May 20, 1947. I. DORFMAN 2,420,773

DISPLAY BOX WITH ADJUSTABLE BOTTOM

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Fig. 1

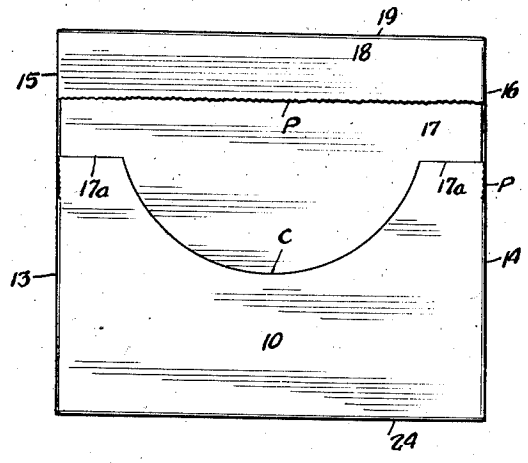


Fig. 2

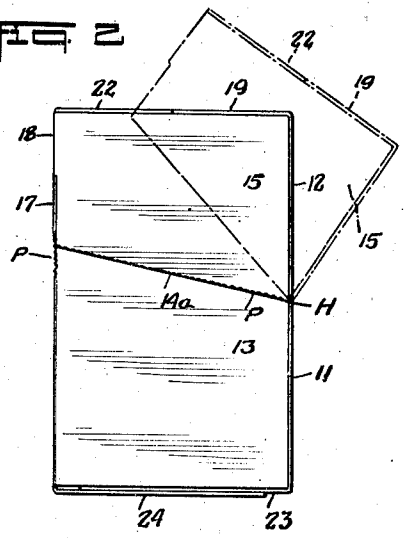


Fig. 3

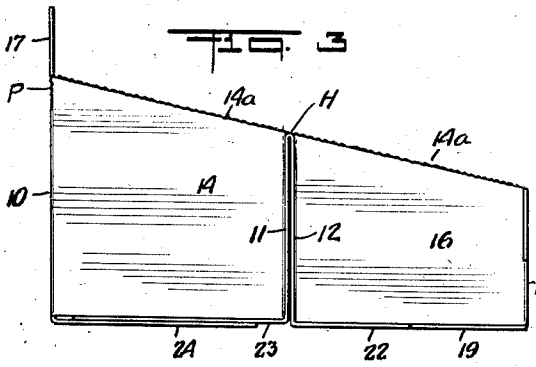


Fig. 4

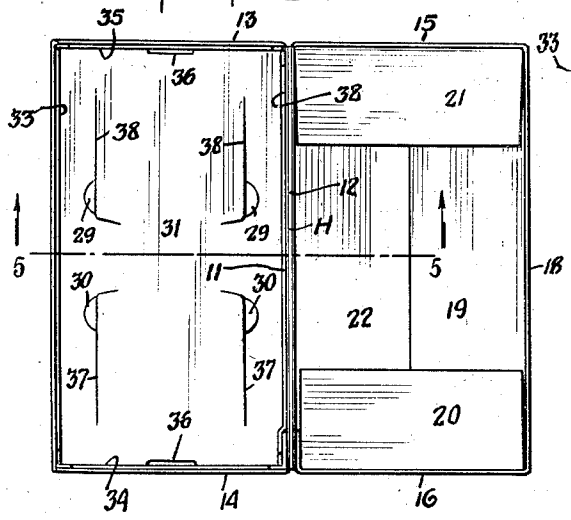
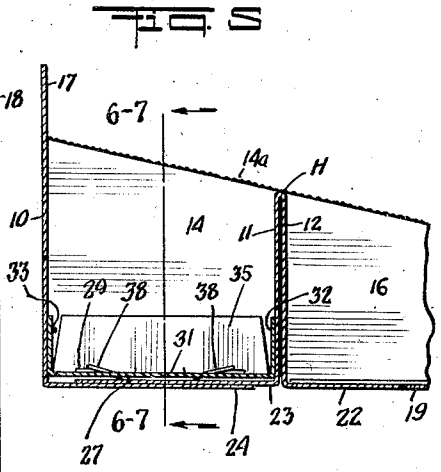


