Dec. 1, 1953 J. A. ZINN, JR 2,661,141

LAMINATED CARTON

Original Filed Feb. 3, 1948 4 Sheets-Sheet 1

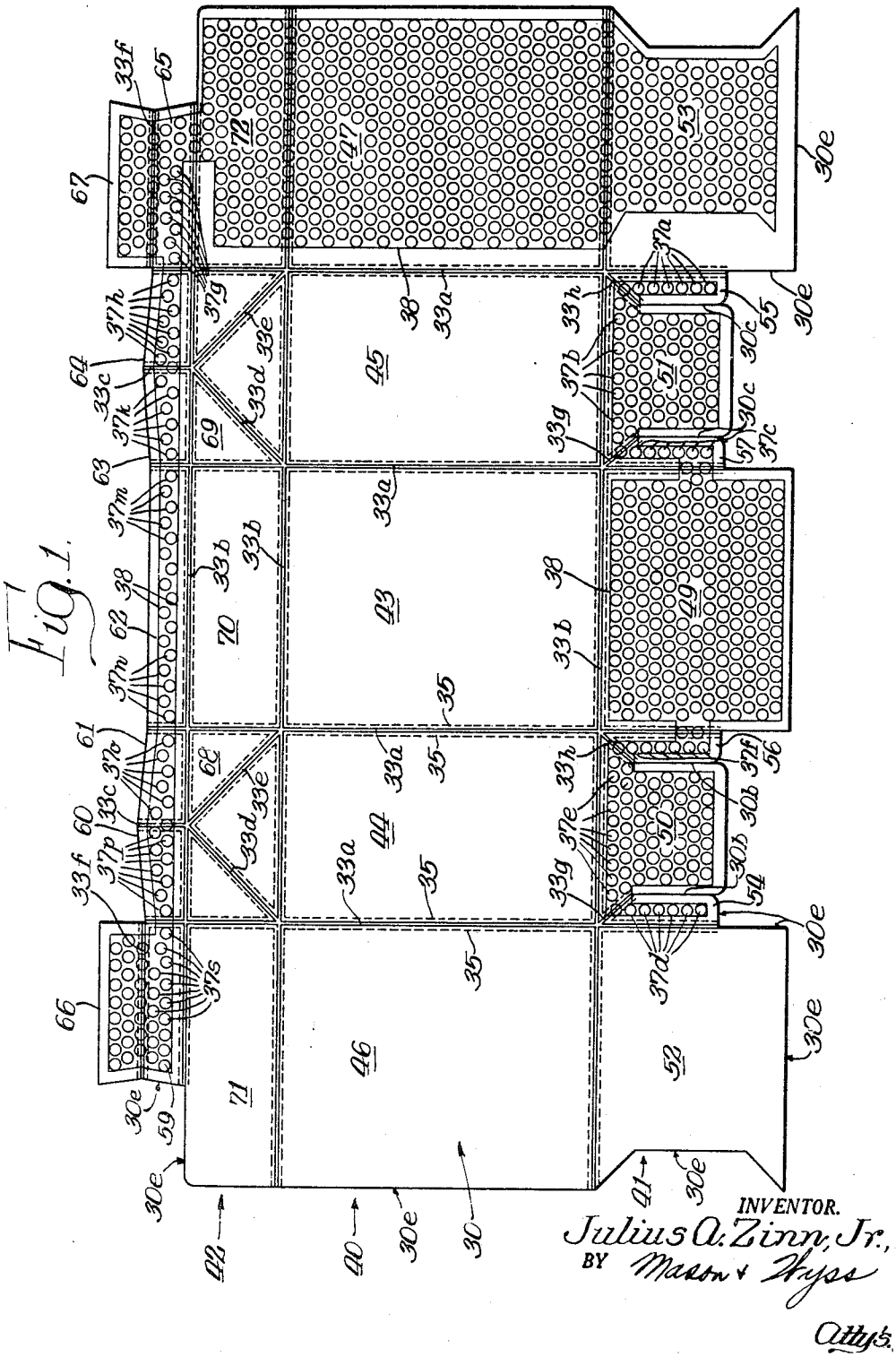


Fig. 1.

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Fig. 2.

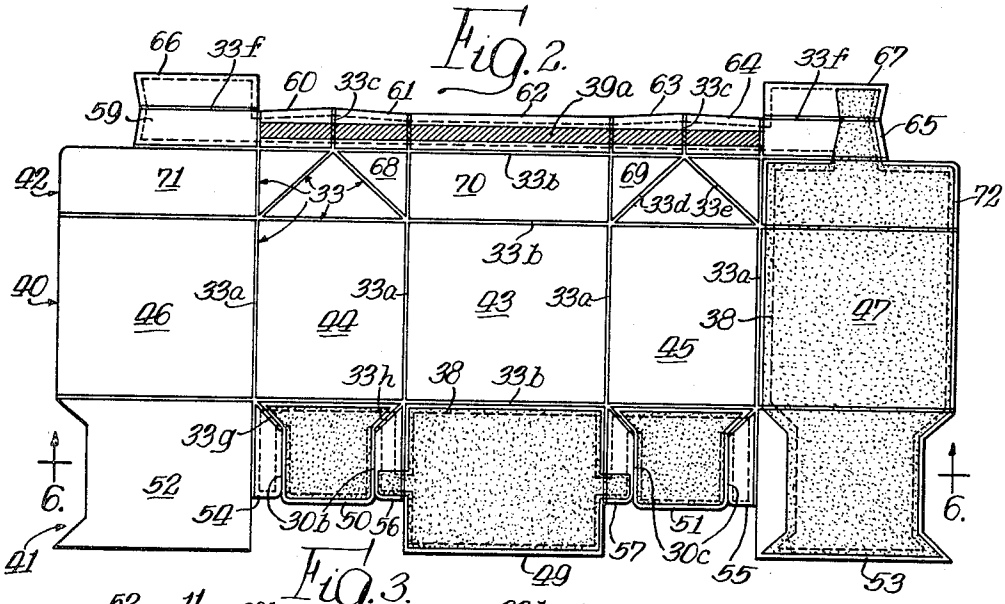
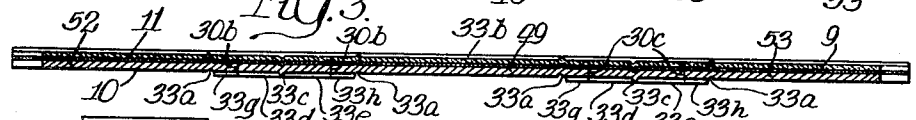


