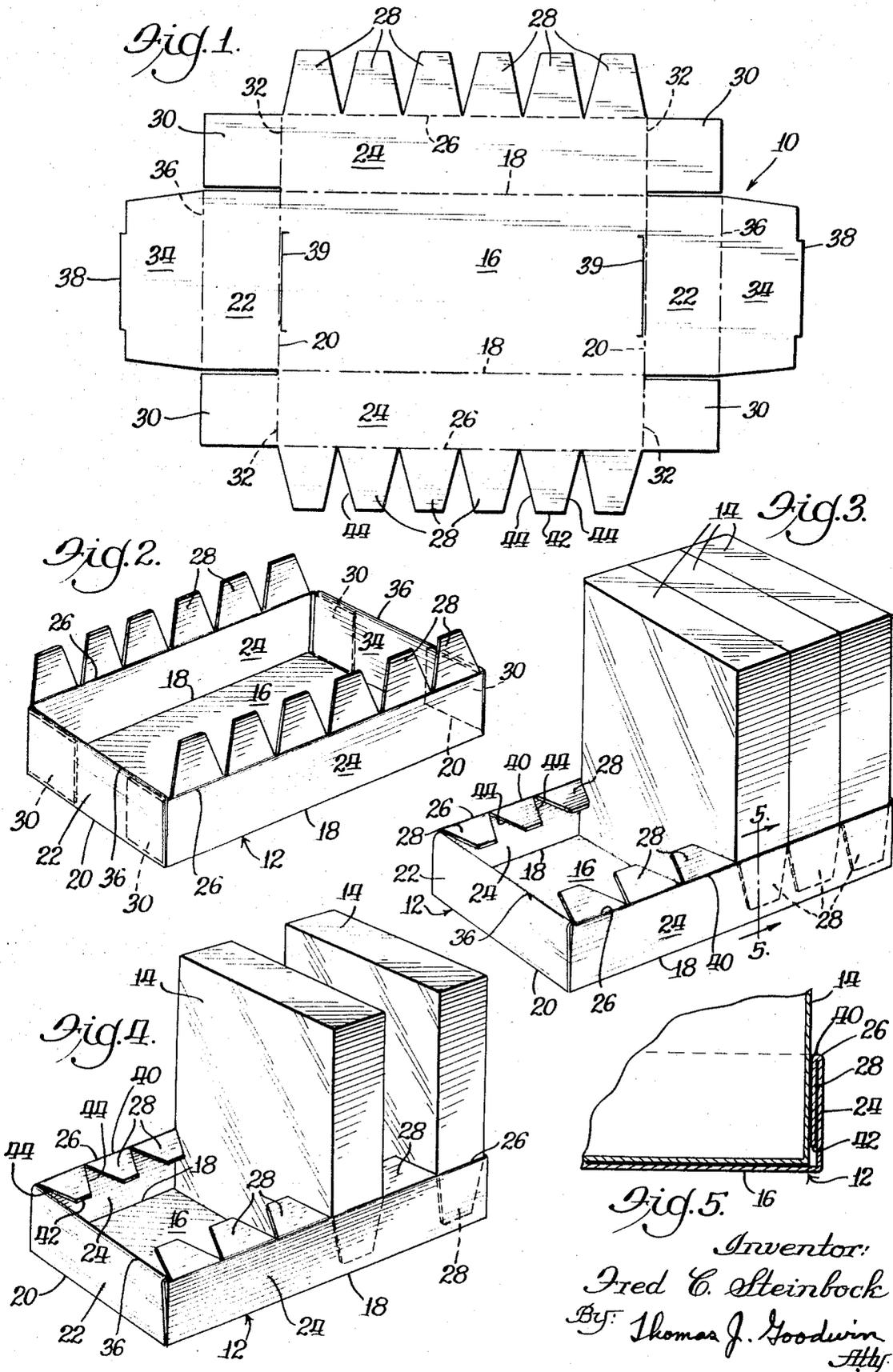
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- [56] **References Cited**
- UNITED STATES PATENTS**
- 2,998,879 9/1961 Snyder, Jr. .... 206/1 R
- 525,585 9/1894 Brown ..... 229/34 R
- 3,208,583 9/1965 Kamps ..... 206/44 R
- 2,980,240 4/1961 Amatel ..... 206/45.14

[57] **ABSTRACT**  
 A tray for displaying a plurality of elongated cartons. The tray has a rectangular bottom and pairs of spaced end and side panels extending upwardly from the bottom. A plurality of opposed and inwardly directed retaining tabs are springingly connected to an upper edge of the side panels, with the opposed tabs being aligned in pairs. Each of the tab pairs fold downwardly into the tray to receive a carton, and spring upwardly responsive to removal of the carton. The upwardly sprung tabs frictionally engage the side of the cartons remaining in the tray adjacent the removed carton to retain the remaining cartons in an upright position.

**8 Claims, 5 Drawing Figures**





## DISPLAY TRAY

## BACKGROUND OF THE INVENTION

## 1. Field of the Invention

This invention relates to a tray for displaying a plurality of elongated cartons.

