June 2, 1942. R. GUYER ET AL 2,284,959

CARTON

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Fig. 1

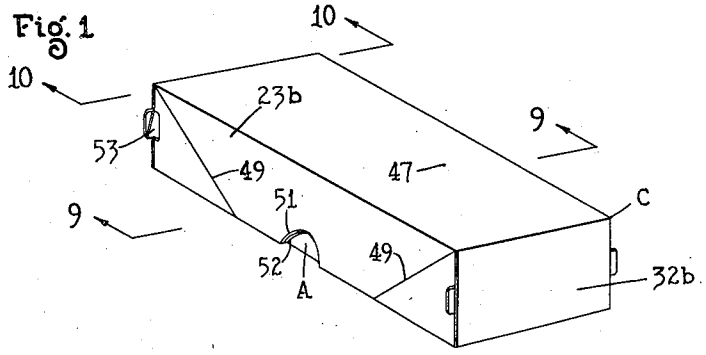


Fig. 2

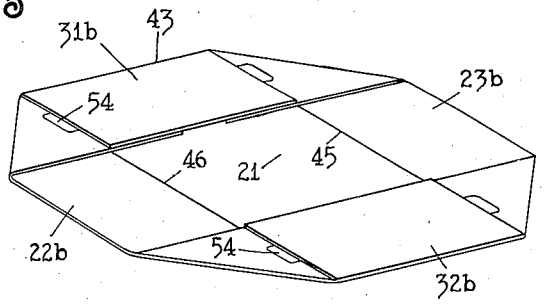
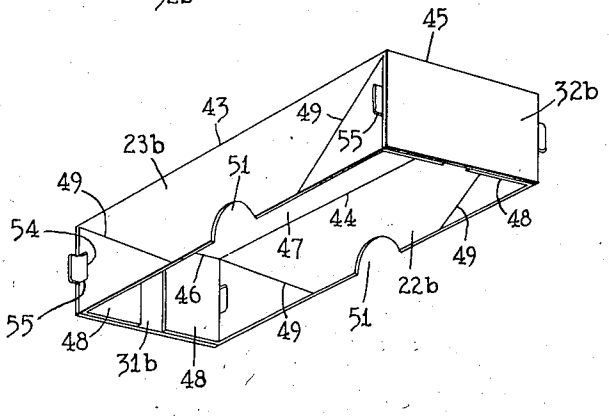