Fig. 3.



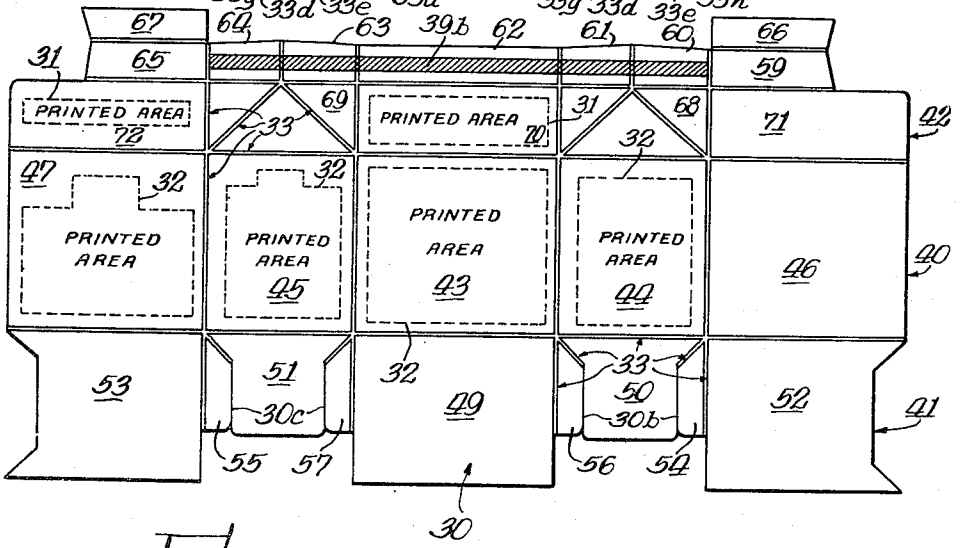


Fig. 4.

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LAMINATED CARTON

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Fig. 5.

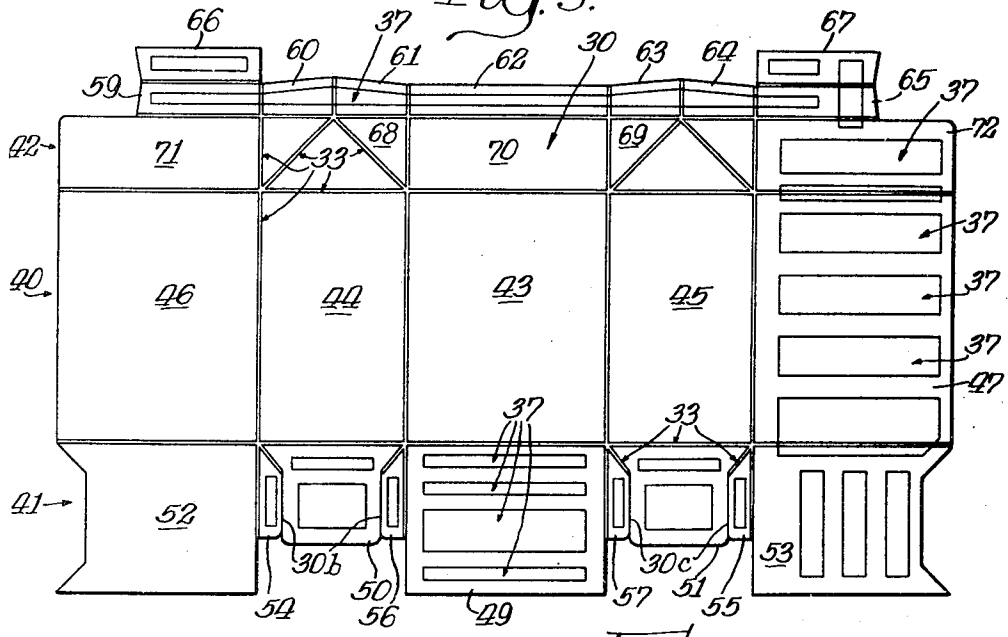
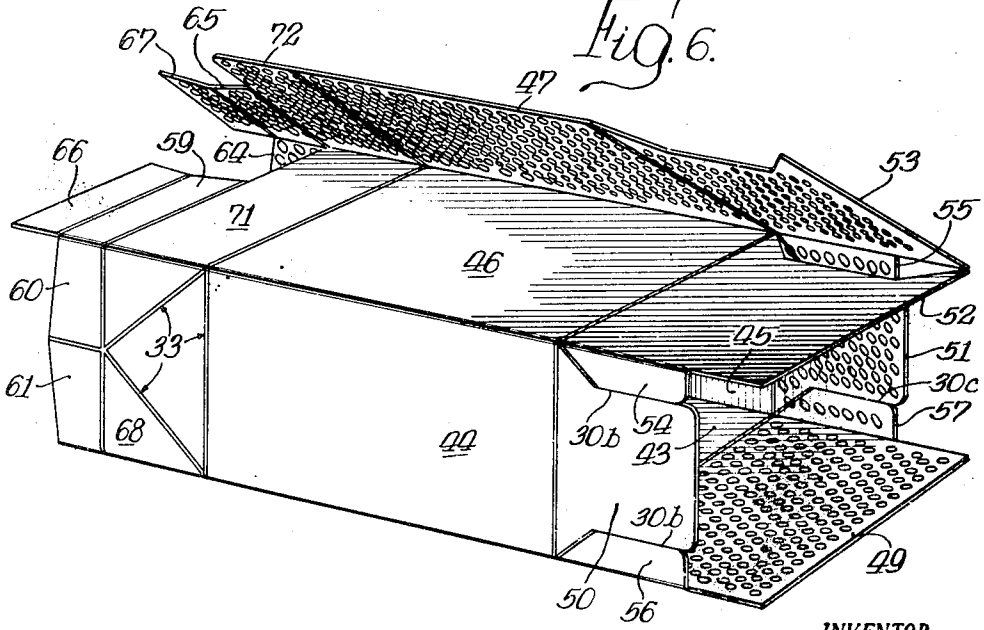