Fig. 5



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FIG. 6

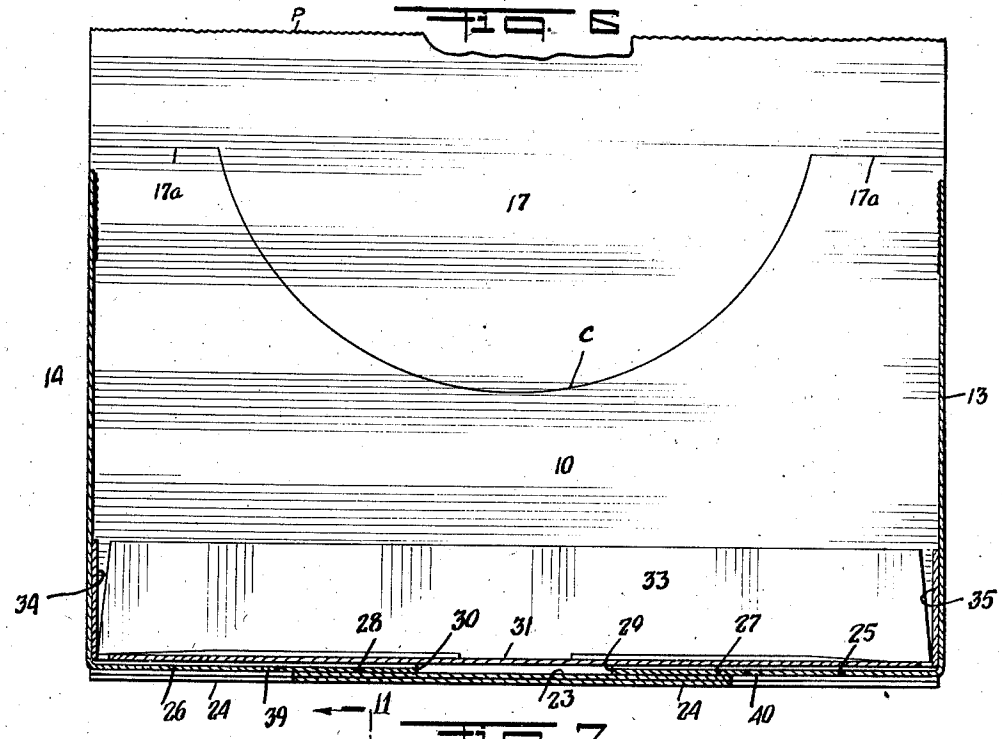
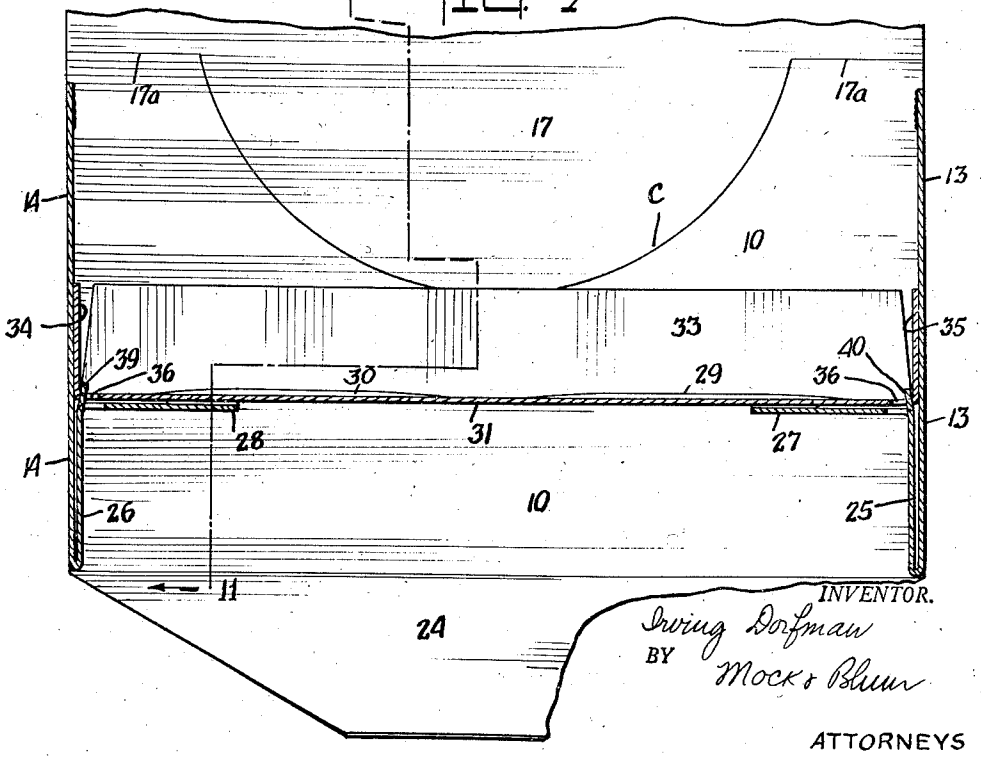


