Nov. 15, 1955 G. V. MALMGREN 2,723,796

PARTITION TRAY

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Fig. 1

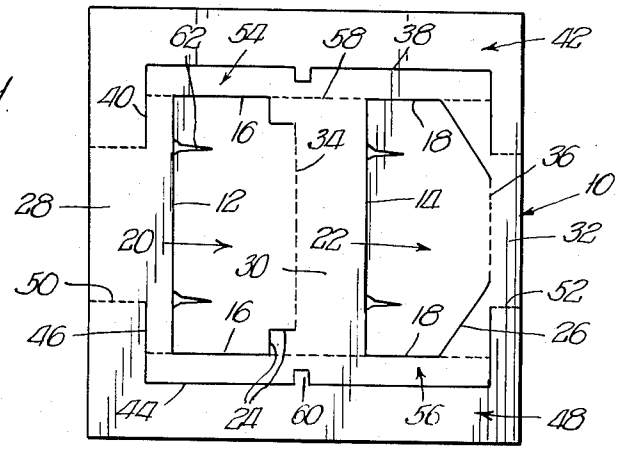



Fig. 2

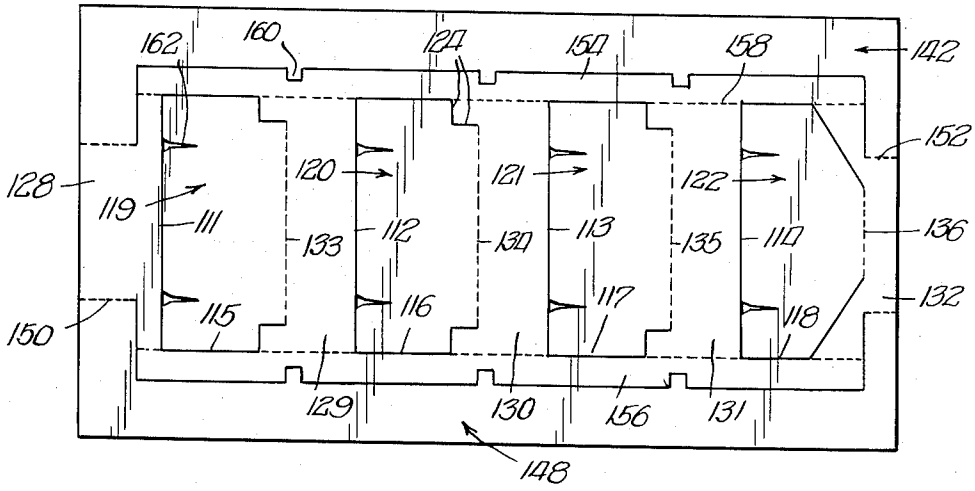



Fig. 3

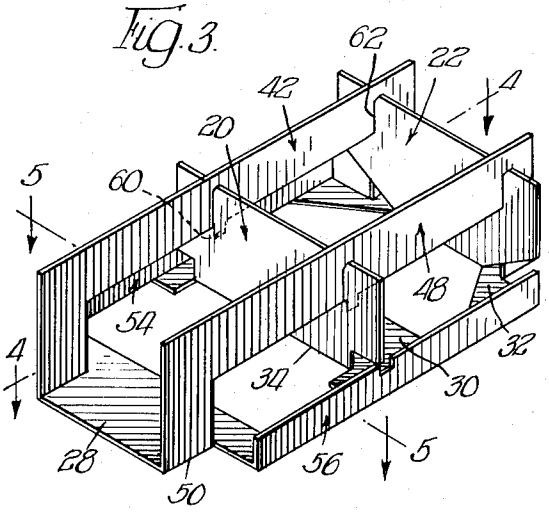
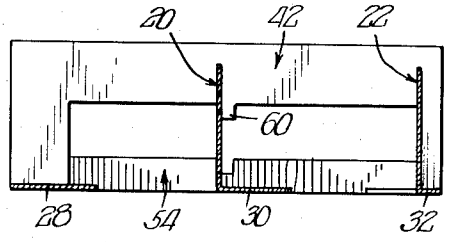