Fig. 6.



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Fig. 7.

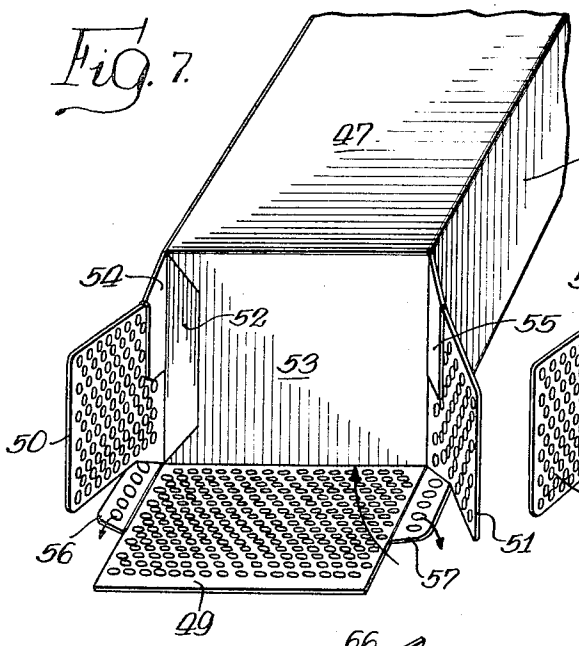


Fig. 8.

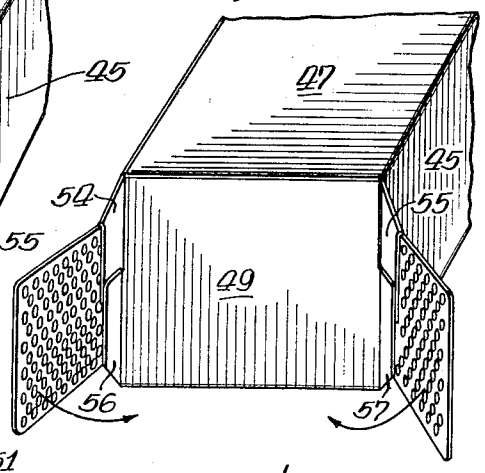


Fig. 11.



Fig. 9.

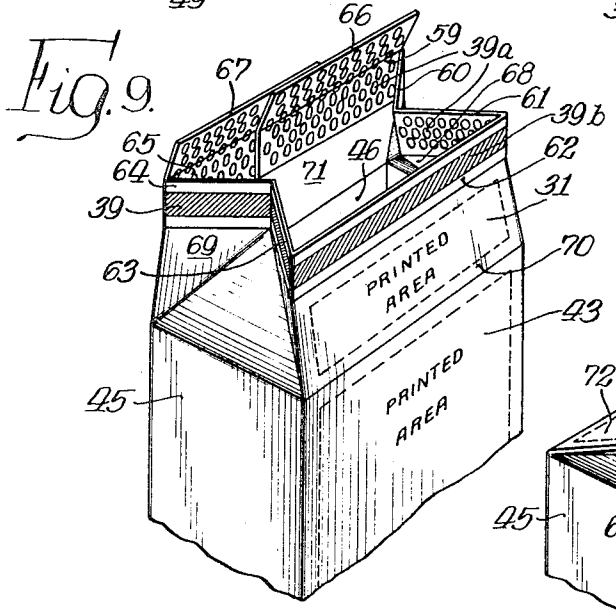
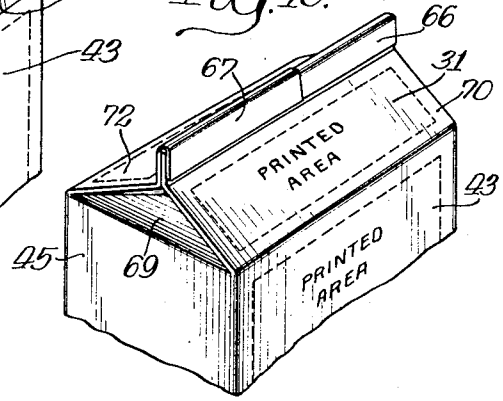


Fig. 10.



