Sept. 5, 1961 F. LANGE 2,998,907

COLLAPSIBLE WRAPPED FOLDING BOX STRUCTURE

Filed May 21, 1952

FIG. 1

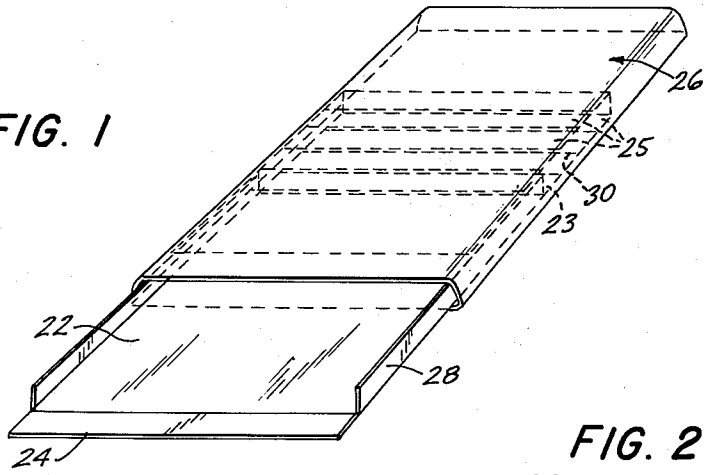


FIG. 2

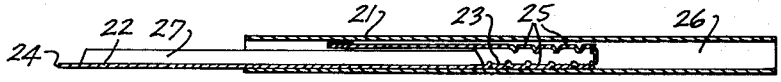


FIG. 3

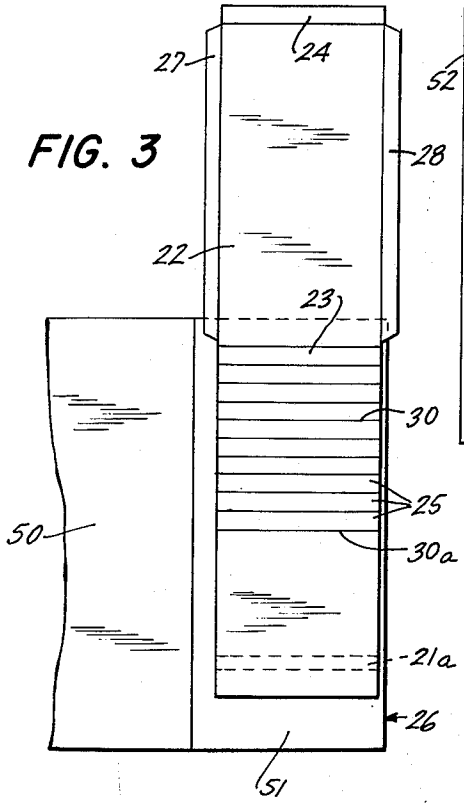
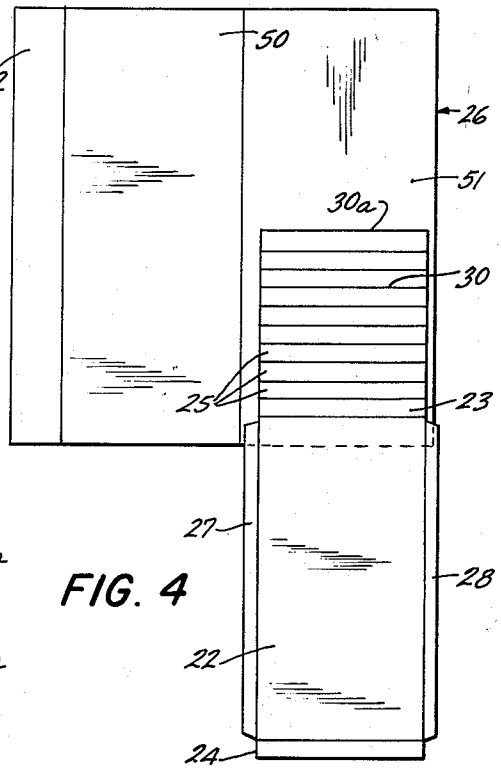


FIG. 4



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COLLAPSIBLE WRAPPED FOLDING BOX STRUCTURE

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The present invention relates to a collapsible wrapped folding box structure which can be used particularly as a container for foodstuffs such as cookies, candies, etc., cigarettes, or, if made in larger size, as a bag for concrete or the like.

It is an object of the present invention to provide a box structure of the type described which can be easily brought from the collapsed condition into the erected box structure.

It is a further object of the present invention to provide a box structure which can be pushed into, and out of, a pliable member forming the outer wrapping of the box.

A collapsible wrapping folding box structure according to the invention comprises an inner shape-determining collapsible foldable box member of relatively stiff sheet material composed of a plurality of wall elements connected to one another and adapted to form a complete inner former box structure, and an outer pliable wrapping sheet member having a part secured with its inner face to the outer face of one of the wall elements of the inner shape-determining collapsible foldable box member, so that the pliable wrapping sheet member might be folded about the inner box member when the same forms the complete inner box structure.