Fig. 4




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Fig. 5

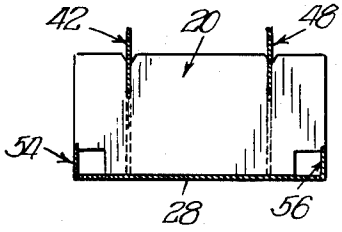
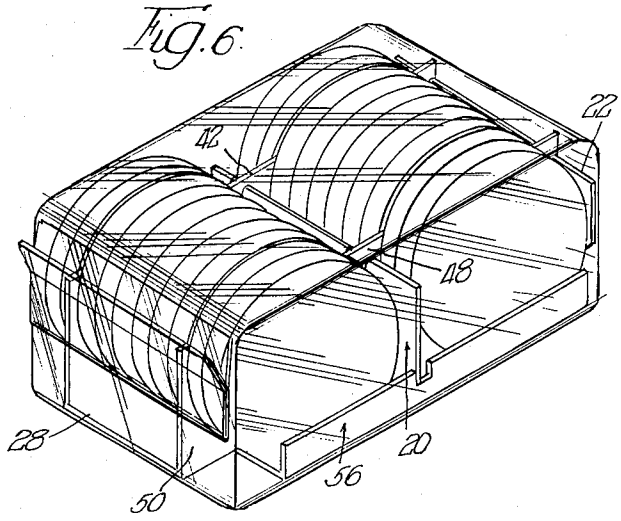