Fig. 3



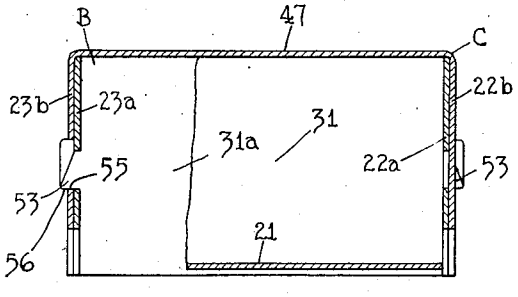


Fig. 10

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Fig. 4

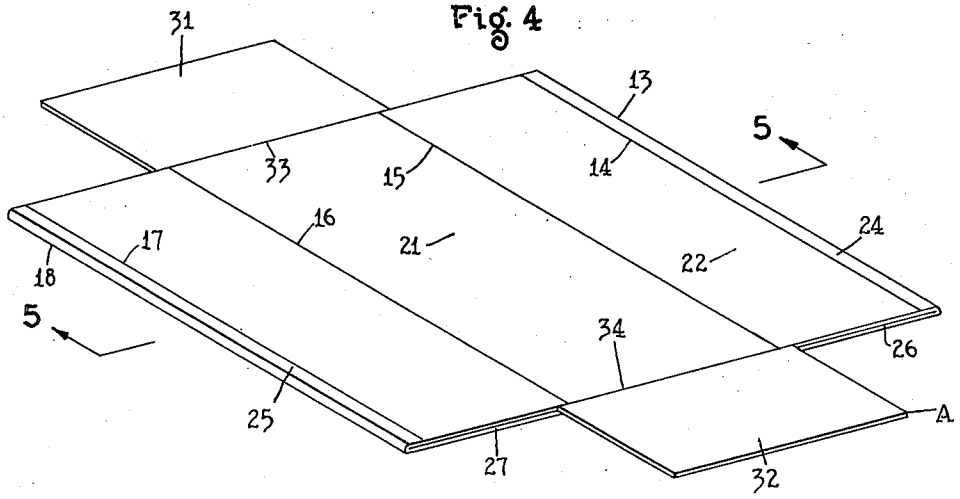
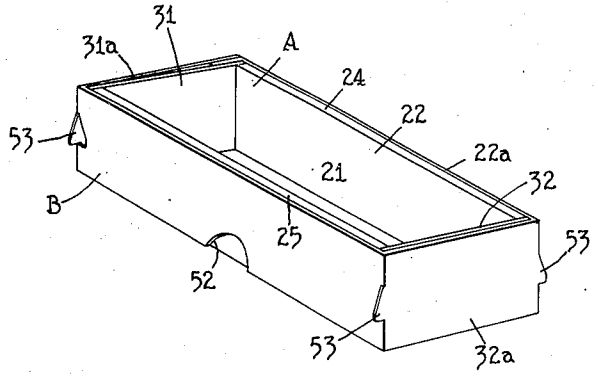


Fig. 8



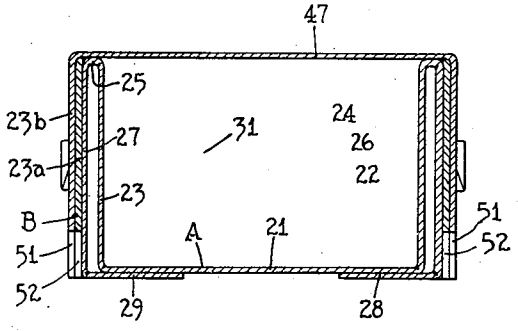


Fig. 9

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Fig. 5

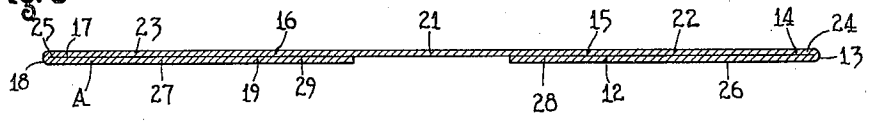
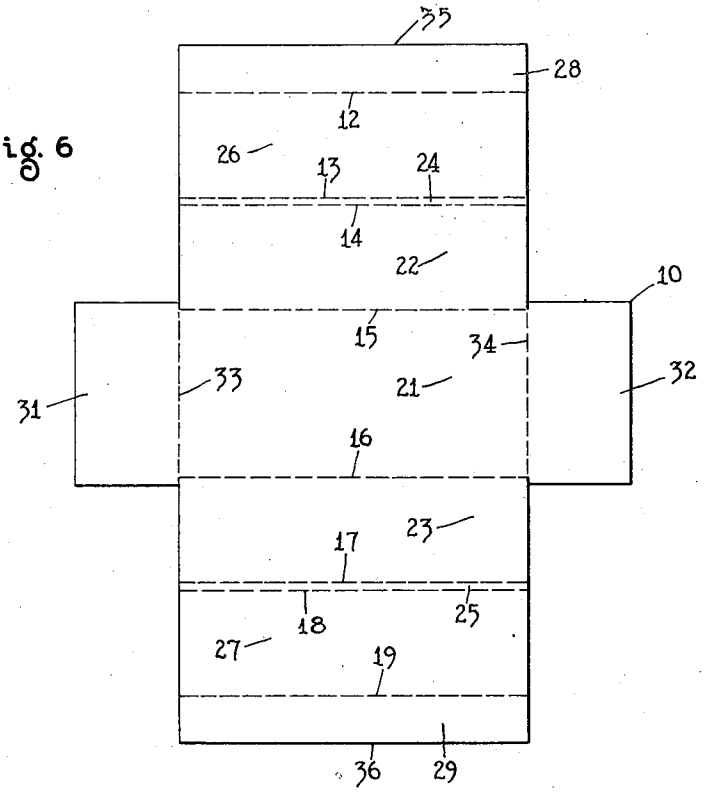


