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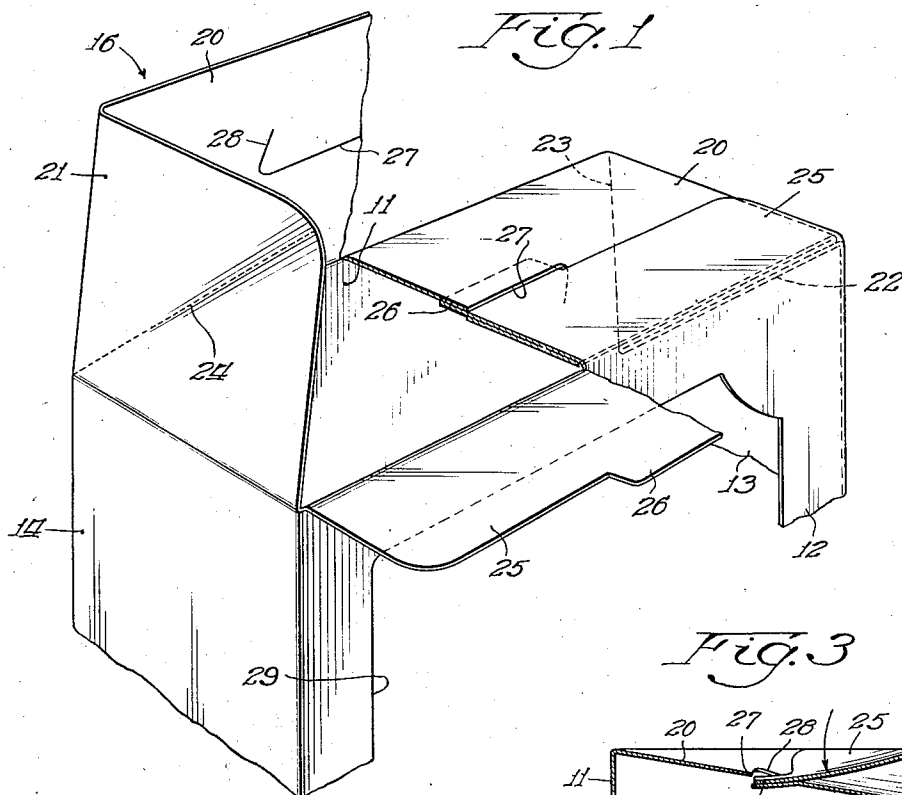
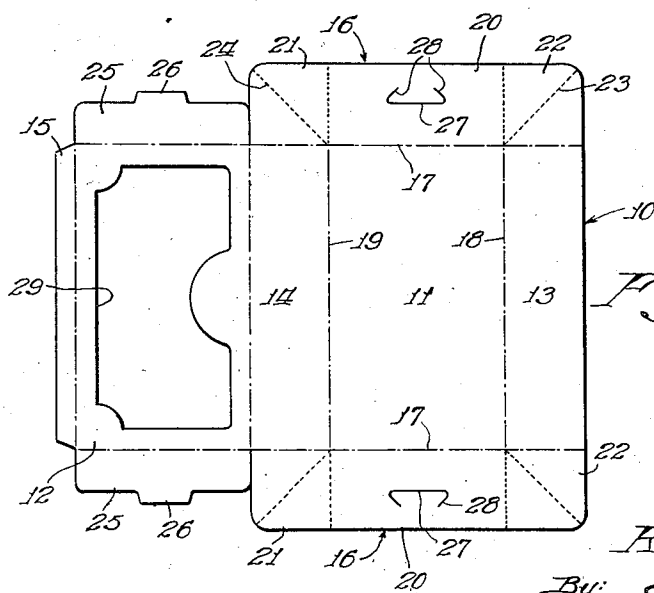
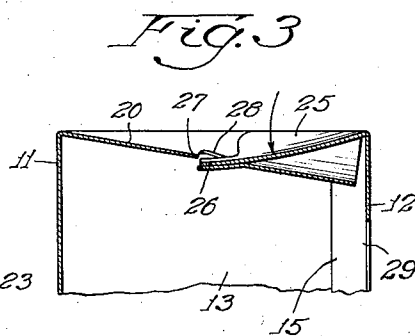
R. E. LOWEY

2,297,571

CARTON

Filed Sept. 29, 1939

2 Sheets-Sheet 1



Inventor:
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Att.

