

July 6, 1965

R. V. JOHNSON

3,193,108

SHELF EXTENDER

Filed Aug. 19, 1963

2 Sheets-Sheet 1

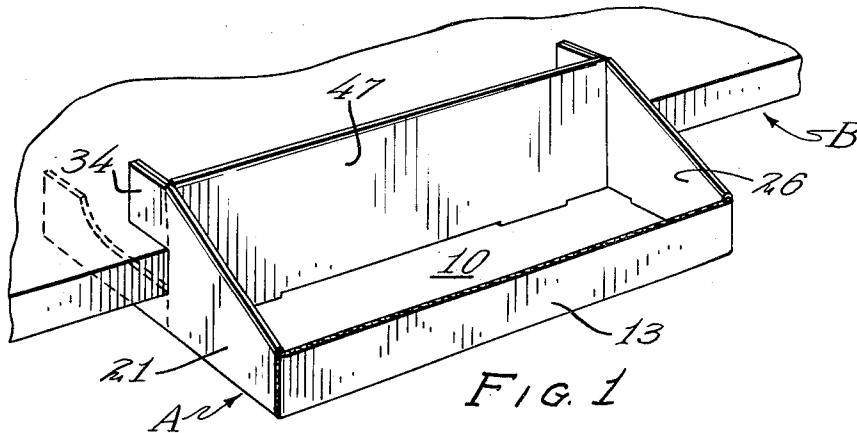


FIG. 1

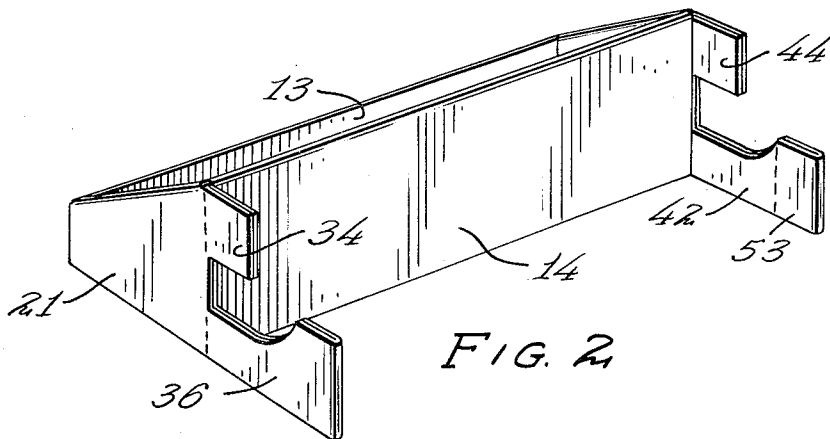


FIG. 2