Fig. 6



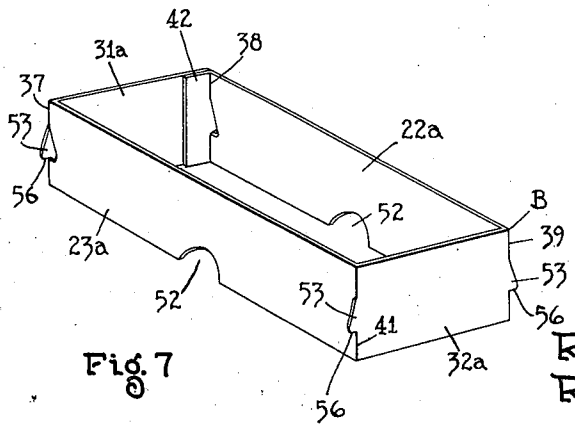


Fig. 7

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UNITED STATES PATENT OFFICE

2,284,959

CARTON

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Application November 12, 1938, Serial No. 240,021

10 Claims. (Cl. 229—23)

Our invention relates to cartons and has for an object to provide a carton adapted to be used for packaging liquid substances adapted to solidify and has for an object to provide a carton from which the solidified substances may be readily removed or dispensed.

An object of the invention resides in constructing the carton with a tray having a bottom and lateral walls hingedly connected therewith, said lateral walls being disconnected at their adjoining edges to permit swinging of the walls from collapsed position in which the tray forms a cutting board to erected position in which the contents are enclosed.

Another object of the invention resides in providing a hoop encircling said lateral walls and formed with lateral walls adapted to lie adjacent the lateral walls of the tray, said hoop holding the lateral walls of the tray in erected position and being readily removable from said tray to free the lateral walls of the tray, to permit of swinging of the same to collapsed position to expose the contents of the tray.

A still further object of the invention resides in providing a cover for the carton adapted to fit over said hoop and to cover the contents of the tray.

A feature of the invention resides in providing means for securing the hoop to the cover so as to cause the hoop to become disengaged from the tray when the cover is removed from the tray.

Another object of the invention resides in providing stiffening means for reinforcing the upper edges of certain of the walls of either of the tray or the hoop to prevent bulging of the walls when the container within the tray is filled with the liquid substance to be packaged.

Another object of the invention resides in constructing two of the walls of the tray double with flanges therebetween, arranged to fold into overlying planiform position, when collapsed, and to fold into extended position when erected to stiffen and reinforce the walls of the tray.

A still further object of the invention resides in providing locking tongues on certain of the walls of either of the cover or hoop and in constructing corresponding locking shoulders on the adjoining walls of the other thereof to secure the hoop to the cover when the cover is applied to the assembled hoop and tray whereby the tray is caused to be removed from the hoop when access to the contents of the tray is desired.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawings:

Fig. 1 is a perspective view of a carton illustrating an embodiment of our invention.

Fig. 2 is a perspective view of the cover of the carton shown in collapsed position.

Fig. 3 is a perspective view of the cover shown in erected position.

Fig. 4 is a perspective view of the tray of the invention shown in collapsed position.

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

Fig. 6 is a developed view of the blank from which the tray shown in Fig. 4 is constructed.

Fig. 7 is a perspective view of the hoop of the invention.

Fig. 8 is a perspective view of the hoop and tray assembly of the invention.

Fig. 9 is a cross sectional view taken on line 9—9 of Fig. 1.

Fig. 10 is a cross sectional view taken on line 10—10 of Fig. 1.