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Patented Dec. 1, 1953

2,661,141

UNITED STATES PATENT OFFICE

2,661,141

LAMINATED CARTON

Julius A. Zinn, Jr., Chicago, Ill.

Original application February 3, 1948, Serial No. 5,917. Divided and this application February 3, 1948, Serial No. 5,918

3 Claims. (Cl. 229—37)

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The present invention relates to improvements in packaging blanks and more particularly to an improved laminated packaging blank which is adapted to be formed into a sealed sift proof and liquid retentive package. This application is a division of applicant's copending application Serial No. 5,917, filed February 3, 1948, now Patent No. 2,542,298.

The value of employing sealed containers in packaging certain consumer commodities, particularly liquids and foods, has long been recognized in the packaging art. Such containers must be sift proof, air and moisture tight and when designed to contain liquid commodities, must also be impervious to the packaged liquid. Paper containers or packages designed to meet these requirements are generally of two types, i. e., those which are coated with wax or another sealing material after the cartons are formed, and those constructed of a laminated stock consisting of an outer backing material, usually cardboard, laminated with an inner lining material, such, for example, as a metallic foil, waxed paper, a plastic foil or film, or the like, which is relatively much more impervious to air, moisture and liquids generally, than the outer backing material. Known packages of the latter type have not been satisfactory for the reason that in the formation of the blank into a package, certain operations are necessarily performed which result in air and fluid leakage paths being inadvertently formed through various wall sections of the completed package. Thus, when prelaminated stock is used in making the package blanks, it is almost impossible to form the necessary fold lines on the stock and then fold along these lines to form the package, without breaking or tearing the lining lamination at points along these lines. Moreover, many of the liner materials having the most desirable characteristics from the standpoint of the sealing and non-contaminating properties thereof, are extremely impervious and hence are very difficult to adhere together or to any other surface. As a result, if such lining materials are used, there is great likelihood of package failure at the junction surfaces of those portions of the package blank which are overlapped and adhered together as the package is formed, this for the reason that at least one layer of the lining material is always interposed between the overlapped sections of the backing material throughout such overlapped portions of the blank. Further, certain edges of the usual package blank are always exposed to the package contents after the blank is formed into a package

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and filled. This means that if a laminated blank is used, certain raw edges of the outer paper backing material are exposed to the package contents, with the result that if the package is liquid filled, the liquid may be absorbed into the backing material and cause package failure. Because of the above-mentioned disadvantages, such laminated packages as have been produced commercially have been quite expensive and have never been found entirely satisfactory for use in packaging liquids.

It is an object of the present invention, therefore, to provide an improved laminated packaging blank which may be formed into a package without introducing the above-mentioned defects into the completed package.

It is another object of the invention to provide an improved laminated packaging blank having a structure such that it may be easily formed into a completed package of sturdy construction without damage to the lining material.

It is still another object of the invention to provide an improved laminated packaging blank of such construction that when formed into a package, the inner lining material lamination itself effectively comprises a completely sealed container which is rigidly reinforced by the formed backing material lamination.

The invention, both as to the present improved blank and the method of forming the same into a package will best be understood by reference to the following specification, taken in connection with the accompanying drawings, in which:

Fig. 1 is a plan view illustrating a packaging blank formed in accordance with the present invention, as seen from the lined side thereof;

Fig. 2 is a plan view of the blank shown in Fig. 1 illustrating the surface areas of the blank to which an adhesive material is applied prior to formation of the blank into a package;

Fig. 3 is a sectional view taken along the line 6—6 in Fig. 2, illustrating in exaggerated thickness the laminated structure of the blank;

Fig. 4 is a plan view of the completed blank as seen from the backing material side thereof;

Fig. 5 is a plan view of a completed blank as seen from the lining material side thereof, illustrating a different mode of perforating the lining material of the blank;

Fig. 6 is a perspective view illustrating one of the first steps involved in forming the blank shown in Figs. 1, 2, 3 and 4 into a package;

Figs. 7 and 8 are fragmentary perspective views illustrating certain steps which are successively

performed in forming the bottom end closure of the package;

Figs. 9 and 10 are fragmentary perspective views illustrating successive steps in the formation of the top closure of the package; and

Fig. 11 is a fragmentary sectional view illustrating the manner in which certain edges of the blank shown in Figs. 1, 2, 3 and 4 are sealed against liquid penetration.

In general, the improved laminated package blank herein disclosed is formed in the manner disclosed and claimed in applicant's copending application Serial No. 5,917, filed February 3, 1948, now Patent No. 2,542,298. In accordance with one feature of the present invention, a laminated package blank is provided in which only the lining material is perforated over those areas of the blank which are adapted to be facingly engaged and adhered together in forming the blank into a package, thereby to obviate the above-described problem of obtaining a secure bond between two facing lining material surfaces or between facing surfaces of the lining material and backing material. In those particular instances where portions of the blank are overlapped to sandwich two layers of lining material between two pieces of backing material, the perforations through the two engaging layers of lining material are arranged to register with each other, thereby to permit direct adherence of the overlapped pieces of backing material together. In this regard, it is noted that the term "perforation," as used herein with particular reference to the lining material of each blank, is intended broadly to cover any and all types of openings of whatever size and configuration (such for example, as round, oval, rectangular, or square) which will permit overlapped segments of the backing material to be directly adhered together in forming the blank into a package. In accordance with another feature of the invention, the lining material of each blank adhered to the backing material only over areas which are marginally spaced from the score or fold lines of the blank, thereby to prevent the lining material from being torn or punctured as the blank is folded into the desired package configuration. In accordance with a further feature of the invention, those edges of the blank which are adapted to be exposed to the package contents upon formation of the blank into a package are sealed by impregnating the same with a suitable sealing material; this for the purpose of preventing liquid absorption into the backing material when the blank is formed into a package and filled with a liquid or any material having a liquid constituent. According to still another feature of the invention, the present improved blank is provided with oppositely directed score lines which facilitate opposite direction bending along different ones of the lines in forming the blank into a package.