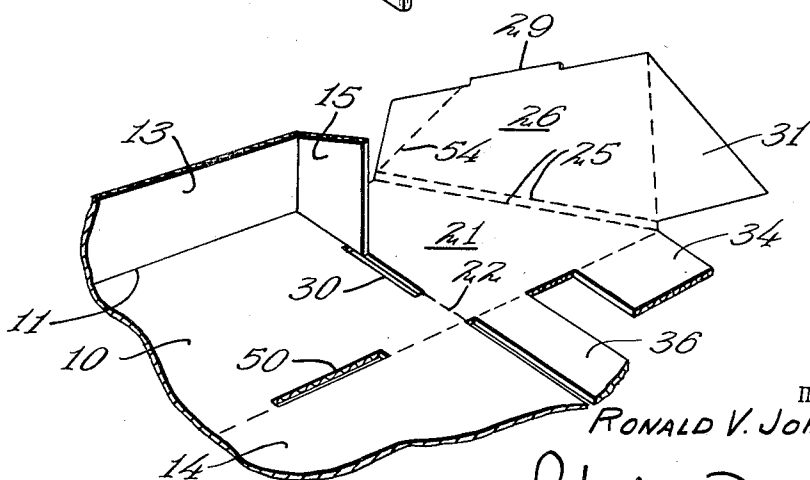


FIG. 3

INVENTOR

RONALD V. JOHNSON

BY

Robert M. Dunning

ATTORNEY

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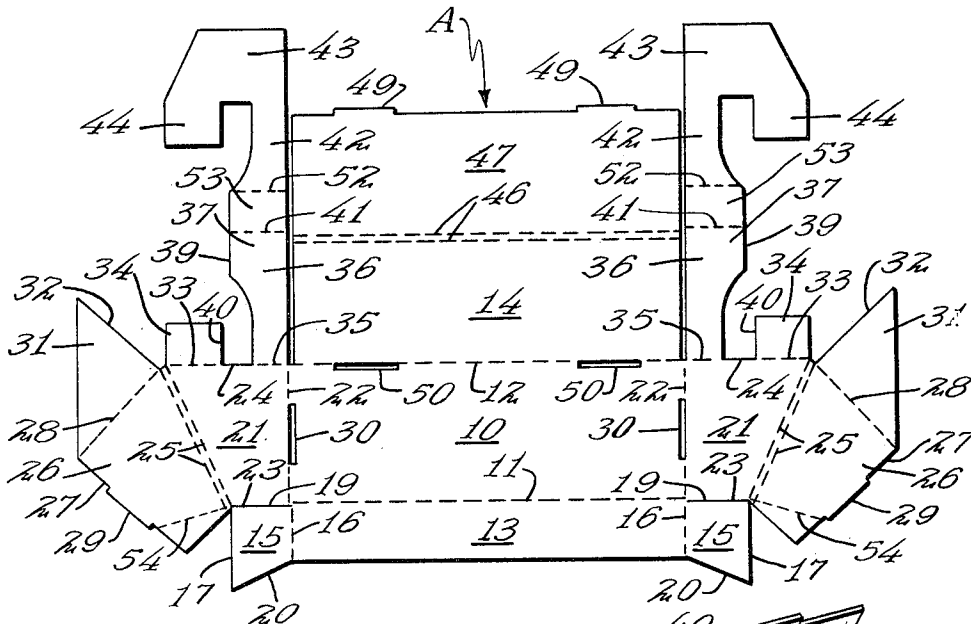