The preferred embodiment of the present invention comprises an inner shape-determining collapsible foldable former box member of relatively stiff, but foldable sheet material composed of a plurality of substantially rectangular wall elements hingedly connected to one another and adapted to form a complete inner box structure, and an outer pliable wrapping foil member having a part secured to one of the rectangular wall elements at the one end of the inner foldable former box member, so that the pliable wrapping foil member might be folded about the inner box member when the same forms the complete inner box structure and entirely envelopes the same.

A wrapped box structure according to a preferred embodiment comprises, a former box constituted by a rectangular former sheet of relative stiff foldable sheet material having two parallel overlapping end portions and an intermediate portion between the same, the intermediate portion having a plurality of parallel transverse equidistant creases normal to the length of the former sheet, and the end portions being spaced from each other a distance substantially equal to the distance which adjacent creases of said intermediate portion are spaced from each other so that the former box has a shape corresponding substantially to that of a rectangular prism the thickness of which is equal to the distance which adjacent creases of said intermediate portion are spaced from each other; and a wrapping sheet of pliable material secured to one of said end portions of said former sheet, and wrapped about said former box.

Preferably, side walls are secured to one end portion and have a height corresponding to the spacing of the transverse creases.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view of another embodiment of the present invention;

FIG. 2 is a sectional side elevation of the box structure shown in FIG. 1;

FIG. 3 is a plan view of a composite blank used for making the box structures shown in FIGS. 1 and 2; and

FIG. 4 is a similar plan view of the composite blank with one blank element partly folded.

It should be understood that the collapsible foldable box member consists of relatively stiff sheet material such as cardboard whereas the pliable wrapping foil member consists preferably of paper impregnated with or covered by a thermoplastic synthetic material which is water- and steam-resistant.

Referring now to FIGS. 1 to 4, the blank of the inner shape-determining collapsible foldable box member consists of a plurality of rectangular wall elements hingedly connected to one another, the wall elements including two end wall portions **21** and **22**, the strip-shaped parts **25**, the strip-shaped part **23** forming in the closed position the bottom of the complete inner box structure, and the lid portion **24**. The end wall portion **21** is much smaller than the end wall portion **22**. The strip-shaped parts **25** and **23** are hinged by parallel score lines or creases **30**. The strip-shaped parts **25** have dimensions equal to those of the strip-shaped bottom part **23** so that the creases are equidistant. The end portion **21** is secured to the inner face of a part **51** of the outer pliable wrapping foil member **26**. The end wall portion **22** is provided with lateral strip-shaped portions **27** and **28** hingedly connected, respectively, to the lateral edges of the end wall portion **22**. The said lateral strip-shaped portions **27**, **28** form the narrow side walls of the erected inner box structure formed by the collapsible foldable former box member **21** to **25**.

As will be seen from FIGS. 1 and 2, the collapsible former box member forms within the outer pliable wrapping foil member **26** a container having a height small in comparison to the length and width thereof and which can be adapted to different sizes of chocolate bars, or cigarettes, or the like to be packed within the box structure. Furthermore, this structure is specially adapted for packing chocolate bars having an upper surface of smaller area than the lower surface thereof so that their cross-section forms a trapezoid as indicated in FIG. 2. Also, the chocolate bar can be easily moved into or out of the wrapping foil member **26** by pulling or pushing the end wall member **22** so that it projects more or less from the wrapping foil member **26** as shown in FIGS. 1 and 2. In shifting the end wall member **22** in this way the strip-shaped portions **25** form one after the other the bottom of the complete inner box structure, the strip-shaped part **23** lying flush with the end wall portion **22** as indicated in FIGS. 1 and 2.

The pliable wrapping foil member includes a substantially rectangular part **50** of equal dimensions as the part **51** to which the main part **21** is glued and furthermore, a narrower portion **52** which serves for completing the sleeve-shaped wrapper enveloping the inner former box erected of parts **21** to **28**. The part **52** is glued to the outside of the part **51**.

The lateral strip-shaped portions **27**, **28** extend in the erected inner box structure as far as the end portion **21** to which the wrapping sheet **26** is secured at **21*a*** as will be clearly seen from FIG. 2. FIG. 3 shows the composite blank including the pliable wrapping sheet and the stiff sheet of the former box. FIG. 4 shows the blank of the former box folded over about the last crease **30*a***.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of folding box structures differing from the types described above.