Referring now to the drawings and more particularly to Figs. 1, 2, 3 and 4 thereof, the present improved laminated package blank there illustrated is adapted to be used in the construction of packages or cartons of the improved construction disclosed and claimed in Zinn Patent No. 2,412,666, granted December 17, 1946.

Briefly, the blank comprises a backing material lamination **10** of heavy paper, a composite or laminated paper or semi-stiff cardboard or the like, and a liner or lining material lamination **11** which is of the same size and configuration as the backing material lamination and is adhesively bonded to the backing material lamination over the specific areas described below by means of a layer of adhesive material **9**. The lining material lamination **11** is liquid repellent and impervious to air and may consist of cellophane, any of the well known liquid-repellent plastic films, such, for example, as Pliofilm, or a metallic film such as tin foil or aluminum foil, depending upon the particular use to which a package formed from the blank is to be put. In configuration, the blank is similar to that disclosed in applicant's prior Patent No. 2,412,666 granted December 17, 1946. As there described and again referring more particularly to Fig. 1 of the drawings, each blank comprises a main body portion **40**, a bottom closing portion **41**, and a top closing portion **42**. The body portion of the blank comprises a side wall panel **43**, end wall panels **44** and **45**, and side panel members **46** and **47** which are arranged to be adhesively joined to form a two-ply side wall panel of the character illustrated in Figs. 7 and 8 of the drawings. The bottom closing portion **41** of the blank comprises a side flap member **49**, end flap members **50** and **51** and side flaps **52** and **53** which are arranged to be overlapped and adhesively joined to form a two-ply flap of the character illustrated in Figs. 7 and 8 of the drawings. The side flap members **52** and **53** are respectively provided with integral side wings **54** and **55** respectively separated from the end flap members **50** and **51** along the severance lines **30***b* and **30***c*. Similarly, the side flap member **49** is provided along opposite ends thereof with integral wing parts **56** and **57** which are separated from the adjacent end flap members **50** and **51** along the severance lines **30***b* and **30***c*. Each of the side and end flap members **49**, **50**, **51**, **52** and **53** is effectively hinged to the body portion **40** of the blank along the lowermost one of a plurality of score lines **33***b* which extend longitudinally of the blank. Similarly, the side flap member wing parts **54**, **55**, **56** and **57** are effectively hinged to the side flap members **52**, **53** and **49**, respectively, along score lines **33***a* which extend transversely of the blank. These wings are foldably hinged to the end flap members **50** and **51** along the score lines **33***g* and **33***h*, which as shown, extend from the upper ends of the severance lines **30***b* and **30***c* to the adjacent points of intersection between the respective adjacent score lines **33***a* and **33***b*. The described score lines **39***g* and **33***h* are disposed at 45 degree angles with respect to the score lines **33***a* and **33***b*.

The parts forming the top closing portion **42** of the blank are formable into a bellows-fold type of top closure and comprise end wall parts **68** and **69** provided with score lines **33***d* and **33***e* for facilitating formation of the bellows-folds, a side wall part **70**, and side wall members **71** and **72** which are arranged to be adhesively joined to form a two-ply upper side wall in forming the blank into a package. The side and end wall parts of the top closure blank portion **42** are respectively provided with mouth closing panels **59**, **60**, **61**, **62**, **63**, **64**, and **65** which are arranged to be folded and brought together in the manner explained below to form an upstanding and elongated mouth structure of the character shown in Fig. 10 of the drawings. The mouth closing panels **59** and **65** are respectively provided with extended tab wings **66** and **67** arranged to be adhesively joined to form a folding flap which encloses the elongated mouth structure of the

package in the manner illustrated in Fig. 10 of the drawings. As will be evident from inspection of Fig. 1 of the drawings, the panels **68**, **69**, **70**, **71** and **72** are hingedly connected to the main body portion **40** of the blank by means of the middle score line **33***b*. The mouth closing panels **59**, **60**, **61**, **62**, **63**, **64** and **65** are hingedly connected to the blank parts **71**, **68**, **70**, **69** and **72** by means of the upper score line **33***b*. Vertically, the top closure parts of the blank are hingedly connected by means of the vertically extending score lines **33***a*. Inward folding of the end panels **68** and **69** and connected mouth closing panels **60**, **61**, **63** and **64** is facilitated by the vertical score lines **33***c* which extend vertically downward from the top edge of the blank to the points of intersection of the score lines **33***d* and **33***e*. The score lines **33***f* serve hingedly to connect the folding tabs **66** and **67** to the mouth closure panels **59** and **65** respectively.