FIG. 7



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Fig. 8

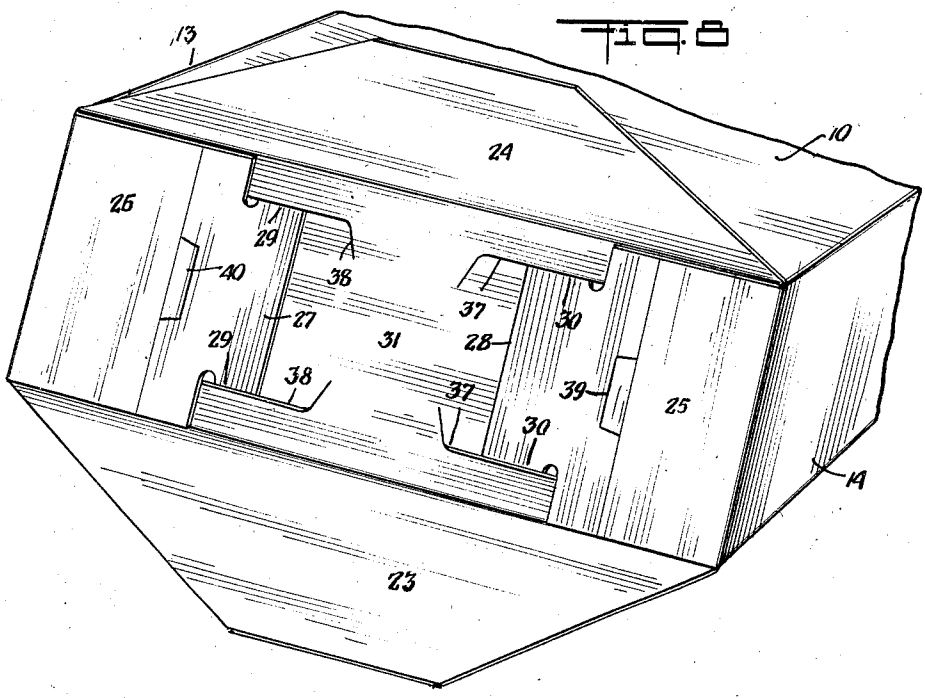
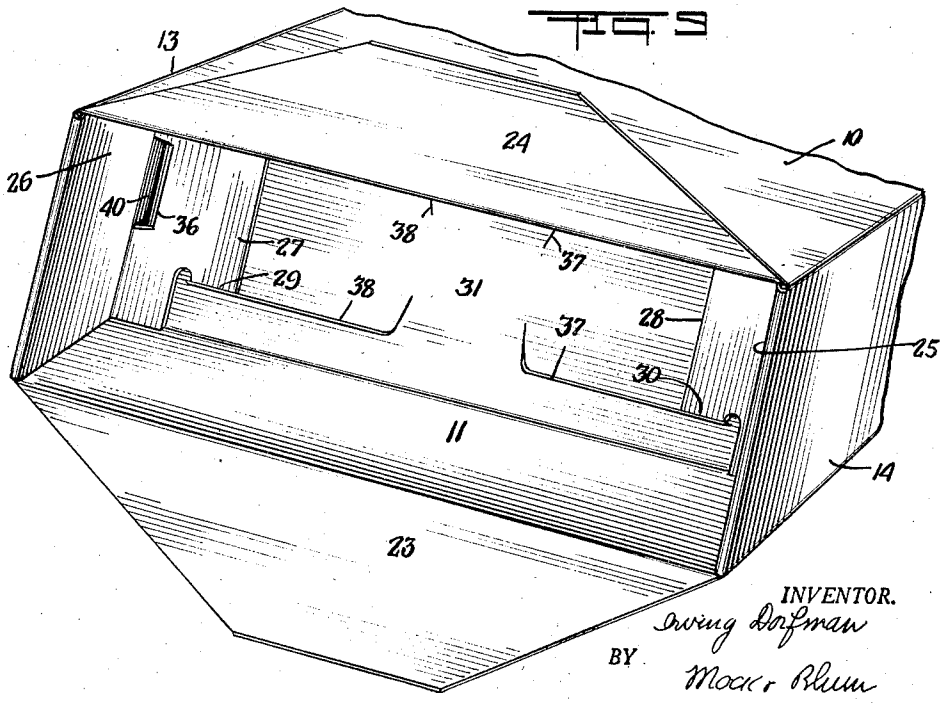