FIG. 7

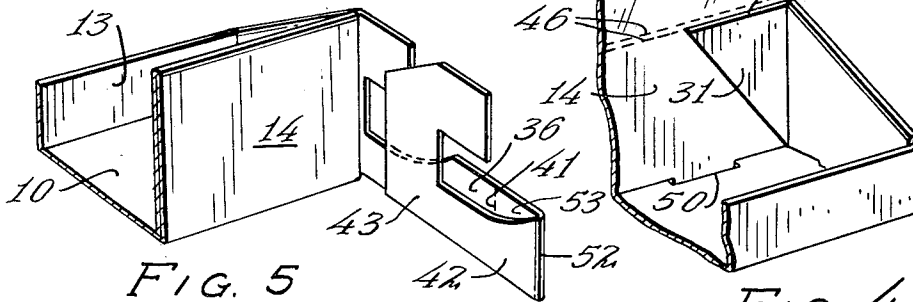


FIG. 5

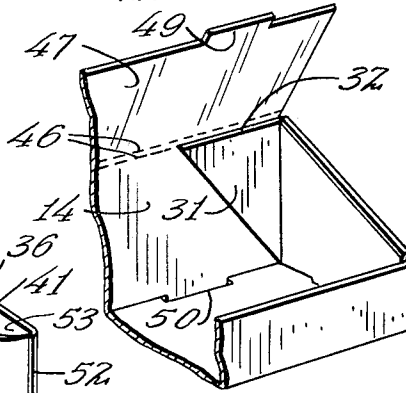


FIG. 4

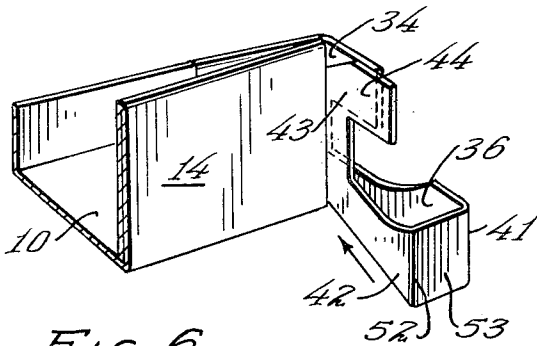


FIG. 6

INVENTOR

RONALD V. JOHNSON

BY

Robert M. Dunning

ATTORNEY

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3,193,108

SHELF EXTENDER

Ronald V. Johnson, Minneapolis, Minn., assignor to
Waldorf Paper Products Company, Ramsey, Minn., a
corporation of Minnesota

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9 Claims. (Cl. 211-153)

This invention relates to an improvement in shelf extenders and deals particularly with a folded paper board tray which may be mounted on the forward edge of a store shelf to project outwardly therefrom.

In modern day supermarkets, goods of all types are usually stacked up neatly on the shelves from which they can be readily removed by the customers. Because of the fact that there is often one product after another in cans or bottles of similar shape and size, some difficulty is experienced in finding a particular product. In cases where some item is on special sale, or a new product is being introduced, some means must be provided for separating this product from the others so that it will stand out and be readily noticed. In some instances, special floor stands are provided for this purpose. In others, shelf extenders are provided which project beyond the shelves and forwardly thereof so that the product contained therein is more readily visible than the product on the shelves.

In order to accomplish their desired result, shelf extenders of this type must be relatively inexpensive, as they are thrown away after a relatively short period of use. More permanent metal shelf extenders could be provided, but in such a case the extenders would have to be used for various products in order to be economically practical, and it is usually desired that the surfaces of the shelf extender be used for advertising purposes. As a result, shelf extenders formed of less expensive materials, such as corrugated paperboard have been found somewhat more practical than the metal units. Shelf extenders of this type may be readily printed with the necessary advertising copy and may be produced at low enough cost so that they can be discarded after the period of advertising has been passed.

A feature of the present invention resides in the provision of a shelf extender which is formed of disposable material and which is sufficiently strong to support a considerable weight of product. As a result, the device may be used as an advertisement for canned goods or bottled goods which are normally quite heavy.

A further feature of the present invention resides in the provision of a shelf extender which may be either shipped in a flat state or which may be shipped in a rectangular container without a material loss of space. In order to simplify the operation of the supermarket operators and to assure the fact that the shelf extender will be used, rather than thrown away, portions of the brackets which connect the extender to the shelf are folded flat against a wall of the tray, the tray being filled with the product, and the unit is placed in a rectangular outer container for shipment.

These and other objects and novel features of the present invention will be more clearly and fully set forth in the following specification and claims.

In the drawing forming a part of the specification; FIGURE 1 is a perspective view of the shelf extender in place upon a shelf.

FIGURE 2 is a rear perspective view of the shelf extender in readiness for operation.

FIGURE 3 is a perspective view of the partially folded tray, illustrating the manner in which the tray is assembled.

FIGURE 4 is also a perspective view of a portion of the tray in a later step of the assembly.

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FIGURE 5 is a rear perspective view of a portion of the shelf extender showing the supporting brackets in partially assembled form.

FIGURE 6 is a view similar to FIGURE 5 but showing a later step of the assembly operation.

FIGURE 7 is a diagrammatic view of the blank from which the extender is formed. The shelf extender is illustrated in general by the letter A and is designed to engage the forward edge of a shelf D to extend forwardly therefrom. The manner in which the shelf extender appears in use is illustrated in FIGURE 1 of the drawings, the contents of the tray being omitted in order to better disclose the construction.