All of the score lines are formed in the backing material lamination **10** prior to lamination of this material lamination with the lining material lamination **11**. As will be apparent from the following explanation with reference to the manner of forming the blank into a package, excepting three steps, all folding steps required in forming the top and bottom closure structures of the package involve bending the blank about the described score lines in such a direction that the outside of each bend is at the outer backing material side of the blank. On the other hand, the bends made along the score lines **33***c*, **33***d*, **33***e*, and **33***g* and **33***h* involve reverse bending of the stock in forming the blank into a package. In accordance with one feature of the present invention, the score lines **33***a*, **33***b*, and **33***f* are formed to bulge upwardly from the lining material side of the blank, whereas the score lines **33***c*, **33***d*, **33***e*, **33***g* and **33***h* are formed to bulge in the reverse direction. In this way, the score line depressions are such that each and every folding operation involved in forming the blank into a package is effected by bending the backing material of the blank around the score line depressions. This has the effect of minimizing the likelihood of tearing the backing material of the blank as the folding operations involved in forming the blank into a package are performed.

In accordance with another feature of the invention, the lining material lamination **11** of the blank is perforated over those areas thereof, illustrated in Fig. 1 of the drawings, which are adapted to be brought into facing engagement and adhered together in folding the blank into a package, with certain of the perforations being adapted to be brought into registry as certain of the folding operations are performed. More specifically, the blank is perforated as indicated at **37** only within the confines of the border lines **38**. These border lines are within the areas of the blank which are brought into facing engagement and adhered together in forming the blank into a package. The particular configuration and size of the perforations **37** is of no importance. For example, the perforations may be in the form of small round holes as predominantly shown throughout the various figures of the drawings. Alternatively, the perforations **37** may be in the form of elongated slots of rectangular configuration, as shown in Fig. 5 of the drawings. While the particular configuration of the perforation openings is of no importance, the positional relationship of certain of these openings with respect to each other is of great importance. Thus, the purpose of providing such openings is to permit direct adherence of facing segments of the backing material together through the perforation openings as the blank is formed into a package. Over those areas of the blank where two thicknesses of the lining material are sandwiched between overlapped portions of the backing material in forming the blank into a package, it is necessary, in order to realize the desired end of obtaining a direct adhesive connection between the overlapped segments of backing material, to so position the perforation holes **37** that the holes through the two engaging layers of lining material are in registry. In constructing a blank of the character shown in Fig. 1 of the drawings which is adapted to be formed into a package of the type shown in Figs. 6 through 10 of the drawings, this requirement of perforation hole registry involves the perforation holes **37***a*, **37***b*, **37***c*, **37***d*, **37***e*, **37***f*, **37***g*, **37***h*, **37***k*, **37***m*, **37***n*, **37***o*, **37***p*, **37***s*. More specifically, the perforation holes **37***a* and **37***c* are adapted to register with the perforation holes **37***b* when the blank is formed into a package. Similarly, the holes **37***d* and **37***f* are so positioned as to register with the holes **37***e* as the bottom closure parts of the blank are folded and overlapped incident to formation of the blank into a package. As regards the top closure parts of the blank, the perforation holes **37***g* and **37***h* are so positioned as to register with each other, and the holes **37***k* and **37***m* are likewise positioned to be brought into registry. At the other end of the top closure structure, the holes **37***n* are adapted to register with the holes **37***o* and the holes **37***p* are arranged to be brought into registry with the holes **37***s*. Further, each of the score lines **33***c*, **33***g* and **33***h* and the right end of the upper score line **33***b* has at least one perforation hole **37** centered thereover in the lining material **11** of the blank. Aside from the described positional arrangement of certain of the perforation holes, it is pointed out that all perforation holes are marginally spaced back from the boundaries of those areas of the blank which are overlapped and adhered together in forming the blank into a package. This is clearly illustrated in Fig. 2 of the drawings, wherein the perforated areas within the dashed lines **38** are shown in superimposed relationship with the areas of the liner lamination side of the completed blank to which the adhesive is applied for the purpose of adhering overlapped parts of the blank together as the blank is formed into a package. The purpose of thus marginally spacing the outer boundaries of the perforated areas of the lining material back from the boundaries of the blank to which adhesive is applied during the package forming operation, is that of insuring a continuous adhesive seal along these marginal strips which separate the perforated lining material areas from the inside of the formed package. This seal serves the purpose of rendering the package sift proof and preventing a liquid with which the package may be filled from penetrating the outer backing material **10** by way of the perforation holes.

In accordance with another feature of the invention, the lining material lamination **11** of the blank is not adhered to the backing material lamination **10** within the strips defined by the margin lines **35** on either side of each score line, and the surfaces of the backing material **10** exposed through the perforations **37** are not covered with the adhesive layer **9**. Preferably the margin

lines 35 are spaced from the edges of the adjacent score lines a distance which may range from one-sixteenth to one-eighth of an inch. The purpose of not adhering the lining material 11 to the backing material 10 over these zones is to render those portions of the lining material which overlie the score lines of the backing material freely movable relative to the backing material and hence to prevent these portions of the lining material from being subjected to sharp bending and excessive strains as the completed blank is folded into package form. The purpose of not adhesively coating the areas of the backing material which register with the lining material perforations 37 in laminating the two materials together is that of preserving clean backing material surfaces to which adhesive material may be applied to the blank as a preliminary step in forming the completed blank into a package. In other words, it is not desirable to coat these surfaces of the backing material with the adhesive employed in the laminating step, allow these adhesive coated surfaces to set, and then re-coat the same surfaces with a second adhesive material during the package forming operation, for the reason that it is difficult to obtain a satisfactory bond between the adhesive material applied during the package forming step and the adhesive material applied immediately before the laminating step.