While the invention has been illustrated and described as embodied in a collapsible wrapped folding box structure, it is not intended to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. A composite blank adapted to be formed into a box comprising, in combination, an elongated substantially rectangular inner blank of relatively stiff foldable sheet material, said inner blank having two end portions and an intermediate portion between the same, said intermediate portion having a plurality of parallel transverse creases normal to the length of said inner blank and being spaced substantially equidistant from each other so that said end portions may be brought into such overlapping relationship with each other that said end portions are substantially parallel to each other and are spaced from each other a distance substantially equal to the distance which adjacent creases of said intermediate portion are spaced from each other, said inner blank, when said end portions thereof are in such overlapping relationship, forming a box at least a portion of one side wall of which box is constituted by one of said end portions, at least a portion of the opposite side wall of which box is constituted by the other of said end portions, and a base wall of which box which joins said side walls is constituted by a part of said intermediate portion which lies between two adjacent creases so that the box has a shape corresponding substantially to that of a rectangular prism the thickness of which is equal to the distance which adjacent creases of said intermediate portion are spaced from each other; and an outer blank of pliable material firmly secured to that face of one of said end portions of said inner blank which, when the latter is folded so as to form a box, is an outer face of such box, so that said outer blank may be wrapped about said inner blank when the latter is folded so as to form a box, and may entirely envelop such box.

2. A composite blank adapted to be formed into a box comprising, in combination, an elongated substantially rectangular inner blank of relatively stiff foldable sheet material, said inner blank having two elongated end portions, two elongated side portions on both sides of one of said end portions, respectively, and capable of being bent relative to said one end portion in such a manner that said side portions are opposite and facing each other and an intermediate portion having a plurality of parallel transverse creases normal to the length of said inner blank and being spaced from each other a distance substantially equal to the width of said side portions so that said end portions may be brought into such overlapping relationship with each other that said end portions are substantially parallel to each other and are spaced from each other a distance substantially equal to said width of said side portions, said inner blank, when said end portions thereof are in such overlapping relationship and when said side portions are opposite and facing each other, forming a box at least a portion of one end wall of which box is constituted by one of said end portions, at least a portion of the opposite end wall of which box is constituted by the other of said end portions, two opposite side walls of which box are constituted by said side walls, respectively, and a base wall of which box which joins said end walls is constituted by a part of said intermediate portion which lies between two adjacent creases so that the box has a shape corresponding substantially to that of a rectangular prism the thickness of which is equal to the width of said side portion and consequently to the distance which adjacent creases of said intermediate portion are spaced from each other; and an outer blank of pliable material firmly secured to that face of one of said end portions of said inner blank which, when the latter is folded so as to form a box, is an outer face of such box, so that said outer blank may be wrapped about said inner blank when the latter is folded so as to form a box, and may entirely envelop such box.

3. A wrapped box structure comprising, in combination, a former box constituted by a single elongated substantially rectangular former sheet of relative stiff foldable sheet material having two end portions and an intermediate portion between the same, said intermediate portion having a plurality of parallel transverse creases normal to the length of said former sheet and being spaced substantially equidistant from each other, said end portions being arranged in such overlapping relationship with each other that the same are substantially parallel to and face each other and are spaced from each other a distance substantially equal to the distance which adjacent creases of said intermediate portion are spaced from each other so that said former sheet forms a box at least a portion of one side wall of which box is constituted by one of said end portions, at least a portion of the opposite side wall of which box is constituted by the other of said end portions, and a base wall of which box which joins said side walls is constituted by a part of said intermediate portion which lies between two adjacent creases, said former box thus having a shape corresponding substantially to that of a rectangular prism the thickness of which is equal to the distance which adjacent creases of said intermediate portion are spaced from each other; and a wrapping sheet of pliable material firmly secured to the outer face of one of said end portions of said former sheet and wrapped about said former box.

4. A wrapped box structure comprising, in combination, a former box constituted by a single elongated substantially rectangular former sheet of relative stiff foldable sheet material having two elongated end portions, two elongated side portions on both sides of one of said end portions, respectively, and an intermediate portion between said end portions, said intermediate portion having a plurality of parallel transverse creases normal to the length of said former sheet and being spaced from each other a distance substantially equal to the width of said side portions, said end portions being arranged in such overlapping relationship with each other that the same are substantially parallel to and face each other and are spaced from each other a distance substantially equal to said width of said side portions and said side portions being arranged in such overlapping relationship with each other that the same are opposite and face each other so that said former sheet forms a box at least a portion of one end wall of which box is constituted by one of said end portions, at least a portion of the opposite end wall of which box is constituted by the other of said end portions, two opposite side walls of which box are constituted by said side walls, respectively, and a base wall of which box which joins said end walls is constituted by a part of said intermediate portion which lies between two adjacent creases, said former box thus having a shape corresponding substantially to that of a rectangular prism the thickness of which is equal to the width of said side portions and consequently to the distance which adjacent creases of said intermediate portion are spaced from each other; and a wrapping

sheet of pliable material firmly secured to the outer face of one of said end portions of said former sheet and wrapped about said former box.

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