As indicated in FIGURE 7 of the drawings, the shelf extender includes a tray portion having a rectangular bottom panel 10 foldably connected along parallel fold lines 11 and 12 to a front wall 13 and rear wall 14 respectively. In preferred form, the rear wall 14 is substantially higher than the front wall 13 to provide sufficient strength without concealing the goods.

Trapezoidal corner flaps 15 are hinged to the ends of the front panel 13 along parallel fold lines 16. The shorter parallel side of each corner flap 15 adjoins the fold line 16 and the wider parallel side 17 forms the free end of the flap. One edge 19 of each corner flap 15 is substantially an extension of the fold line 11 and is at right angles through the fold lines 16. The other edge 20 of each flap is angled to follow the shape of the tray end walls which will be described.

The tray ends include outer end wall panels 21 which are hinged to the ends of the tray bottom 11 along parallel fold lines which are generally aligned with the fold line 16 but which are slightly offset outwardly to permit each corner flap 15 to fold inwardly of the adjacent outer end wall 21. The end walls 21 are of trapezoidal form with the shorter parallel edge 23 substantially equal in height to the front wall 13 and the longer parallel wall 24 equal in height to the rear wall 14. The edges 23 and 24 are at right angles to the fold lines 22. The inclined upper edges of the end walls 21 are connected along double score lines 25 to end wall liner panels 26 which are substantially similar in shape and area to the outer end walls 21. As a result, when the liner panels 26 are folded along the double fold line 25, the liner panels may assume substantially contiguous relation with the outer end walls. The edges 27 of the liner panels 26 which extend along the fold line 22 when the liner panels are folded are provided with short locking tongues 29, and apertures 30 are provided in the bottom panel 10 along the end edges 22 thereof into which the locking tongues 29 may extend. The longer parallel side of each of the trapezoidal end liner panels 26 is connected along a fold line 28 to a generally triangular flap 31, one edge 32 of which will extend along the upper edge of the rear wall 14 in folded form of the extender, as is best illustrated in FIGURE 4 of the drawings.

The longer side 24 of each of the outer end wall panels 21 is connected along a fold line 33 to a bracket flap 34, each bracket flap 34 projecting from the upper portion of the edge 24 in the folded form of the extender. The lower portions of the edges 24 are connected along fold lines 35, which are aligned with the fold lines 33, to a lower bracket arm 36. The bracket flaps 34 and the bracket arms 36 are in spaced relation and the extremities of the arms 36 which are most remote from the end walls 21 include widened portions 37. The upper edges 39 of these widened portions 37 are slightly below the level of the lower edges 40 of the bracket flaps 34 to permit the shelf B to be inserted between the bracket flaps and the bracket arms.

The rear extremities of the bracket arms 36 are connected along transverse fold lines 41 to reinforcing

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bracket arms 42. The upper surfaces of the reinforcing bracket arms 42 follow the shape and contour of the bracket arms 36 when folded in face contact therewith. The reinforcing bracket arms 42 include anchoring extremities 43 which are substantially the full height of the rear portions of the end walls 21 and are sandwiched between the end walls 21 and end wall liner panels 26 when the structure is folded. The anchoring portions 43 include auxiliary bracket flaps 44 which are designed to lie in face contact with bracket flaps 34 and to act as a reinforcement therefor. Thus both the bracket arms and bracket flaps are of double thickness.

The rear wall panel 14 is connected along a double score line 46 to a rear wall liner panel 47. This liner panel 47 is provided with short projecting locking tongues 49 thereupon and the bottom panel 10 is provided with elongated slots 50 into which the locking tongues 49 may engage when the liner panel 47 is folded into contiguous parallel relation to the rear wall 14.