## 2. Description of the Prior Art

In the past, various types of containers for retaining packages or boxes have been proposed. For example, Kamps U.S. Pat. No. 3,208,583 shows a display holder having side flanges with notches to receive and hold thin packages. De Feo U.S. Pat. No. 3,224,568 relates to a container having serrated side flaps which frictionally engage inserted boxes. Brown U.S. Pat. No. 525,585 is concerned with a box having upper side flaps to prevent small articles, such as matches, from falling out of the box.

## SUMMARY OF THE INVENTION

The principle feature of the present invention is the provision of a compact and relatively shallow tray of simplified construction to retain a plurality of elongated cartons in an upright position for display.

The tray of the present invention has a rectangular bottom, with a pair of end panels and a pair of side panels extending upwardly from the tray bottom. The length of the end panels is approximately equal to the length of the cartons, the height of the side panels is less than the height of the cartons, and the length of the side panels is sufficiently large for insertion of a plurality of contiguous upright cartons into the tray. A plurality of opposed and inwardly directed retaining tabs are springingly connected to an upper edge of the side panels, with the opposed tabs being aligned in pairs.

A feature of the invention is that each of the tab pairs fold downwardly into the tray to receive a carton in the tray.

Each of the tab pairs spring upwardly responsive to the removal of a carton and frictionally engage the sides of the cartons remaining in the tray which are adjacent the removed carton.

Another feature of the invention is that the upwardly sprung tabs retain the remaining cartons in an upright position.

A further feature of the invention is the provision of a display package of cartons in which a plurality of contiguous cartons are positioned upright in the tray.

Further features will become more fully apparent in the following description of the embodiment of this invention and from the appended claims.

## DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a plan view of a flexible sheet as cut for constructing the tray of the present invention;

FIG. 2 is a perspective view of the tray of the invention as formed by folding the sheet of FIG. 1, prior to folding the tabs inwardly;

FIG. 3 is a perspective view of the tray with a plurality of contiguous cartons inserted into the tray;

FIG. 4 is a perspective view of the tray of FIG. 3 with one of the cartons removed;

FIG. 5 is a fragmentary sectional view taken substantially as indicated along the line 5-5 of FIG. 3.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to FIG. 1, an integral flexible sheet, generally designated 10, such as paper or cardboard is shown which may be folded into a tray, generally designated 12 as shown in FIGS. 2-4, for displaying a plurality of elongated cartons 14 in an upright position.

The tray 12 includes a rectangular bottom 16 having a pair of aligned side edges 18 and a pair of aligned end edges 20 which connect the side edges 18. A pair of spaced end panels or walls 22 extend upwardly from the bottom end edges 20, and a pair of spaced side panels or walls 24 extend upwardly from the bottom side edges 18, with the side walls 24 extending between the end walls 22. Each of the side panels 24 has an upper edge 26 extending between the end panels 22, and a plurality of retaining tabs 28 are springingly connected to the upper side wall edges 26.

The tray 12 is constructed from the sheet 10 of FIG. 1 as follows. The side panels 24 are folded upwardly from the bottom 16 along the side edges 18, and a pair of flaps 30, which extend outwardly from both ends of the side panels 24, are folded inwardly along the lines 32 to a position aligned with the end edges 20. Next, the end panels 22 are folded upwardly along the end edges 20 on the outside of the flaps 30. A pair of locking tabs 34, each of which extends outwardly from an end panel 22, is then folded inwardly into the tray along the lines 36 and over the flaps 30, until a pair of tongues 38 on the end of the tabs 34 lock into a pair of bottom slots 39 which are aligned with and slightly spaced from the end edges 20. Thus, the end panels 22 and locking tabs 34 engage the flaps 30 to hold the side panels 24 in an upright position, as shown in FIG. 2. Finally, the retaining tabs 28 are folded inwardly into the tray 12 along the upper side wall edges 26, producing the tray as illustrated in FIGS. 3 and 4.

Each tab 28 on one side wall 24 along the edge 26 is aligned with a tab, also designated by the numeral 28, on the other, opposite side wall edge 26 to provide a pair of tabs opposed to each other. Each of the tabs 28 has a base edge 40 connected to an upper side wall edge 26, an end edge 42 having a length less than the length of the base edge 40, and a pair of side edges 44 connecting the base and end edges 40 and 42 which define a slight taper in the tab 28 extending from the upper edge 26. The tab end edges 42 are generally aligned with the base edges 40, and the distance between the base and end edges 40 and 42 is less than the height of the side panels 24, in order that the tabs 28 may be folded downwardly against the side panels 24 without striking the bottom 16.

Since the inwardly directed tabs 28 are integral with the side panels 24, the tabs 28 are biased upwardly in the tray by their flexible connection to the upper side panel edges 26. However, it is contemplated that separate tabs 28 may be connected to the side panels 24 by suitable means such as tape or pieces of adhered paper, with the tab connecting means urging the tabs upwardly in the tray. Although the tray has been described as constructed from the sheet 10, it is also understood that the tabs 28 may be connected to any suitable tray formed in a different manner or an insert extending around the inside of the tray walls.