Fig. 6



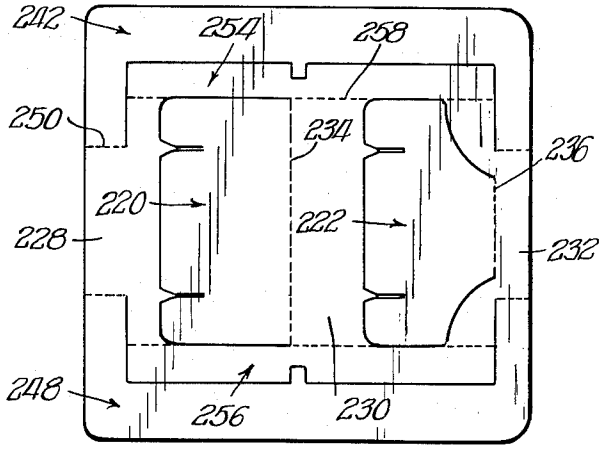




Fig. 7

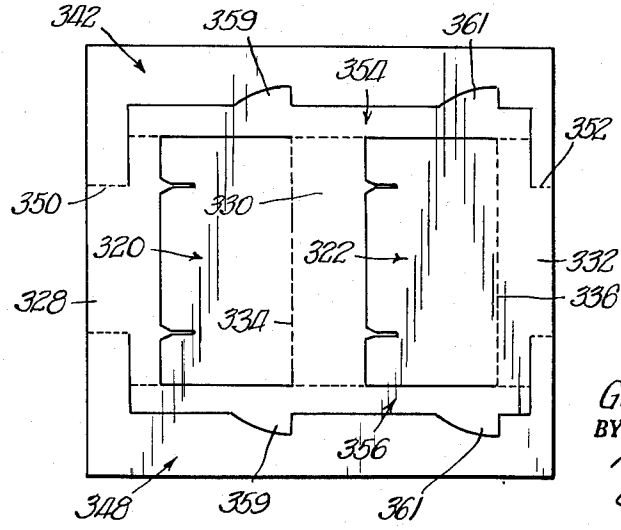



Fig. 8

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PARTITION TRAY

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Fig. 9

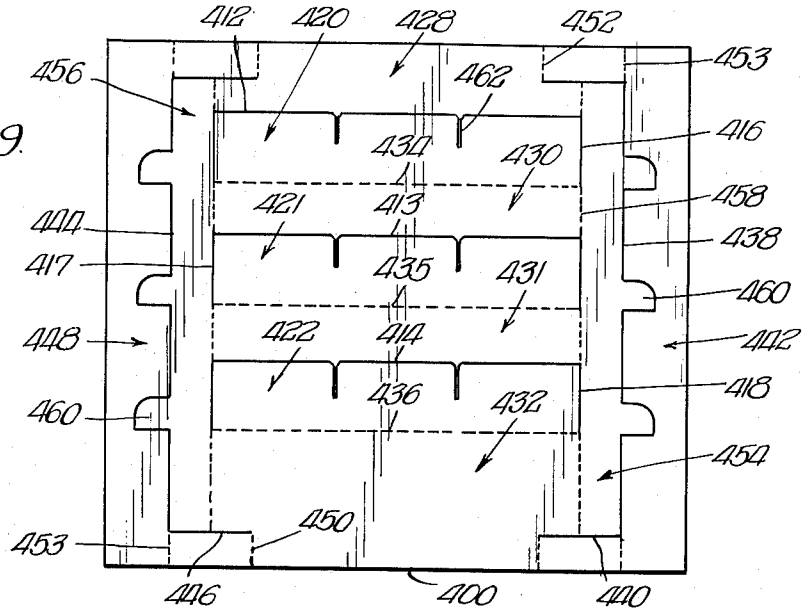
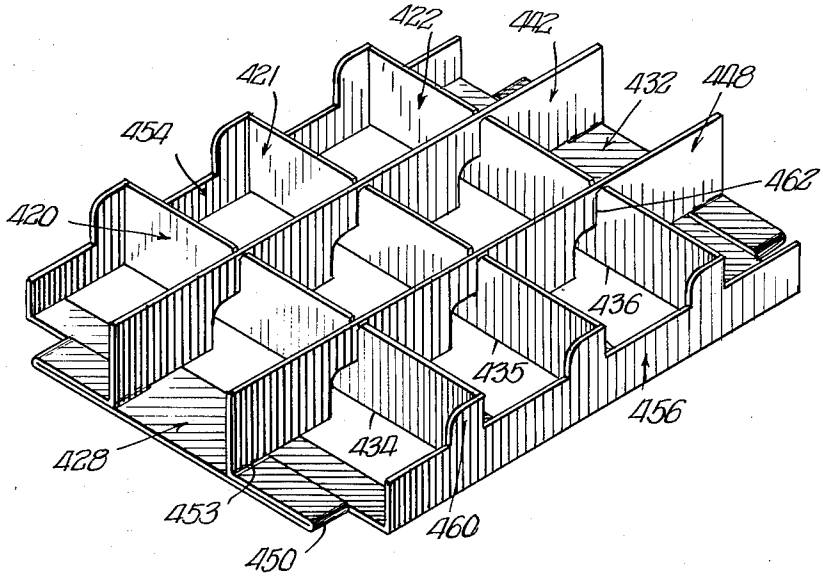



Fig. 10




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2,723,796

# PARTITION TRAY

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Application November 8, 1952, Serial No. 319,469

7 Claims. (Cl. 229—42)

The invention relates to partition trays for packaging and holding merchandise in an outer transparent wrapper and has reference in particular to a partition tray for packaging bakery products, such as cakes and cookies, and wherein the tray is of such design that it can be blanked out from a single sheet of material and then folded into completed shape.

The bakery products supported by the present tray are eventually sealed within a transparent cellophane bag which enhances the attractive appearance of the products for the best display of the same. The products are placed on the tray as the first step in the packaging operation and then the packed and loaded tray is inserted in the cellophane bag which is then sealed. The tray facilitates the packaging operation since the loading or packing of the tray is speeded up and in addition the loaded tray can be easily inserted in the cellophane bag. It accordingly follows that the primary object of the present invention is to provide an improved partition tray of simple design, a tray that can be blanked out from a single sheet of material and easily folded into shape, and a tray which will give adequate support to the cookies, cakes or other bakery products placed on the tray.