In the assembly of the shelf extender A, the front wall panel 13 is folded up into right angular relation to the bottom panel 10 along the fold line 11, and the corner flaps 15 are folded at right angles to the front panel to extend along the fold line 22. FIGURE 3 of the drawings show the parts in this relation. The trapezoidal end wall panels 21 are next folded upwardly outwardly of the corner flaps 15, and the end wall liner panels 26 are then folded along the double fold lines 25 until the locking tongues 29 engage in the slots 30. The liner panels 26 thus hold the front wall in right angular relation to the end walls 21 and to the bottom panel 10. Due to the trapezoidal shape of the end walls and liner panels there is a tendency for the forward corners of the liner panels 26 to engage the front wall 13 and bend as they are folded into parallel relation to the end wall panels 21. Diagonal fold lines 54 may extend across the lower front corners of the end wall liner panels 26 to permit such temporary flexing without injuring the paperboard.

The corner flaps 31 are next folded inwardly into a common plane, and the rear wall panel 14 is folded up against the corner flaps 31, the edge 32 extending along the double fold line 46 connecting the rear wall 14 to the rear wall liner panel 47. This brings the structure into the position illustrated in FIGURE 4. The liner panel 47 is then swung inwardly and downwardly until the locking tongues 49 engage in the slots 50. The corner flaps 31 are enclosed between the panels 14 and 47 to hold the rear of the tray assembled. This completes the formation of the tray.

With the tray portion of the structure assembled, it would not be possible to assemble the bracket arms in place without bending one or the other of the arms except for the provision of a pair of score lines 52 parallel to the fold lines 41 which connect the reinforcing bracket arms 42 to the bracket arms 36. In folding the arms the reinforcing bracket arms 42 are folded along the fold line 52 as indicated in FIGURE 5 of the drawings. From the position shown in FIGURE 5, the rectangular areas 53 which are between the fold lines 41 and 52 are swung inwardly in the manner illustrated in FIGURE 6, the anchoring portion 43 entering the space between the outer end wall panel 21 and the adjoining end wall liner panel 26. During this operation, the bracket arms are flexed to some extent but not to the extent necessary to injure the structure of the paperboard. As the areas 53 swing toward coplanar relation with the remainder of the reinforcing bracket 42, the flexing of the arms decreases until finally the reinforcing bracket arms 42 are again in face contact with the bracket flaps 34. When in place, the bracket structure appears as best illustrated in FIGURE 2 of the drawings.

In order to function in the manner described, it is necessary that the areas 53 between the fold lines 41 and 52 be of the width no greater than $\frac{1}{2}$ the extent to which the anchoring portions 43 are inserted. This permits the

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bracket arms to be folded in the manner shown in FIGURES 5 and 6 of the drawings.

In usual practice, the tray portion of the shelf extender is usually set up in the manner described, and the bracket arm assemblies and the bracket flaps are folded to overlie the rear panel 14. The tray may be filled with the product and shipped in a container which is but slightly larger than the tray itself. As a result, the grocer does not have to go to the bother of setting up the tray in order to use it, it being only necessary for him to remove the tray from the outer container and fold the bracket arms to extend at right angles to the rear panel in the manner which has been described. It should be noted that while the bracket arms are hinged to the rear edges of the end wall panels, they are reinforced by the anchoring ends of the reinforcing bracket arms which are not similarly folded. It should also be noted, that the fold lines 52 do not materially weaken the arm structure as the corresponding area of the bracket arms are not folded at this point.

In accordance with the patent statutes, I have described the principles of construction and operation of my shelf extender, and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A shelf extender including a generally rectangular tray of paperboard, the tray including a bottom panel, front, rear and end walls extending upwardly therefrom, means connecting said front, rear and end walls together, bracket flaps integral with edges of said end walls and extending rearwardly beyond said end walls and adapted to engage over a shelf, the bracket flaps being short relative to the height of the end walls, bracket arms integral with said edges of said end walls and extending rearwardly from said end walls spaced below said bracket flaps and adapted to engage beneath a shelf over which said end flaps extend.

2. The structure of claim 1 and in which said bracket arms comprise a pair of arm members foldably connected and extending in face contact.