Fig. 9



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FIG. 10

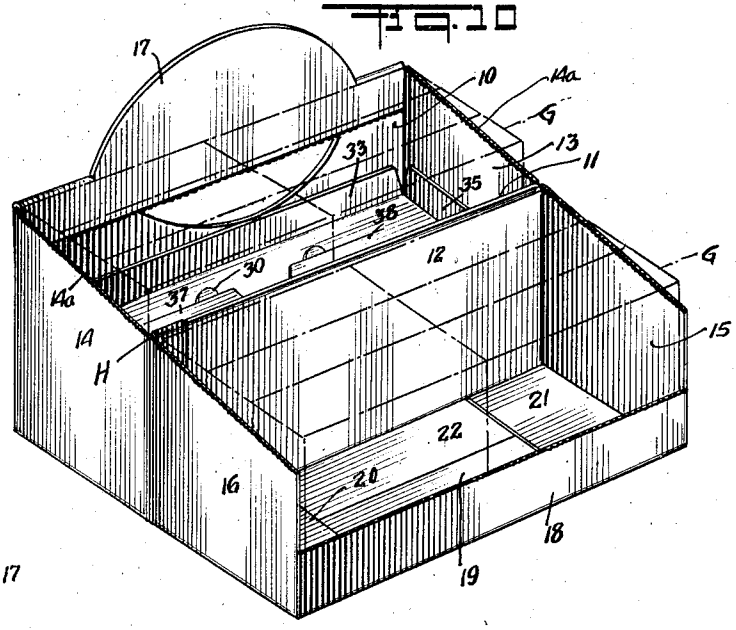
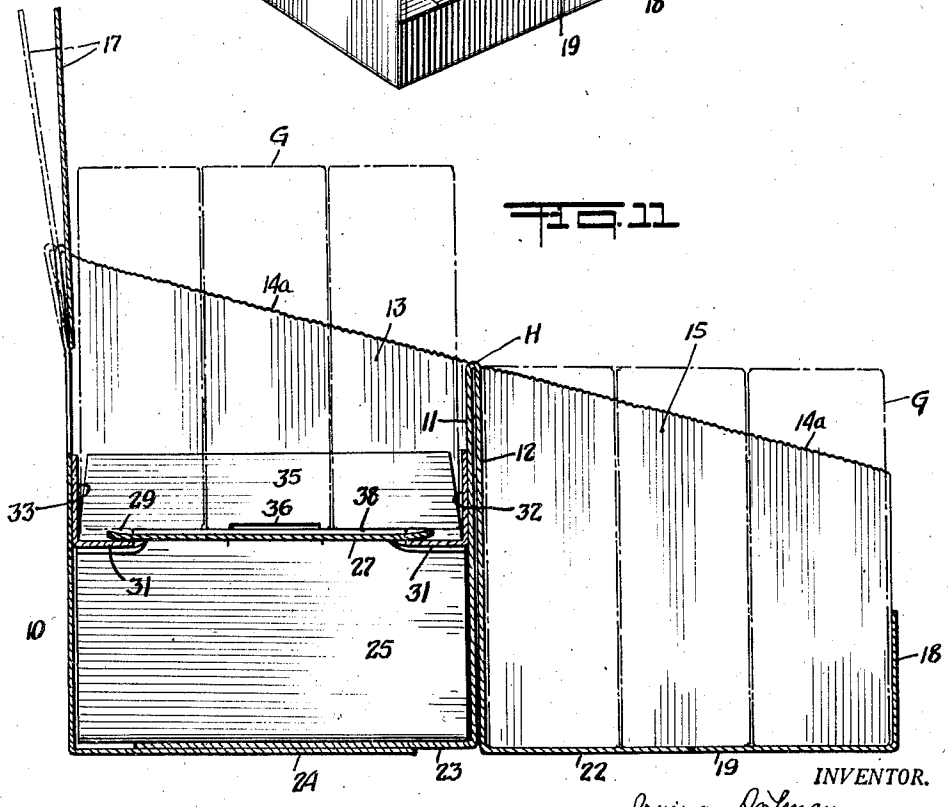