Another object of the invention is to provide a partition tray for packaging cookies and similar bakery products which will properly position the said products and retain them erect for the best display, which will protect the said products against breakage, and a tray which will embody improved design features producing a strong and rigid article when in folded, completed form.

A further object of the invention resides in a partition tray having bottom portions providing side panels and a transverse panel, and wherein said panels interengage when they are folded to complete the tray. In combination with the foregoing structure the present tray embodies side flaps which are formed from material having location between the bottom portions and the side panels when in blank form, and which are bent upwardly at right angles to the bottom portion in the formation of the completed tray.

Another object is to provide a tray for the purposes described wherein the bottom portions are provided with side flaps which materially improve the supporting function of the tray and which side flaps can be grasped by the operator during the packing of the tray and which also assist in the operation of inserting the loaded tray in the cellophane bag.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation as will be more fully described and particularly pointed out in the specification, drawings and claims appended hereto.

In the drawings which illustrate an embodiment of the invention, and wherein like reference characters are used to designate like parts—

Figure 1 is a plan view of a cut and scored blank embodying improved design features and which when folded into shape produces the tray of the invention;



Figure 2 is a plan view of a cut and scored blank illustrating the design of a modified form of tray coming within the invention;

Figure 3 is a perspective view of a tray in folded and completed form, the same embodying the features as shown in Figure 1;

Figure 4 is a longitudinal sectional view of a folded tray showing the structural details thereof, the section being taken on line 4—4 of Figure 3;

Figure 5 is a transverse sectional view taken on line 5—5 of Figure 3;

Figure 6 is a perspective view of a transparent cellophane bag containing cookies and which are retained in packed relation by the partition tray of the invention;

Figure 7 is a plan view of a scored blank showing another modification of the present partition tray;

Figure 8 is a plan view of a scored blank illustrating still another modification;

Figure 9 is a plan view of a cut and scored blank which when folded produces another modified form of tray; and

Figure 10 is a perspective view of the tray produced by the blank of Figure 9.

Referring to the drawings, particularly Figure 1, the sheet or blank **10** is substantially rectangular in shape and the same consists of foldable paper, cardboard or heavy craft paper which when formed into a partition tray will adequately protect the products supported thereby. The said blank is provided with a plurality of scored lines and cut lines to form panels or partitions when the same is folded into a tray and which partitions provide a plurality of compartments or divisions which hold the bakery products in the desired manner. In accordance with the invention the cut or scored lines are so related to each other as to form a plurality of transverse panels, side panels and side flaps, all of said elements having foldable connection to the portions of the blank which remain and which may be termed bottom portions since they constitute the base of the tray and provide supporting ledges for the bakery products.

The cut lines **12** and **14** extend transversely of the blank approximately centrally thereof and said lines are joined by the cut lines **16** and **18** extending along respective side edges to form the transverse panels **20** and **22**. With respect to panel **20**, the cut lines **24** complete the side edges of said panel and in a somewhat similar manner the diagonal lines **26** complete the side edges of panel **22**. The panels alternate with the bottom portions identified by numerals **28**, **30** and **32**. Each panel is foldably connected to the bottom portion by a scored line. For example, the transverse panel **20** is foldably connected to the bottom portion **20** by the scored line **34**, whereas transverse panel **22** is foldably connected to bottom portion **32** by the scored line **36**.

The side panels of the present tray are formed from material extending along respective side edges of the blank. The cut lines **38** and **40** form the side panel **42** and in a similar manner the cut lines **44** and **46** form the side panel **48**, each side panel being foldably connected to the front and rear bottom portions by means of scored lines. At the front end of the blank the scored lines **50** foldably connect the side panels to the front portion **28**, whereas at the rear the scored lines **52** foldably connect the side panels to the rear bottom portion **32**.