In the packaging and dispensing of cheese and similar substances which are poured in a liquid state in a container to be subsequently removed therefrom after solidification, considerable difficulty has been encountered in that the container expands when the cheese is poured in the same thereby causing the package to have a deformed appearance. At the same time considerable inconvenience has been encountered in dispensing the cheese from the package. The present invention provides a simple and convenient carton whereby dispensing and packaging of cheese is greatly simplified.

Our invention comprises a tray A, best shown in Figs. 4 and 9; a hoop B shown in detail in Fig. 7, and a cover C illustrated in Fig. 3. These parts cooperate in a manner to perform the desired functions and will now be individually described in detail.

The tray A is constructed from a blank 10 shown in Fig. 6 which is made from cardboard or some other suitable paper material. This blank is formed with a number of transverse scores 12, 13, 14, 15, 16, 17, 18 and 19. These scores divide the blank into a bottom 21, side walls 22 and 23 hingedly connected thereto, flanges 24 and 25 hingedly connected to the side walls 22 and 23, auxiliary walls 26 and 27 hingedly connected to the flanges 24 and 25, and flaps 28 and 29 connected to the auxiliary walls 26 and 27. The blank is notched at the corners to form end walls 31 and 32 which are hingedly

connected to the bottom 21 by means of scores 33 and 34. The various scores of the blank form hinges between the various parts whereby the same may be moved from collapsed to erected position and vice versa. In the fabrication of the blank, the flaps 28 and 29 are coated with adhesive along the marginal portions thereof adjoining the edges 35 and 36 of the blank. The coating falls short of the scores 12 and 19 by a distance equal to the width of the flanges 24 and 25. After being coated the blank is folded along the scores 13 and 18 and the adhesive of the flaps 28 and 29 caused to adhere to the bottom 21. The blank is now completed and ready for use. From Fig. 5 it will be apparent that the score 12 is off-set from the score 15 a distance substantially equal to the width of the flange 24. Similarly the score 16 is off-set from the score 19 a distance equal to the width of the flange 25. By means of this construction the wall 22 is adapted to become spaced from the auxiliary 26 and similarly the wall 23 is adapted to become spaced from the auxiliary wall 27 when the walls of the tray are folded into erected position. At the same time the flanges 24 and 25 are caused to extend outwardly from the walls 22 and 23 and at right angles thereto. The arrangement of the parts, when the carton is erected, is best shown in Fig. 9.

The hoop B as stated is best shown in Fig. 7 and is constructed from a strip of cardboard or other suitable material of a width equal to the height of the lateral walls of the tray A. This strip is scored at the four corners, as indicated at 37, 38, 39 and 41, to form lateral walls 22*a*, 23*a*, 31*a* and 32*a* and a flap 42 connected with the wall 22*a*. The flap 42 is adapted to be secured to the end wall 31*a* by adhesive or otherwise and ties the end of the hoop B together. The hoop B is adapted to be applied over the walls of the tray A or stating it differently said tray is adapted to be received within the said hoop and to telescope with reference thereto. Inasmuch as the walls of tray A are disconnected at their adjoining edges, the hoop B holds the walls from spreading and maintains the tray in erected form.

The cover C is constructed from a blank of paper cardboard or some similar paper product which is best shown in Figs. 2 and 3. This blank is formed with longitudinal scores 43 and 44 and with transverse scores 45 and 46 which divide the blank into a top 47, end walls 31*b* and 32*b*, and side walls 22*b* and 23*b*. In addition, the blank is cut along the scores 44 and 43 up to the scores 45 and 46 to form flaps 48 which are folded back and secured to the end walls 31*b* and 32*b* by means of adhesive or otherwise. The side walls 22*b* and 23*b* of the cover C are formed with diagonal scores 49 which permit of collapsing the carton so that the same may take the form shown in Fig. 2.

The cover C is constructed at the lower portions of the side walls 22*b* and 23*b* thereof, with finger notches 51. In like manner the hoop B is constructed with similar finger notches 52 which, when the parts are assembled, are adapted to register with one another. These finger notches permit of grasping the tray A at the lowermost portion thereof and by holding the cover C of removing the tray from the cover.