FIG. 11



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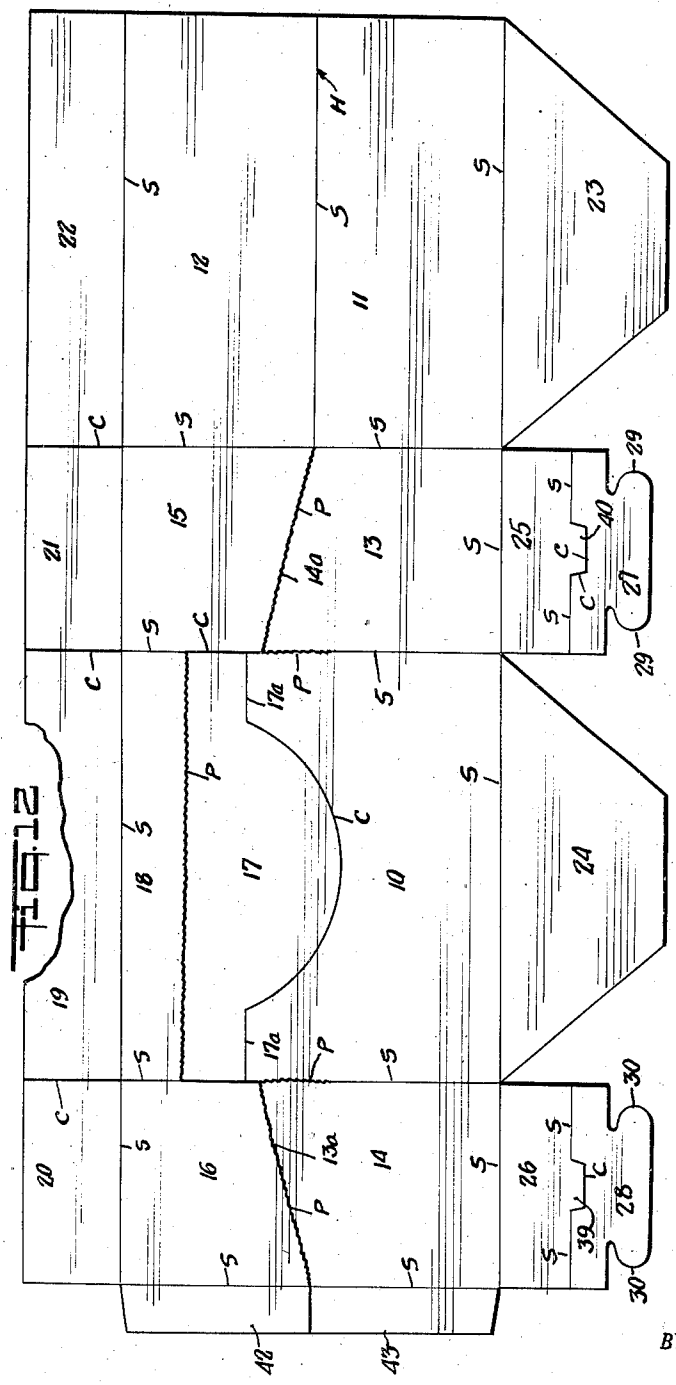


FIG. 12

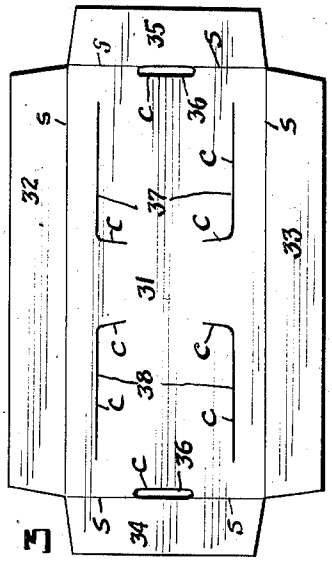


FIG. 13

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Patented May 20, 1947

2,420,773

UNITED STATES PATENT OFFICE

2,420,773

DISPLAY BOX WITH ADJUSTABLE BOTTOM

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Application November 28, 1944, Serial No. 565,451

2 Claims. (Cl. 206—44)

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My invention relates to a new and improved display box or carton.