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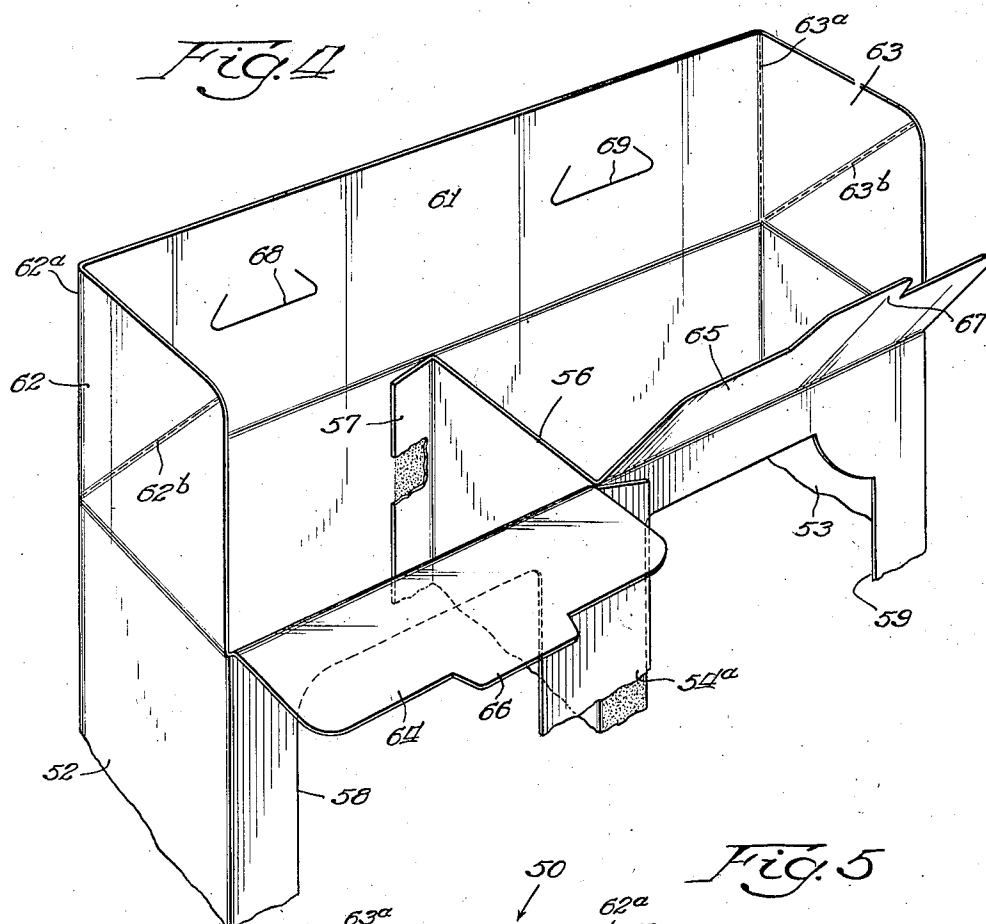
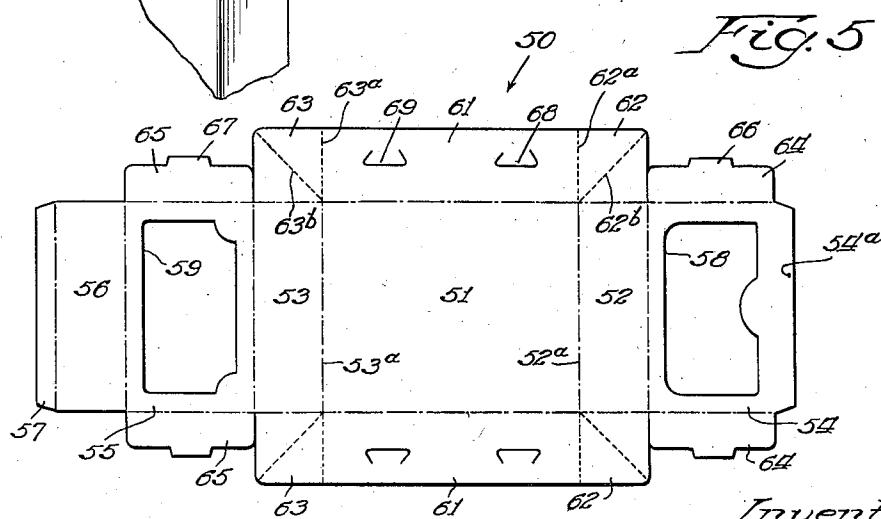
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CARTON