In accordance with still another feature of the invention, certain edges of each blank are impregnated with an air-drying sealing material or compound over only those edges thereof which are adapted to be exposed to the package contents when the blank is formed into a package and filled. As will be evident from the following description of the mode of forming the blank into a package, only those edges identified at 30e in Fig. 1 of the drawings are adapted to be exposed to the package contents and hence require impregnation with a sealing material to prevent liquid penetration of the backing material lamination 10. Preferably, an air-drying liquid sealing compound, such, for example, as Glyptal, having good qualities of stock penetration, is employed in sealing the blank edges. The seal structure is illustrated in exaggerated form in Fig. 11 of the drawings. As there shown, the sealing material penetrates the backing material 10 for an appreciable distance inward from the edge 30e and effectively forms a clip 30f which binds the edge of the lining material 11 to the adjacent edge of the backing material 10 to prevent separation of these two materials along the edges 30e of the blank.

In order to adhere certain panels of the top closure portion 42 of the blank together as the blank is formed into a package, a thermoplastic adhesive material is applied to the strip areas 39a and 39b disposed upon opposite sides of the blank after the materials 10 and 11 of the blank are laminated together. As shown in Figs. 2 and 3 of the drawings, these areas coincide with each other along opposite sides of the end closure parts 60, 61, 62, 63 and 64. Certain of the outer surfaces of the blank, such, for example, as the surface areas 31 and 32, may, if desired, be used for printing identification or advertising material. Such printing is preferably performed on the backing material 10 in advance of laminating this material with the lining material 11.

In forming the described blank into a package in the manner disclosed and claimed in applicant's copending application Serial No. 612,177 filed August 23, 1945, now Patent No. 2,480,176, the blank is first fed through an adhesive stencilling device, wherein the liner lamination side thereof is stencilled with an adhesive coating over the stippled areas of the blank as shown in Fig. 2 of the drawings. As previously pointed out, the boundaries 38 within which the liner perforations are confined are marginally spaced inward from the boundaries of the areas to which the adhesive coating is applied in order to insure adhering of an unperforated portion of the lining material to the backing material or another unperforated and facing portion of the lining material incident to the package forming operation. After the adhesive coating is applied to the indicated surfaces of the blank, it is delivered to the forming facilities of a package forming machine where the side and bottom closure structures are made. The first operation performed in this machine is that of wrapping the blank around a forming mandrel to bend the same along the score lines 33a in the manner illustrated in Fig. 6 of the drawings until the adhesively perforated lining material side of the blank parts 67, 65, 72, 47 and 53 is brought into facing engagement with the backing material side of the parts 66, 59, 71, 46 and 52 respectively. By a suitable pressure application, the identified facingly engaged parts of the blank are obviously adhered together, thus completing formation of the side and end wall structure of the package. It will be understood that the backing material laminations of the overlapped parts are directly adhered together through the perforations 37 in the lining material lamination disposed between the two overlapped parts of the backing material.

In forming the bottom closure structure of the package, the two-ply end panel consisting of the adhesively connected blank parts 52 and 53 is first pushed inwardly around the bottom score line 33b into the plane of the bottom end of the package, following which the bottom side panel 49 is folded inwardly along the same score line 33b until it facingly engages the backing side of the panel 54a. Incident to these folding operations, the wing parts 54 and 55 of the blank are drawn in with the bottom closure panel 54a to bring the lining material sides thereof into facing engagement with the lining material sides of the end flap members 50 and 51, respectively. This is the first point in the package forming operation at which two lining material sides of the blank are brought into facing engagement and adhered together. However, and as previously pointed out, the lamination perforations 37a, and 37d are positioned to register respectively with the liner perforations 37b and 37e. Accordingly, an adhesive bond may be formed through these openings between the facing surfaces of the backing material segments which are exposed to each other through these openings. In similar manner, the lining material perforations 37c and 37f are brought into registry with the lining material perforations 37b and 37e so that the backing material laminations of the wings 56 and 57 may be adhered directly to the backing material parts of the end closure members 50 and 51.

Following the described operation of folding the bottom end panels 54 and 49 into place, the end flaps 50 and 51 may be folded over and adhered to the backing material side of the end panel 49. Here again, the perforations in the lining material lamination of the end flaps 50 and 51 insures direct bonding of the backing material lamination of these flaps to the backing material

lamination of the panel 45. The bottom end closure structure is completed by bringing a pressing head into engagement with this structure to press the same against the forming mandrel and thus produce an efficient adhesive material bond between all facing parts of the structure. As explained in applicant's prior patent, referred to above, by recessing the end panels 52 and 53 along the opposite edges thereof to provide spaces for accommodating the wing parts 54, 55, 56 and 57, a bottom closure structure is obtained which has substantially uniform multi-ply thickness throughout the entire area thereof. Further, provision of these recesses to accommodate the identified wings of the blank insures that these wings will not interfere with uniformly efficient bonding of the facingly engaged parts of the blank bottom closure portion 41 together as pressure is applied to the overlapped parts of this blank portion to complete the bottom closure operation.