One of the objects of my invention is to provide a combined display box and shipping container. The display box or carton can be loaded with a suitable number of packages or articles of merchandise, and said box or carton, in sealed form, can be shipped to the wholesaler or retailer. The improved box or carton can then be readily opened by severing a wall of said box or carton along a weakened line thereof. The box or carton can then be opened to display position. In such display position, the box or carton consists of a front compartment and a rear compartment. The respective bottom walls of the front compartment and the rear compartment are then in the same horizontal plane. The bottom wall of the rear compartment can then be pushed upwardly, until it is located and held in a top display position. The packages or articles which are located in the rear compartment are thus maintained elevated, with respect to the packages or articles in the front compartment.

In order thus to elevate the bottom wall of the rear compartment to final display position, it is not necessary to break the factory seal of the improved box or carton.

Another object of the invention is to provide a carton or box of this type which can be conveniently made from two respective blanks, namely a body-blank and a bottom-wall blank, so that the improved device can be produced at minimum cost.

Numerous additional and important objects of my invention will be described in the annexed description and drawings which illustrate a preferred embodiment thereof, it being understood that the above statement does not limit the invention.

Fig. 1 is a rear elevation of the improved box or carton in the sealed and closed form in which it is shipped from the factory.

Fig. 2 is a side elevation of Fig. 1. The broken lines in Fig. 2 illustrate the position of the front compartment, after it has been turned partially relative to the rear compartment.

Fig. 3 is a side elevation of Fig. 1, showing how the front compartment has been moved to its final open and display position, relative to the rear compartment. In the position illustrated in Fig. 3, the respective bottom walls of the front compartment and of the rear compartment are in the same horizontal plane.

Fig. 4 is a top plan view of Fig. 3.

Fig. 5 is a sectional view on the line 5—5 of Fig. 4.

Fig. 6 is a sectional view on the line 6—7 of Fig. 5, showing the bottom wall of the rear compartment in its original bottom position, which is also shown in Figs. 1–5 inclusive.

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Fig. 7 is similar to Fig. 6, showing the bottom wall of the rear compartment, moved upwardly to its final top and display position.

Fig. 8 is a perspective view which shows the movable bottom-wall of the rear compartment. In this view, the two outer covering flaps which normally cover the major part of the bottom-wall of the rear compartment, are shown as being bent out of covering position, in order clearly to illustrate the parts of said bottom-wall of the rear compartment. Fig. 8 shows the parts of said bottom wall of the rear compartment, when said bottom wall is in its original bottom position.

Fig. 9 is a perspective view, similar to Fig. 8, showing the movable bottom-wall of the rear compartment elevated to and held in final display position.

Fig. 10 is a perspective view of the carton in final display position. The packages or articles G which are to be displayed, are shown in broken lines.

Fig. 11 is a transverse section of Fig. 10.

Fig. 12 is a plan view of the main or body blank of the carton.

Fig. 13 is a plan view of the supplemental or bottom-wall blank, which is used for making the movable bottom wall of the rear compartment.

The body-blank which is shown in Fig. 12, comprises four rectangular main sections, namely, the sections 14—16, 10—17—18, 13—15, and 11—12. These sections are located between two horizontal lines in Fig. 12. The drawings are to scale, and reference is made thereto for further details.

The reference letters S in Figs. 12 and 13 designate fold-lines, at which the blank is indented in the usual manner. The reference letters C in Figs. 12 and 13 designate cut-lines, at which the respective blank is cut through-and-through. The reference letters P in Fig. 12 indicate lines of perforations, at which the material of the blank is weakened, so that said material can be ruptured along the lines P by using moderate force.

When the device is in the position shown in Fig. 3, it comprises a front compartment and a rear compartment.