The blank of the invention is additionally cut and scored to provide side flaps such as **54** and **56**. Each side flap is formed from the material of the blank which lies between the side panels and the transverse panels. By means of the scored lines such as **58** the side flaps are foldably connected to the bottom portions **28**, **30** and **32**.

It will be observed that each side panel is provided with a tongue such as **60** which is formed from material of the adjacent side flap, the said tongues functioning as stops to limit the folding of the transverse panel **20** whereby when said panel engages the tongues it will be standing upright at right angles to bottom portion **30**. The transverse panel **22** is folded upright in a similar manner but instead of tongues being provided therefor the said panel is folded into contact with the rear legs of the side panels which function as stops, properly positioning said transverse panel.

Figure 3 is a perspective view of the folded and completed tray produced by the cut and scored blank of Figure 1. In folding the tray into the form as shown in Figure 3 the side panels **42** and **48** are first folded upwardly along the fold lines **50** and **52**. Since these fold lines are located inwardly of the side edges of the transverse panels, it will be understood that the side panels when thus folded overlie the transverse panels. The next operation is to fold said transverse panels into their upright position, whereupon panel **20** is folded along line **34** and panel **22** is folded along line **36**. Because of the interengaging connection which the transverse panels have with the side panels, the slits **62** are provided in the transverse panels, each slit having a widened V-shaped mouth or opening whereby to facilitate the reception of the side panels which fit into the slits, thus retaining the transverse panels in upright folded relation and which thus form the folded tray into the desired compartments.

Side flaps **54** and **56** are also folded upwardly so as to have a right angle relation with the bottom portions to which they are hingedly connected. The side flaps accordingly extend longitudinally on both sides of the completed tray, and the side flaps in addition to having a retaining function as regards the bakery products supported by the tray, are also available to be grasped by the operator in loading the tray and in inserting the loaded tray into the cellophane bag, as shown in Figure 6, which will now be described.

In said figure the partition tray, which is loaded with cookies, is shown located within a transparent cellophane bag which is sealed at its forward end. The tray has a number of desirable advantages in the dispensing of bakery products. When loaded or filled with cookies and encased in a transparent cellophane bag the package is reinforced by the tray which has considerable strength and rigidity for supporting the cookies, and which are positioned or held erect for their best display. Also added protection is provided by the tray, which materially lessens and to a certain extent may practically eliminate breakage of the cookies. Also the tray makes it easier to pack or load the cookies which can then be easily inserted by the operator into the bag, and additionally, the tray facilitates handling of the package thereafter by the customer or purchaser.

The partition blank as shown in Figure 2 is similar in all basic respects to the blank of Figure 1 with the exception that the blank provides four transverse panels instead of two. The transverse cut lines **111, 112, 113** and **114** in combination with the longitudinally cut lines **115, 116, 117** and **118** form the transverse panels **119, 120, 121** and **122**. The additional cut lines **124** for each panel complete the formation of the same and it will be observed that each transverse panel is foldably connected to a bottom portion by means of a scored line. As illustrated, panel **119** is foldably connected to bottom portion **129** by means of the scored line **133**; transverse panel **120** is foldably connected to bottom portion **130** by the scored line **134**; transverse panel **121** is foldably connected to base portion **131** by scored line **135**; and panel **122** is foldably connected to the base portion **132** by the scored line **136**.

The material along the side edges of the blank, as shown in Figure 2, forms the side flaps **154** and **156**, and the side panels **142** and **148**. The fold lines **150** and **152** foldably connect the side panels to the front and rear bottom portions, namely, **128** and **132**, and fold lines **158** foldably connect the side flaps to the bottom portions, and the tongues **160** provide stops for the transverse panels when the parts of the blank are folded to form the completed tray, all in a manner as described with respect to the blank of Figure 1.

In Figure 7 the blank is similar in all respects to the blank of Figure 1, with the exception that the top corners of the transverse panels are rounded, and with the further exception that the cut lines **226** instead of being diagonal are arcuate, being directed inwardly so as to increase the surface area of the rear bottom portion **232**.