The hoop B is held attached to the cover C by means of a number of locking tongues 53. These tongues are struck out of the material forming the side walls 22*a* and 23*a* and are integral with the end walls 31*a* and 32*a*. The scores 37, 38 39 and 41 do not extend across these tongues so that, when the structure is folded the tongues remain in the planes of the end walls 31*a* and 32*a* and extend outwardly from the side walls 22*a* and 23*a*, as shown in Fig. 7. For cooperation with these tongues, a number of slots 54 are cut in the side walls 22*b* and 23*b* of the cover C. When the hoop B is inserted into the cover C, tongues 53 engage said slots and hold the hoop secured to the cover.

The manner of using the invention is as follows: The cheese or other substance to be packaged in the package is usually wrapped in paper, tin foil or some other suitable wrapping material. For this purpose a sheet of such material is placed upon the tray A when the same is collapsed. By means of suitable machinery, now available for the purpose, the sheet is folded to form a container open at the top, the excess portions of the sheet being doubled back upon themselves and overlapping at the ends of the container. This construction and method of wrapping such commodities being well known in the art, has not been shown in this application. The lateral walls of the tray A are folded up to fit the walls of the container so formed. This may be done at the same time that the container is formed or it may be done subsequently. The structure is then inserted into the hoop B and caused to telescope with respect thereto. The assembled container and tray are then forced into the hoop until the upper edges of the lateral walls of the tray register with the upper edges of the lateral walls of the hoop. The container is now filled by pouring melted cheese into the same until the required amount of cheese has been poured. The expanded portion of the wrapper or container is then folded over upon the melted cheese and the cover C applied to the entire assembled structure. The cheese is now properly packaged. Due to the flanges 24 and 25, the side walls of the tray B are greatly reinforced and bowing of these walls due to the pressure of the molten cheese is resisted. As the cover C is applied to the assembled structure, the tongues 53 are forced into the slots 54 and the lower edges 55 of said slots which form shoulders engage corresponding shoulders 56 on the said tongues and hold the hoop secured to the cover C. Whenever it becomes desirable to remove the contents of the package, for the purpose of dispensing the contents, the finger and thumb may be placed in the finger notches 51 and 52 and the lowermost portion of the tray A readily grasped. This tray may now be removed from the cover. Due to the fact that the hoop B is locked with reference to the cover C the hoop remains in the cover and the tray and contents are separately withdrawn from the hoop and cover. Upon being fully removed, the lateral walls of the tray A are free and may be swung outwardly into collapsed position, as shown in Fig. 4. When so swung, the solidified cheese is exposed and the wrapper or container enveloping the same may be easily removed and access had to the cheese. While the parts are so disposed the bottom 21 of the tray A forms a cutting board on which the cheese may be cut. Where a part only of the cheese is used the walls of the tray may be folded into erected position and the cover with the hoop attached which serve as a closure for the carton again applied to the tray

to close the same. If desired, the lateral walls of the tray may be broken away at the scores forming the hinges between the same and the bottom of the tray to facilitate application of the cover thereto. We have found that, where the end walls only are broken away, the side walls may be readily held in erected position while the cover is being applied to the tray. In such case the ends of the side walls hold the tray from longitudinal movement relative to the cover.

In the drawings it will be noted that the end walls **31** and **32** of the tray A are slightly wider than the bottom **21**, between the scores **15** and **16**. This is for the purpose of causing the said end walls to abut up against the end walls **22** and **23** and the auxiliary walls **26** and **27** of the tray when the same are erected. This prevents the end walls from unintentionally folding into the interior of the tray while the cheese is being poured into the container or wrapper. We have found that, due to the pairs of scores **12—15** and **16—19**, no tendency of the side walls to toe inwardly will result. Therefore, when the end walls abut against the side walls, the hoop holds all of the parts in position and the parts so remain while the cheese is being poured.