The front compartment of the open and assembled device has a front wall 18, respective end-walls 15 and 16, and a bottom wall which comprises outer flaps 19 and 22, and inner flaps 20 and 21. The inner flaps 20 and 21 are secured adhesively or by any other means, to the inner faces of the outer flaps 19 and 22, in the assembled device. Outer flap 19 is integral with front wall 18. Outer flap 22 is integral with rear wall 12. Inner flap 20 is integral with end-wall 16. Inner flap 21 is integral with end-wall 15. Flap 42, which is integral with end-wall 16, is secured by adhesive or other means, to the inner face of rear wall 12, in the assembled device. Flap 43,

which is integral with end-wall 14 of the rear compartment, is secured to the inner face of the front wall 11 of the rear compartment, in the assembled device.

The rear compartment comprises said front wall 11, a rear wall 10, and respective end-walls 13 and 14. Walls 11 and 12 are hinged to each other along a fold-line H.

Inner bottom flap 23 of the rear compartment is integral with said front wall 11. Outer bottom flap 24 of the rear compartment is integral with said rear wall 10. After the device has been filled, and after the movable bottom wall of the rear compartment has been assembled with the end-walls 13 and 14 of said rear compartment, said bottom flaps 23 and 24 are fixed to each other by a factory seal or by any other means.

Display card 17 is integral with said rear wall 10, along two fold-lines 17*a*. Between said fold-lines 17*a*, display card 17 is separated from rear wall 10, by an arcuate through-and-through cut-line C.

End-walls 14 and 13 are integral with respective holding flaps 26 and 25, which are bendable relative to their respective end-walls, to vertical positions in which said flaps 26 and 25 abut or substantially abut the inner faces of their respective end-walls 14 and 13. Said holding flaps 26 and 25 have respective tongues 39 and 40.

Holding flaps 26 and 25 have respective heads 28 and 27, which are bendable relative to their respective holding flaps, to the horizontal or right-angle positions shown in Fig. 7.

Head 28 has lugs 30 and head 27 has lugs 29.

The bottom wall 31 of the rear compartment has longitudinal flaps 32 and 33, and end flaps 34 and 35. Said bottom wall has respective slots 38 and 37. Each said slot 38 and 37 has a straight longitudinal branch and a lateral branch.

Said longitudinal branches are arranged as shown in Fig. 13, so that each straight longitudinal branch of each slot 38 is alined with a straight longitudinal branch of a respective slot 37.

Said bottom wall 31 has additional slots or cut-outs 36.

In order to assemble the two blanks to form the sealed and filled shipping container which is shown in Fig. 1, the parts of the body-blank are bent relative to each other, so that sections 10—17—18 and 11—12 are parallel to each other, and perpendicular to sections 13—15 and 14—16.

Outer flaps 19 and 22 are then turned until their outer faces are in the same parallel plane. Inner flaps 20 and 21 are bent parallel to outer flaps 19 and 22, and inner flaps 20 and 21 are fixed to both flaps 19 and 22.

Lugs 30 are then slidably engaged with the straight longitudinal branches of slots 37. Lugs 29 are similarly engaged with the straight longitudinal branches of slots 38. Tapered flaps 23 and 24 are turned until they are parallel to each other, with flap 24 overlying flap 23. Said flaps 23 and 24 are fixed to each other by a factory seal, so that the separation of said flaps 23 and 24 can be readily detected.

Flap 42 of end-wall 16 is fixed by adhesive or other means to the inner face of wall 12, and flap 43 of end-wall 14 is fixed by adhesive or other means to the inner face of wall 11. The invention is not limited to this sequence of steps in assembling the parts of the improved device. Prior to completing the assembled device shown in Figs. 1 and 2, said device is filled with two tiers of packages or articles G.

The height of each article or package G is equal to the common height of walls 11 and 12, namely, half the height of the sealed carton. While the drawings are to scale in each figure, said scale is not the same in each figure.

By exerting moderate pressure, the retailer or other user who receives the sealed device, can rupture the section 13—15 along the inclined line 14*a*, also rupture the section 14—16 along the corresponding line 13*a*, and also rupture the section 10—17—18 along the respective line of perforations P.

The front compartment is turned to the position shown in Fig. 3 along the line H. At this time, the movable bottom wall 31 of the rear compartment is in its bottom position, in which it is in the same plane as the bottom wall 19—22 of the front compartment. The packages or articles G then have their tops in the same plane.