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,297,571

CARTON

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Application September 29, 1939, Serial No. 297,040

1 Claim. (Cl. 229—27)

The present invention relates to folding cartons and more particularly to cartons of tubular form adapted to be set up and secured in set up position by interengagement of closure portions without necessitating the use of separate securing means.

One object of the invention is to provide a carton of the type described which is sturdy and durable, and one which can be effectively set up with a minimum of time and effort.

Another object of the invention is to provide a carton of collapsible tubular form having a resilient closure portion adapted to be arranged in locking engagement with another closure portion by moving the parts into a position beyond their normal closure forming position thus causing a substantially automatic action and without the necessity of any tedious or laborious tucking in of locking flaps.

Another object of the invention is to provide an effective form of carton of the type described in which two compartments are provided by means of a longitudinal partition transverse to the closure and forming a central support therefor.

Other and more specific objects of the invention will become apparent as the description proceeds.

In the drawings:

Fig. 1 is a perspective view, partially in section, of the upper end portion of a container formed in accordance with the present invention, illustrating the container as it would appear with the closure flaps torn and parts thereof in raised position and the remaining parts in engaged condition;

Fig. 2 is a plan view of the container blank.

Fig. 3 is a cross-sectional view of the upper end portion of the container illustrating the manner of causing engagement between the cooperating parts of the closure;

Fig. 4 is a perspective view of the upper portion of a somewhat modified form of container; and

Fig. 5 is a plan view of the blank of the modified form of container.

The present invention provides a carton well suited for rapid hand packing of commodities, such as foods where the food has been previously placed in a liner or bag designed to be received into the carton. The construction of the carton is such that it can be set up and secured in closed condition quickly and easily by relatively unskilled workers, the setting up and securing in a closed condition being accomplished without special tools or equipment.

Referring more particularly to the drawings

the carton blank 10, preferably formed of resilient paperboard, is suitably cut and scored to provide two relatively wide side wall panels 11 and 12 and two relatively narrow edge wall panels 13 and 14. A narrow flap is provided, herein shown as integral with wall 12, adapted to be glued to the inner surface of the wall 13 thus forming the blank 10 into a tubular carton.

Extending from opposite ends of the carton side wall 11 and edge walls 13 and 14 are portions 16, 16 defined from the side and edge walls by score lines 17, 17 and divided by score lines 18 and 19 extending lengthwise of the carton to form three sections, 20, 21 and 22. The section 20 is equal in width to the side wall and the sections 21 and 22 are equal in width to the edge walls.

The sections 21 and 22 are diagonally foldable along fold lines 23 and 24 formed by scoring or otherwise weakening the board so that the sections 21 and 22 will be foldable one half on the other half so as to adapt it to lie beneath the section 20 to form part of the carton closure. To facilitate bending and to insure that bending of the sections 21 and 22 relative to section 20 will tend to follow a proper sequence the fold lines between the sections 20, 21 and 22 will preferably be formed as cut score lines, the cuts being made on the outer surface of the carton.

The side wall 12 has a flap extension 25 at each end thereof which is provided with a locking tab 26. This locking tab is arranged to be engaged in an opening formed in the section 20. In the present instance the opening is formed by making a slit 27 in the section 20. The ends of the slit, as indicated at 28, 28, are preferably curved so as to assume an angular relation to the main portion of the slit. As indicated, the slit portions 28, 28 are preferably formed in an outwardly converging relation.

The carton as above described is furnished to the user in collapsible, tubular form, the flap 15 being glued at the box factory to the edge of wall 13.