The modification of Figure 8 is likewise similar in basic respects to the blanks of Figures 1 and 7, there being provided cut lines and scored lines to form a pair of transverse panels, side panels at the respective sides of the tray, and side flaps on respective sides of the bottom portions. In this modification the transverse panel **322** has a fold line **336** which extends for the full length of the panel. Also the tongues have a modified shape and it will be observed that the same are formed as projections on the side flaps to thus provide arcuately shaped recesses along the bottom edge of the side panels. The recesses accordingly provide stops for holding their respective transverse panels in erect position. The tongues **359** are disposed on respective side flaps and in alignment with the fold line **334**, and in a similar manner the tongues **361** form projections on the side flaps, the same being aligned with the fold line **336**. In all respects the modification of Figure 8 is the same as previously described, and when the parts of the blank are folded, a tray is formed providing the same partitions and compartments as provided by the tray of Figure 3.

In the partition tray of Figures 9 and 10 the transverse panels and the side panels provide substantially square compartments when in folded relation, each compartment being adapted to receive a bakery product and which is adequately supported by the bottom portion of the tray and protected against damage by the side and transverse panels and by the side flaps. The tray is shallow, having considerably less depth than the tray shown in Figure 3, the said shallow characteristics resulting from the double fold in the legs of the side panels.

Referring more particularly to the blank **400** of Figure 9, the cut lines **412, 413** and **414** are joined by cut lines **416, 417** to form the transverse panels **420, 421** and **422**, the panels alternating with the bottom portions **428, 430, 431** and **432**. The transverse panels are each foldably connected to a bottom portion by a scored line, namely, **434, 435** and **436**, respectively. The cut lines **438** and **440** form the side panel **442** and similar cut lines **444** and **446** form the side panel **448**. Each side panel is foldably connected to the front and rear bottom portions by fold lines **450** and **452**. Additional fold lines **453** provide for the double fold in the legs of the side panels and which reduces the height of the side panels when in folded relation with said bottom portions. The side flaps **454** and **456** are foldably connected to all four bottom portions by the scored lines **458**. Each side flap includes tongues **460** which are cut out of the material of the side panels. The resulting recesses in the side panels provide stops with which the transverse panels engage to position the transverse panels in upright relation at right angles to their bottom portions. It will also be observed that each transverse panel is slotted at **462** and the slots receive the side panels so that the panels interengage and this coaction of the parts maintains the tray in folded relation.

The invention is not to be limited to or by details of construction of the particular embodiment thereof illustrated by the drawings as various other forms of the device will of course be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

What is claimed is:

1. A partition tray blank comprising a substantially rectangular sheet of foldable paper, said sheet having a plurality of cut lines and scored lines therein and which are arranged with respect to each other to form a plurality of transverse panels, side panels having front and rear leg portions, and side flaps, the remainder of the sheet providing bottom portions located at the front edge and rear edge of the sheet and alternating with the transverse panels longitudinally of the sheet, the transverse panels each being foldably connected to a bottom portion along a transverse scored line, each side flap being foldably connected to all the bottom portions along scored lines longitudinally of the sheet and which comprise the end edges of the bottom portions, whereby the transverse panels are coextensive in length with the bottom portions, the front and rear leg portions of the side panels being foldably connected to the front and rear bottom portions respectively by scored lines extending longitudinally of the sheet, and a second scored line in each leg portion, permitting a double bend in the leg portions in the formation of the tray.

2. A partition tray blank as defined by claim 1, wherein the second scored line in each leg portion extends longitudinally of the sheet and comprises an extension of the top edge of its adjacent side flap, and additionally including a plurality of tongues integral with each side flap, said tongues being equal in number to the transverse panels and providing stops in the side panels with which the transverse panels engage when the panels are folded into an upright relation in the formation of the tray.