As shown in FIG. 3 and 5, a plurality of cartons 14 may be inserted into the tray 12, and the tab pairs 28

fold downwardly into the tray to a position intermediate the sides of the cartons 14 and the side panels 24 to receive the cartons. The end panels 22 have a length approximately equal to the length of the cartons 14, in order that the cartons extend between the side walls 24. 5  
 The length of the tab base edges 40 is approximately equal to the width of the cartons 14, such that one aligned tab pair 28 folds downwardly into the tray responsive to the insertion of a carton, and the length of the side panels 24 is sufficiently large for insertion of a plurality of contiguous cartons. Although the tray is shown as having six pairs of tabs 28 for insertion of six contiguous cartons 14, the length of the side panels 24 and the corresponding number of tab pairs 28 may be suitably modified to accommodate any number of cartons, as desired. 15

Since the tabs 28 have a slight taper and are biased upwardly in the tray, the tab pairs which are not engaged against a side panel 24 by an inserted carton remain directed inwardly into the tray. Accordingly, the side edges 44 of these tabs frictionally engage the sides of a carton 14 which is inserted into the tray adjacent the tab pair. As viewed in FIG. 3, the side edges 44 of the third tab pair 28 from the left engages the sides of the most left carton, in order to retain the three inserted cartons in an upright position, and thus prevents the cartons from falling forward in the tray 12. 20 25

Although initially the tray is entirely filled with cartons for display, and the cartons are preferably removed seriatim from the front to the back of the tray, the middle carton of the three inserted cartons of FIG. 3 has been removed in FIG. 4 for purpose of clarity in describing the invention. After the carton has been removed, the tab pair 28 which was formerly engaged against the side panel 24, springs upwardly in the tray responsive to removal of the carton and the side edges 44 of the upwardly sprung tab pair 28 frictionally engage the sides of the cartons remaining in the tray, which are adjacent the removed carton, to retain the remaining cartons in the upright position. The height of the cartons is substantially greater than the height of the side panels 24, and the invention thus provides a relatively shallow and compact tray which retains the individual cartons in an upright position until all of them have been removed from the tray. Consequently, the elongated cartons are prevented from falling over and spilling in the tray. 30 35 40 45

The foregoing detailed description is given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, as modifications will be obvious to those skilled in the art. 50

I claim:

1. A display package of cartons comprising:
  - a tray including,
    - a bottom,
    - a pair of spaced end walls extending upwardly from said bottom,
    - a pair of spaced side walls extending upwardly from the bottom and extending between said end walls, said side walls having an upper edge connecting the end walls, and
    - a plurality of opposed and inwardly directed retaining tabs springingly connected to said upper side wall edges, said opposed tabs being aligned in

pairs along said upper edges; and  
 a plurality of upright cartons received in said tray in a contiguous relationship longitudinally along the tray relative to the side walls, said cartons having a height greater than the height of said side walls, a width approximately equal to the width of the tabs along said upper side wall edges, and a length approximately equal to the length of the end walls whereby the cartons extend between the side walls, with each of said tab pairs being folded downwardly in the tray to a position intermediate the sides of a carton and said side walls.

2. The display package of claim 1 wherein said tabs have a slight inward taper extending from said upper side wall edges, and have a length shorter than the height of the side walls.

3. The display package of claim 1 wherein the height of the cartons is substantially greater than the height of the side walls.

4. A display package of cartons comprising:
  - a plurality of cartons;
  - a tray including,
    - a rectangular bottom having a pair of side edges and a pair of end edges connecting said side edges;
    - a pair of end panels extending upwardly from said bottom end edges and having a length approximately equal to the length of said cartons;
    - a pair of side panels extending upwardly from said bottom side edges and having a height less than the height of said cartons, with both of said side panels having an upper edge extending between said end panels and having a sufficient length for insertion of a plurality of said cartons into said tray in a contiguous relationship; and

a plurality of opposed and inwardly directed retaining tabs springingly connected to said upper side panel edges, said tabs having a base edge connected to the upper side panel edges, with the length of said base edges being approximately equal to the width of the cartons, said opposed tabs being aligned in a plurality of pairs, with each of said tab pairs folding downwardly into the tray to receive an upright carton and springing upwardly responsive to removal of the carton, said upwardly sprung tabs frictionally engaging the sides of the cartons remaining in the tray adjacent the removed carton to retain said remaining cartons in their upright position.

5. The tray of claim 1 wherein each of said retaining tabs includes, an end edge having a length less than the length of said base edge, and a pair of side edges connecting the base and end edges and defining a taper in the tab.

6. The tray of claim 5 wherein the lengths of said tab end edges are slightly less than the width of the cartons.

7. The tray of claim 5 wherein said tab end edges are generally aligned with said base edges, and the distance between said base and end edges is less than the height of said side panels.

8. The tray of claim 1 wherein each of said side panels and connected retaining tabs is an integral flexible sheet, with said tabs being connected to the side panels by a fold in the sheet.

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