In the explanation of our invention we have shown the flanges **24** and **25** issuing from the upper edges of the side walls of the tray. It can readily be comprehended that similar flanges may also be used on the end walls, if desired. Also the flanges, instead of being formed on the walls of the tray might equally as well be formed on the walls of the hoop. Similarly the auxiliary walls used with the flanges might be formed on the walls of the hoop, as well as on the walls of the tray.

While we have described the locking tongues for holding the hoop attached to the cover, it can readily be understood that glue may be applied to the hoop or cover as the parts are assembled which would cause the same to stick together and prevent removal of the hoop when the cover is removed from the tray.

Our invention is highly advantageous in that an extremely simple and practical construction is provided whereby the cost of packaging cheese may be reduced. At the same time a greatly convenient construction is provided in which the cheese may be directly placed in the ultimate container without requiring the additional handling necessary where the cheese is first poured in suitable molds and subsequently packaged. With our invention the carton in which the cheese is packaged is readily opened by the user and when open the walls of the tray are easily disassembled to give access to the contents of the tray. With our invention the hoop is held attached to the cover so that, after the same has served its purpose, namely, to hold the tray in erected position while the cheese is being poured, the said hoop is out of the way and does not interfere with the dispensing of the cheese or other substance within the carton.

Changes in the specific form of our invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of our invention.

Having described our invention, what we claim as new and desire to protect by Letters Patent is:

1. A carton comprising a tray having a bottom and lateral walls hingedly connected therewith and free from one another at their adjoining edges to permit swinging of the walls from collapsed to erected position, a hoop encircling said lateral walls and holding the same in erected position, said hoop being readily removable from said tray to free said lateral walls to permit of swinging of the same to collapsed position to expose the contents of the tray, a cover adapted to fit over said hoop and tray and covering the contents of the tray, and attaching means acting between said cover and hoop for attaching the hoop to the cover to cause simultaneous removal of the hoop and cover from the tray.

2. A carton comprising a tray having a bottom and lateral walls hingedly connected therewith and free from one another at their adjoining edges to permit swinging of the walls from collapsed to erected position, a hoop having lateral walls corresponding with the lateral walls of said tray and encircling the same and holding the same in erected position, said hoop being readily removable from said tray to free said lateral walls to permit of swinging of the same to collapsed position to expose the contents of the tray, and a cover adapted to fit over said hoop and tray and covering the contents of the tray, said cover having lateral walls corresponding to those of the hoop and overlying the same, said lateral walls of the cover being co-extensive in height with those of the tray, the bottom of the tray being exposed beneath said hoop and cover to support the carton when the cover and hoop are removed.

3. A carton comprising a tray having a bottom and lateral walls hingedly connected therewith and free from one another at their adjoining edges to permit swinging of the walls from collapsed to erected position, a hoop having lateral walls corresponding with the lateral walls of said tray and encircling the same and holding the same in erected position, said hoop being readily removable from said tray to free said lateral walls to permit of swinging of the same to collapsed position to expose the contents of the tray, a cover adapted to fit over said hoop and tray and covering the contents of the tray, said cover having lateral walls corresponding to those of the hoop and overlying the same, and locking members acting between the lateral walls of said hoop and the lateral walls of said cover for restraining the hoop within the cover.

4. A carton comprising a tray having a bottom and lateral walls hingedly connected therewith and free from one another at their adjoining edges to permit swinging of the walls from collapsed to erected position, a hoop having lateral walls corresponding with the lateral walls of said tray and encircling the same and holding the same in erected position, said hoop being readily removable from said tray to free said lateral walls to permit of swinging of the same to collapsed position to expose the contents of the tray, a cover adapted to fit over said hoop and tray and covering the contents of the tray, said cover having lateral walls corresponding to those of the hoop and overlying the same, and attaching means acting between said cover and hoop for attaching the hoop to the cover to cause simultaneous removal of the cover and hoop from the tray.