3. A partition tray blank comprising a substantially rectangular sheet of foldable paper, said sheet having a plurality of cut lines and scored lines therein and which are arranged with respect to each other to form a plurality of transverse panels, a pair of side panels having front and rear leg portions, and a pair of side flaps, the remainder of the sheet providing bottom portions located at the front edge and rear edge of the sheet and alternating with the transverse panels longitudinally of the sheet, the transverse panels each being foldably connected to a bottom portion along a transverse scored line, the side flaps and the side panels being formed from the material extending longitudinally along the side edges of the blank, and each side flap being foldably connected to all the bottom portions along scored lines longitudinally of the sheet, said longitudinal scored lines forming the end edges of the bottom portions, whereby the transverse panels are coextensive in length with the bottom portions, the front and rear leg portions of the side panels being foldably connected to the front and rear bottom portions respectively by scored lines extending longitudinally of the sheet, the last mentioned scored lines being disposed inwardly of the side flaps toward the longitudinal center of the blank so that the side panels overlie the transverse panels when the parts are bent into upstanding relation.

4. A blank for forming a partition tray, comprising a substantially rectangular sheet of foldable paper, said sheet having a plurality of cut and scored lines therein and which are arranged with respect to each other to form a plurality of transverse panels, side panels and side flaps, the portions of the sheet remaining and which alternate with the transverse panels constituting bottom portions of the tray when the same has been folded into completed form, the side flaps being foldably connected to all the bottom portions by certain longitudinal scored lines, a side panel extending the full length along each side edge of the blank and each side panel being foldably connected to certain of the bottom portions by other longitudinal scored lines, said other longitudinal scored lines having location adjacent the respective ends of the



side flaps, and the transverse panels each being foldably connected to a bottom portion respectively by transverse scored lines and which extend normal to the scored lines for the side flaps.

5. A blank for forming a partition tray, comprising a substantially rectangular sheet of foldable paper, said sheet having a plurality of cut lines and scored lines therein and which are arranged with respect to each other to form a plurality of transverse panels, side panels and side flaps, the portions of the sheet remaining and which alternate with the transverse panels constituting bottom portions of the tray when the same has been folded into completed form, the side flaps being foldably connected to all the bottom portions by certain longitudinal scored lines, a side panel extending the full length along each side edge of the blank and each side panel being foldably connected to the front and rear bottom portions at locations spaced with respect to the side flaps inwardly toward the longitudinal center of the blank, and the transverse panels each being foldably connected to a bottom portion respectively by transverse scored lines and which connect with and extend normal to the scored lines for the side flaps, whereby the transverse panels are equal in length to the length of the bottom portions.

6. A partition tray comprising a plurality of transverse panels, side panels and side flaps, all foldably connected to bottom portions which comprise the remainder of the tray, the said side flaps and side panels constituting material of the tray extending the length of respective side edges of the tray, the said transverse panels being foldably connected to certain bottom portions by transverse fold lines, the side flaps being foldably connected to all the bottom portions by longitudinal fold lines, the side panels being foldably connected to the front and rear bottom portions only by longitudinal fold lines and which fold lines have location adjacent respective ends of the side flaps, being disposed inwardly thereof toward the longitudinal center of the tray, the side and transverse panels being folded from a co-planar relation with their bottom portions to an upstanding right angular relation, whereby the side panels overlie and are adapted to have interconnecting relation with the transverse panels, and said side flaps also being folded into a right angular relation with the bottom portions whereby to form side flanges for the tray.

7. A partition tray comprising integrally connected transverse panels, side panels, side flaps and bottom portions, the said side flaps and side panels constituting material of the tray extending the length of respective side edges of the tray, the transverse panels having been folded into upstanding right angular relation with the bottom portions on fold lines extending transversely along the side edges of their bottom portions, the side panels being foldably connected to the front and rear bottom portions on longitudinal fold lines located inwardly of the ends of the transverse panels, whereby the side panels when folded into upstanding right angular relation overlie the transverse panels and are adapted to have interconnected relation therewith, and the side flaps being disposed on respective sides of the tray and being foldable into right angular relation with the bottom portions on fold lines defining the ends of the bottom portions.

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