When it is desired to set up the carton to adapt it for the reception of a food product or other commodity, it is only necessary to bring the tubular carton into an expanded condition after which one end will be closed. A convenient manner of closing one end of the carton is to hold the expanded carton between both hands and press inwardly with the fingers upon the diagonal score lines 23 and 24 thus collapsing sections 21 and 22, and at the same time swinging downward section 20 to a position in which it comes to rest substantially in the plane of the edges

of the side and edge walls. In this position, the section 20 will overlie the sections 21 and 22 which will then be doubled upon themselves. The flap extension 25 on the wall 12 is then brought down over the section 20 and, by applying deflecting pressure upon the overlying parts, the tab 26 will be caused to slide along the surface of section 20 until the edge of the tab clears the edge of the slit 27 with a snap action. See Fig. 3. Releasing of the depressed parts will thereupon cause the locking tab to be fully engaged in the slit 27. It is to be noted that the dimension of the flap extension 25 and tab 26 measured at right angles to the edge of the side wall 12 is such that the locking tab can readily be snapped into place due to the resiliency of the paperboard and without causing any permanent deformation of the tab or other adjacent parts of the carton.

After the commodity has been introduced into the carton, the remaining open end is closed in a manner similar to that above described.

If desired, the carton may be readily opened without permanent deformation of the locking parts by applying pressure to the section 20 adjacent the slit until the tab 26 is withdrawn from the slit. The closure parts then may be lifted to raised position thus permitting the commodity to be readily poured or otherwise removed from the carton.

The wall 12 is herein illustrated as having a window opening 29 for displaying the contents of the carton.

In Figs. 4 and 5, illustrating a modified form of the invention, the carton blank 50 is suitably cut and scored to provide a main panel 51, and edge wall panels 52 and 53 similar to edge wall panels 13 and 14 in the first described form of the invention. Extending from the edges of the edge walls 52 and 53, and integral therewith, are two panels indicated at 54 and 55 respectively, forming between them an additional side wall. On the edge of panel 55 and integral therewith is a hinged extension 56 forming a partition for the carton. The panel 56 carries a hinged securing flap 57 by means of which the lower edge of the partition is hingedly secured to a central part of the inner surface of the panel 51.

The panels 54 and 55 have window openings 58 and 59 respectively formed therein for the purpose of displaying the contents in each of the compartments of the carton.

For the purpose of securing the carton into rectangular tubular form, the panel 54 is in the present instance formed of a width somewhat greater than one-half of the entire width of the carton so that the edge portion 54a of the panel 54 will extend sufficient distance to overlap the edge of the panel 55. The projecting portion on panel 54 is suitably secured, as by means of adhesive, to the edge of the panel 55.

The carton as thus far described is in the form of a rectangular tube having the partition panel 56 separating the tube longitudinally. The joined panels 54 and 55 thus form a wide wall having the same width as side wall 51. The two side walls being of the same width and the panel 56 and edge walls 52 and 53 being all of the same width, it will be readily understood that the carton may be collapsed to a flat condition.

For the purpose of forming a closure for the carton, there are provided at each end of the carton extensions 61, 62 and 63. These extensions are defined from each other by the score lines 62a and 63a which form extensions of the score lines 52a and 53a. The score lines 62a and

63a are preferably formed as cut scores in which the cut is made from the outside surface of the carton. The extensions 62 and 63 are provided with diagonally folded lines 62b and 63b which may be formed by scoring or otherwise suitably weakening the material of the portions along a forty-five degree angle. The construction thus far described is essentially the same as the construction in the first described form of the invention.

The portions 61, 62 and 63 are adapted to be folded down until the portion 61 comes to rest on the edge of the partition 56. This portion is adapted to be engaged by flaps 64 and 65 extending respectively from the panels 54 and 55. Each flap 64 and 65 has a locking tab 66 and 67 extending therefrom.

The portion 61 has two openings and is formed by slits 68 and 69 which may be shaped in a manner similar to the slit 27 of the first form of the invention. After the portion 61 has been moved to a closure forming position, it can be readily secured in place by snapping the locking tabs 66 and 67 into the respective slits 68 and 69 in a manner similar to that previously described.