5. A carton comprising a tray having a bottom and lateral walls hingedly connected therewith and free from one another at their adjoining edges to permit swinging of the walls from

collapsed to erected position, flanges issuing outwardly from the upper ends of certain of said lateral walls, a hoop encircling said lateral walls, said flanges being disposed within said hoop, means engaged by the hoop when the carton is erected to hold said flanges in outstanding position, said hoop being removable from said tray to free said lateral walls to permit of swinging of same to collapsed position and to expose the contents of the tray and a cover adapted to fit over said hoop and tray and cover the contents of the tray.

6. A carton comprising a tray having a bottom and lateral walls hingedly connected therewith and free from one another at their adjoining edges to permit swinging of the walls from collapsed to erected position, a hoop having lateral walls corresponding with the lateral walls of said tray and encircling the same and holding the same in erected position, said hoop being readily removable from said tray to free said lateral walls to permit of swinging of the same to collapsed position to expose the contents of the tray, a cover adapted to fit over said hoop and tray and covering the contents of the tray, said cover having lateral walls corresponding to those of the hoop and overlying the same, two of the opposite walls of said cover and two of the opposite walls of said hoop having registering finger notches whereby the underlying walls of the tray may be grasped and the tray removed from the hoop and cover.

7. A carton comprising a tray having a bottom and lateral walls hingedly connected therewith and free from one another at their adjoining edges to permit of swinging of the walls from collapsed to erected position, a hoop having lateral walls corresponding with the lateral walls of said tray and encircling the same and holding the same in erected position, said hoop being readily removable from said tray to free said lateral walls to permit of swinging of the same to collapsed position to expose the contents of the tray, a cover adapted to fit over said hoop and tray and covering the contents of the tray, said cover having lateral walls corresponding to those of the hoop and overlying the same, two of the opposite walls of said cover and two of the opposite walls of said hoop having registering finger notches whereby the underlying walls of the tray may be grasped and the tray removed from the hoop and cover, and means for securing the hoop within said cover.

8. A carton comprising a tray having a bottom and lateral walls hingedly connected therewith, flanges hingedly connected with certain of said lateral walls at the upper ends of the same, auxiliary walls hingedly connected to said flanges and disposed in parallel relation to said lateral walls and flaps hingedly connected to said auxiliary walls underlying the bottom of the tray and secured thereto, said flaps projecting outwardly beyond the bottom of the tray distances substantially equal to the widths of said flanges to cause said walls, flanges and flaps to fold into substantially planiform arrangement when collapsed and to cause said flanges to project laterally outwardly from said lateral walls when the walls are erected to stiffen same, a hoop encircling the lateral walls and holding the same in erected position, said hoop being readily removable from said tray to free said lateral walls to permit of swinging of the same to collapsed position to expose the contents of the tray, and a cover adapted to fit and cover the contents of the tray.

9. A carton comprising a tray having a bottom and lateral walls hingedly connected therewith, flanges hingedly connected with certain of said lateral walls at the upper ends of the same, auxiliary walls hingedly connected to said flanges and disposed in parallel relation to said lateral walls and flaps hingedly connected to said auxiliary walls underlying the bottom of the tray and secured thereto, said flaps projecting outwardly beyond the bottom of the tray distances substantially equal to the widths of said flanges to cause said walls, flanges and flaps to fold into substantially planiform arrangement when collapsed and to cause said flanges to project laterally outwardly from said lateral walls when the walls are erected to stiffen the same, and a hoop encircling the lateral walls and holding the same in erected position, said hoop being readily removable from said tray to free said lateral walls to permit of swinging of the same to collapsed position to expose the contents of the tray.

10. A carton comprising a tray having a bottom and lateral walls hingedly connected therewith at certain of the edges thereof, said walls being free to swing from erected position to substantially coplanar relation with respect to said bottom, a hoop encircling said lateral walls and holding the same in erected position, said hoop being readily removable from said tray to free the lateral walls to permit of swinging of the same into substantially coplanar relation with reference to the bottom of the tray, a cover adapted to fit over said hoop and tray and covering the contents of the tray, and attaching means acting between said cover and hoop for attaching said hoop to the cover to cause simultaneous removal of the hoop and cover from the tray.

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