The part of rear wall 10 which is adjacent the tops of the rear edges of end-walls 14 and 13, is bent back by rupturing the device along the two respective short vertical lines of perforations P which are shown in Fig. 3.

This makes it possible, rearwardly to bend said upper part of the rear wall 10. The display card 17 is turned along the alined fold-lines 17*a*, until its bottom part, which is below said fold-lines 17*a*, is located rearwardly of the packages or articles G of the rear compartment.

The bottom wall 31 of the rear compartment is now pushed upwardly. The tapered shapes of the flaps 23 and 24 enable this to be done, without separating said flaps 23 and 24 from each other, so that it is not necessary to rupture the factory seal.

As the bottom wall 31 is pushed upwardly, the holding flaps 25 and 26 are turned upwardly towards the inner faces of their respective end-walls 13 and 14. The lugs 29 and 30 initially slide in the respective longitudinal branches of the slots 38 and 37. As the lugs 30 and 29 respectively enter the lateral branches of slots 37 and 38, the heads 28 and 27 are bent horizontally.

When the bottom wall 31 is in its top display position, heads 28 and 27 are held horizontally and parallel to each other, and perpendicular to holding flaps 26 and 25. Flaps 26 and 25 then abut or substantially abut the inner faces of end-walls 13 and 14. The respective tongues 39 and 40 of the heads 26 and 25 then enter the respective slots or cut-outs 36 of the bottom wall 31. The bottom wall 31 is thus held securely in its top display position. The flaps 32, 33, 34 and 35 of the bottom wall 31 make snug sliding contact with the respective upstanding walls of the rear compartment.

The rear packages or articles G are thus held elevated above the front packages or articles G. Any suitable matter is printed upon the display card 17 or upon any other part of the device.

The device can be made of cardboard or any other material.

In order to lock the bottom wall 31 in its top position, said bottom wall 31 is pushed downwardly, after the tongues 39 and 40 have been moved to vertical position, thus inserting said tongues into the slots or cut-out 36, as shown in Fig. 7.

I have shown a complete and preferred embodiment of my invention, but numerous changes and omissions and additions can be made without departing from its scope, and said scope includes the sub-combinations described herein, and it includes the movable bottom wall 31 and its as-

sociated parts, irrespective of the other parts of the device.

The lines P are designated as rupture lines. It is noted that the bottom ends of rupture lines *13a* and *14a* are equally spaced from the top and bottom edges of the sections.

For convenience, the flaps **24** and **23** are designated as partial bottom members, because they do not close the bottom of the rear box or compartment which has the end-walls **13** and **14**. The member **31** is designated as a false bottom. The flap **26—28** is a supporting flap which has an inner end-portion **26** and an outer end-portion **28**.

I claim:

1. A box which has front and rear upstanding walls which are parallel to each other, said box also having upstanding end-walls which are parallel to each other and which are perpendicular to said front and rear walls, said box also having partial bottom members which are fixed to each other to form a partial bottom wall which has edges which are spaced from the bottom edges of said upstanding walls, a false bottom which is slidably located between said upstanding walls and above said partial bottom members, said false bottom having four angular slits therein, each said slit having a longitudinal leg which is parallel to said front and rear walls and a lateral leg which is substantially perpendicular to said front and rear walls, said lateral legs being located at the inner ends of said slits, supporting flaps which have respective inner end-portions and outer end-portions, said inner end-portions being bendably joined to the bottom edges of said end-walls, said inner and outer end-portions being bendable relative to each other along respective fold-lines which are parallel to said

end-walls, said outer end-portions having respective lugs which are slidably located in said longitudinal legs and which overlie said false bottom when said false bottom is in its bottom position, said lugs sliding in said longitudinal legs away from lateral legs when said false bottom is raised to a top position in which said inner end-portions are substantially upstanding, said outer end-portions being substantially horizontal when said inner end-portions are substantially upstanding, said outer end-portions underlying said false bottom when said outer end-portions are substantially horizontal save that their lugs then overlie said false bottom.

2. A box according to claim 1, in which said false bottom has slots adjacent said end walls, and said flaps are cut to provide tongues at the tops of said inner end-portions, said tongues being upstanding and entering said slots when said false bottom is in its top position.

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