3. A shelf extender including a sheet of paperboard cut and creased to provide a rectangular bottom panel, front and rear panels connected to opposite edges of said bottom panel, and end wall panels hinged to opposite ends of said bottom panel, means connecting said front and rear panels to said end wall panels to provide a rectangular tray, end wall liner panels hinged to the upper edges of said end wall panels and folded into parallel relation inwardly of said end wall panels, a bracket flap connected to each of said end wall panels along the upper edge thereof and extending rearwardly from said rear panel adapted to overlie a shelf, a bracket arm spaced below each bracket flap on each end wall panel and extending rearwardly from said rear panel adapted to underlie a shelf, and reinforcing bracket arms hinged to the rear extremities of said bracket arms and folded in face contact therewith, the ends of said reinforcing bracket arms extending between said end wall panels and said end wall liner panels.

4. The structure of claim 3 and in which said reinforcing bracket arms include anchoring ends which extend substantially the full height of said end walls and including auxiliary bracket flaps which project rearwardly in face contact with said bracket flaps on said end wall panels, the portions of said reinforcing bracket arms which project rearwardly from said rear panel being substantially contiguous with said bracket arms and bracket flaps.

5. The structure of claim 3 and in which said means connecting said front panel to said end wall panels includes corner flaps hinged to said front panel and sandwiched between said end wall panels and said end wall liner panels.

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6. The structure of claim 3 and in which said means connecting said rear panel and said end wall panels includes corner flaps hinged to the end wall liner panels and extending inwardly of said rear panel, and a rear wall liner panel hinged to the upper edge of said rear wall panel and folded downwardly to enclose said corner flaps.

7. The structure of claim 3 and including a fold line extending across said reinforcing bracket arms parallel to the lines of fold connecting said bracket arms to said reinforcing bracket arms, said fold line being spaced from the folded end of said reinforcing bracket arms a distance equal to no more than one half the length of the portion of the reinforcing bracket arms engaged between said end wall panels and said end wall liner panels.

8. A shelf extender including a sheet of paperboard cut and creased to provide a rectangular bottom panel, a front panel and a rear panel hinged to opposite edges of said bottom panel, said rear panel being higher than said front panel, a rear panel liner panel hinged to the upper edge of the rear panel, respectively trapezoidal end wall panels hinged to the remaining opposed edges of said bottom panel shaped to incline from the top of said front panel to the top of the rear panel when the wall panels are rectangularly arranged, trapezoidal end wall liner panels hinged to the upper edges of said end wall panels and foldable to line the walls to which they are attached, corner flaps hinged to the end edges of the front panel and sandwiched between the end wall panels and the end wall liner panels, corner flaps secured to the end wall liner panels and folded between said rear panel and said rear wall liner panel, bracket flaps on said end wall panels adjoining the upper end thereof projecting rearwardly beyond said rear panel and adapted to overlie a shelf, bracket arms attached to the end wall panels adjoining the lower edges thereof and extending rearwardly beyond

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said rear panel spaced below said bracket flaps and adapted to engage the under side of a shelf over which said bracket flaps engage, reinforcing bracket arms hinged to the rear ends of said bracket arms and folded into face contact therewith, anchoring ends on said reinforcing bracket arms sandwiched between said end wall panels and said end wall liner panels, said anchoring ends extending substantially the full height of said end wall panels and including auxiliary bracket flaps projecting rearwardly from said rear panel in contiguous relation to said first named bracket flaps.

9. A shelf extender including a generally rectangular tray of paperboard, the tray including a bottom panel, front, rear and end walls extending upwardly therefrom, means connecting said front, rear and end walls together, bracket flaps attached to said end walls and extending rearwardly from said end walls and adapted to engage over a shelf, the bracket flaps being short relative to the height of the end walls, bracket arms secured to said end walls and extending rearwardly from said end walls spaced below said bracket flaps and adapted to engage beneath a shelf over which said end flaps extend, said bracket arms comprising a pair of arm members foldably connected at their extremities and folded in face contact.

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CLAUDE A. LE ROY, *Primary Examiner.*