In closing the top of the package, the upper opposed end wall parts 68 and 69 are pushed toward each other to bend the mouth closure parts 60 and 64 toward the overlapped mouth closure parts 59 and 65, and similarly to move the mouth closure panels 61 and 63 inwardly toward the mouth closure side panel 62. Concurrently, the mouth closure parts 62 and 56 and the overlapped mouth closure parts 71, 72, 59, and 65 are moved toward each other. As this operation is completed, the panels 60 and 61 are respectively moved into facing engagement with the panels 59 and 62, with the lining material perforations 37*o* in registry with the lining material perforations 37*n* and similarly with the lining material perforations 37*p* in registry with the lining material perforations 37*s*. Concurrently the mouth closure panels 63 and 64 are respectively moved into facing engagement with the panels 62 and 65. Here also, the lining material perforations 37*k* and 37*h* are respectively positioned to be brought into registry with the lining material perforations 37*m* and 37*g*. Further, those perforations 37 disposed in the center zone of the panel 62 are brought into registry with the perforations 37*s* disposed at the left end portion of the top closure panel 59. Thus, direct adhesive bonding of the backing material laminations of the overlapped mouth closing members 59 to 65, inclusive, may be obtained after these panels are brought into facing engagement in the manner described. The final forming operation is that of folding the flap 68 down over the mouth closure panel 62 to bring the perforated lining material side of this flap into facing engagement with the thermoplastic adhesive coated area 39*b* of the mouth closure panel 62. Heat and pressure may now be applied to the facingly engaged and overlapped mouth closure panels to effect melting of the thermoplastic adhesive materials coating the areas 39*a* and 39*b* and thus produce the desired sealing engagement between these panels of the blank. After the thermoplastic adhesive materials have cooled and reset, the pressure may be removed, leaving the engaged parts of the top closure structure bonded together. Thus, formation of the package is completed.

From the preceding detailed description of the packaging blank 30 and the manner of forming the same into a closed package, it will be understood that the lining material perforations 37 are in each and every instance so positioned as to permit direct adhesive bonding of overlapped backing material parts to each other. At the same time, in each case where a lining material surface is brought into overlapped facing engagement with another lining material surface or with a backing material surface, the two engaged surfaces are adhered together throughout the areas of engagement. The last-mentioned adhesive bonds, i. e., those adhering a lining material surface of the blank either to a lining material or to a backing material surface, serve completely to seal the package internally against leakage through the lining material lamination. On the other hand, the adhesive bonds provided through the lining material perforations 37 effectively function as rivets between the outer backing material laminations which so strengthen the completed package structure as to prevent separation of the parts adhered together and more important to prevent failure of the adhesive material layer which bonds certain areas of the lining material to each other and also to overlapped areas of the backing material.

It will also be apparent from the preceding explanation that since the lining material 11 is not adhered to the backing material 19 over narrow strip areas centrally embracing the score lines 33, the folding or bending operations required in forming the blank into the package may be performed with minimum likelihood of perforating the lining material at one or more points along these lines inside the package. Thus, the lining material which overlies the score lines is entirely free to move independently of the adjacent segmental areas of the backing material and hence is not subject to the same tension and compressional strains as are imposed upon the backing material in carrying out the described folding operations. Further, all of the edges 30*e* which are exposed to the contents of the completed package are completely sealed against liquid penetration by the edge seal 30*f*. Moreover, the boundaries 38 within which the lining material perforations 37 are confined are so marginally spaced from the boundaries of the adhesive material coating employed in forming the blank into a package that each lining material perforation is effectively sealed off by this adhesive material from the inside of the completed package. As a result of these features, the inwardly disposed lining material lamination of the completed package is completely sealed independently of the backing material lamination. In other words, the desired end is achieved of relying solely upon the lining material lamination to completely seal the package and relying upon the backing material lamination to supply the strength and rigidity to the package structure necessary to protect the sealed container afforded by the lining material lamination.

While one embodiment of the invention has been disclosed, it will be understood that various modifications may be made therein which are within the true spirit and scope of the appended claims.

I claim:

1. A laminated carton, comprising a paper lamination provided with score lines dividing the blank into panels, a non-porous liner lamination covering one side of said paper lamination and provided with parts which are in, facing engagement, at least a pair of said parts of said liner lamination having openings therein which are in registry, whereby the overlapped panels of said paper lamination which are covered by said liner lamination parts are exposed to each

other through said registering openings, an adherent securing said liner lamination to one side of said paper lamination only over areas marginally spaced from said score lines and in areas of said paper lamination not exposed by said perforations, and an adhesive extending through said registering openings and adhering together those portions of said paper lamination which are exposed through said registering openings.

2. A laminated carton comprising a paper lamination and a non-porous liner lamination adhered to said paper lamination and having the same configuration as said paper lamination, said carton having a first panel, a second panel, a third panel, a fourth panel and a connector section, said panels and connector section being divided from each other by score lines, said connector section lying flatwise against said first panel with the liner lamination of said connector section disposed between the paper laminations of said first panel and said connector section and the liner laminations of said connector section having openings therethrough over the area thereof to permit the paper laminations of said first panel and connector section to be adhered together through said openings, one edge portion of said carton having flaps for alternate ones of said panels, said flaps being provided with webs along the opposed edges thereof, the intervening panel being provided with an end section, said flaps being folded to lie flat against said end section with the liner laminations of said webs and end section in facing engagement and disposed between the paper laminations thereof, and the liner laminations of said webs and said end section being provided with openings therethrough which are in registry, said paper laminations of said webs being adhered to the paper lamination of said end section through said registering openings.

3. A laminated carton comprising a paper lamination and a non-porous liner lamination adhered to said paper lamination and having the same configuration as said paper lamination, said carton having a first panel, a second panel, a third panel, a fourth panel and a connector section, said panels and connector section being divided from each other by score lines, said connector section lying flatwise against said first panel with the liner lamination of said connector section disposed between the paper laminations of said first panel and said connector section and the liner laminations of said connector section having openings therethrough over the area thereof to permit the paper laminations of said first panel and connector section to be adhered together through said openings, certain of said panels being provided with end portions which are adapted to be facingly engaged with the liner laminations thereof disposed between the paper laminations thereof, and the liner laminations of said panel end portions being provided with openings therethrough which are in registry, said paper laminations of said panel end portions being adhered together through said registering openings.

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