The edge of the partition 56, being in close underlying contact with the central part of the portion 61, tends to give increased resistance to the portion 61 so that the latter portion can be relatively long in proportion to its width and at the same time there will be no undesirable sagging of the portion 51 during the operation of locking the carton closed as would be the tendency if the edge of the partition was not positioned so as to support the central part of the portion 61.

Due to the construction and arrangement of parts of the closure of both forms of the present invention, it is obvious that there is provided a carton having a very rigid and sturdy end construction which will not only withstand considerable top pressure in piling filled cartons one upon the other but torsional stresses will also be very satisfactorily resisted.

The edges of the locking flaps 25 in the first form of the invention and the corresponding edges of the flaps 64 and 65 in the second form of the invention are preferably of such dimensions as to engage with the material defining the edges of the slits 27, 68 and 69 respectively so that when the closure flaps are in their normal, undeflected position, a force applied to the edges of the closure elements along the edges of the side walls will be resisted due to the fact that the edges of the locking flaps engage the edges formed by the slits as just described.

Rigidity of the ends is also increased by the provision of the folded portions 21 and 22 in the first form and portions 62 and 63 in the second form. The combined results of both of the described features to resist crushing stresses in the ends of the carton insures the production of a carton that not only will resist crushing stresses of considerable magnitude but, at the same time, the carton may be set up and secured in its set up condition very rapidly and effectively.

Any internal pressure exerted upon the closure elements intended to force them outwardly will not become readily effective to dislodge the closure portions from their contact with each other as under ordinary circumstances, the side wall panel will tend to become severed from the adjacent edge panel before the flaps can be disas-

sociated due to the application of internal pressure.

Cartons made in accordance with the present invention, after same have been set up, are particularly well adapted for use where a carton is required to have a display or window opening in one panel extending over a major portion of such panel. Such an opening has the tendency of weakening the panel but, by reason of the sturdy end or closure construction, the window opening may be of such size that only a small margin is left remaining on a main or side wall panel but, even with only a small margin, the construction of the end closure sections will impart a sufficient degree of rigidity to the entire carton to enable it to be employed without likelihood of the carton becoming unduly torn or distorted due to hard usage.

While the present description sets forth a preferred embodiment of the invention, numerous changes may be made in the construction without deviating from the spirit of the invention, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not restrictive, reference being had to the appended claim rather than to the foregoing description to indicate the scope of the invention.

I claim:

A two-compartment, folding carton formed from a single blank of resilient paperboard, the blank being formed with score lines defining a common side wall for both compartments, edge walls on each side of the common side wall, a panel on the extremities of each edge wall, said panels being adapted, when joined, to form the other side wall, a partition panel on the outer edge of one panel forming part of the two-panel side wall, means on the partition adapting it to be secured to the common side wall, an extended portion on the other panel of the two-panel side wall adapting it to be secured to its companion panel, integrally joined closure-forming exten-

sions carried by the common side wall and the edge walls, the extension on the common side wall being adapted to fold down to closure-forming position to lie substantially in the plane defined by the edges of the common side wall, the two-panel side wall, the edge walls and the partition, the panels forming the two-panel side wall each having a closure flap thereon adapted to overlie the closure forming extension on the common side wall, said closure flaps each having a centrally positioned, relatively short, rigid locking tab on their free edge and the closure forming extension on the common side wall being formed with two slits, each centrally located with respect to the compartments formed by the partition panel, said slits being adapted to receive the respective locking tabs on said locking flaps upon inward deflection of the slit portions of the closure-forming extension on the common side wall somewhat beyond the plane defined by the edges of the side and edge walls and partition, the extensions on the edge walls being each formed with a diagonal score extending from the corner of the side wall to the edge of the extension at an angle of approximately forty-five degrees, whereby the edge wall extensions are adapted to be folded down to lie against the inner surface of the common side wall extension upon its being brought down to closure-forming position and serving substantially positively to support the external edges of said closure forming extension and offering resistance, together with the edge of the partition, to the inward deflection of the slit portions thereof, whereby after a locking tab has been received within its companion slit, release of pressure from the closure-forming extension will cause the deflected parts to return to the plane defined by the edges of the side wall, edge walls and partition with the closure-forming extension pressed outwardly in face to face contact against the opposite closure flap.

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