

Oct. 7, 1952

W. A. RINGLER

2,613,025

PACKAGE FOR FROZEN FOODS AND THE LIKE

Filed Jan. 2, 1947

2 SHEETS—SHEET 1

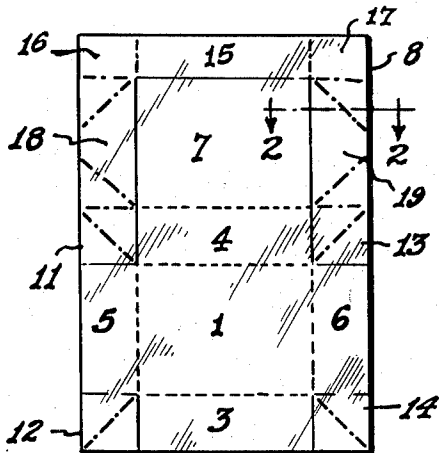


FIG. 1.

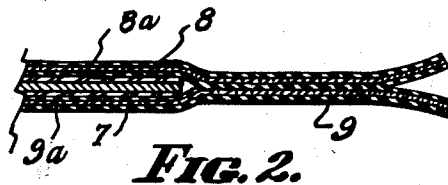


FIG. 2.

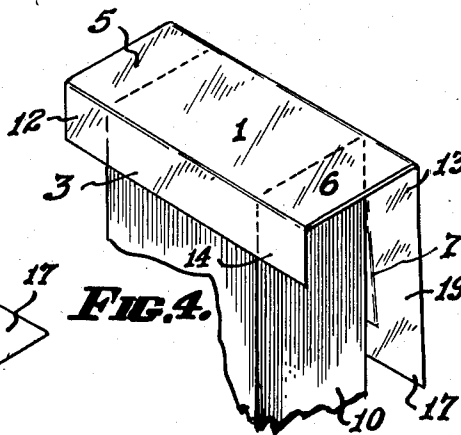


FIG. 4.

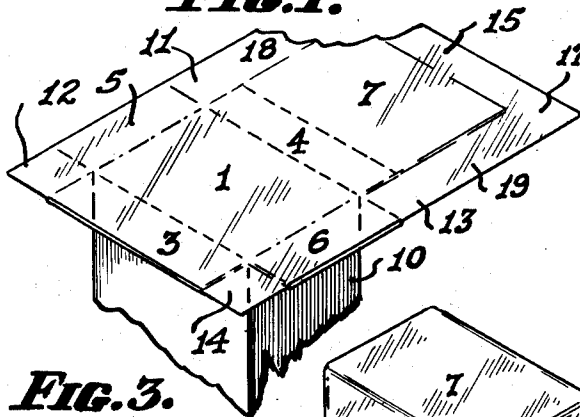


FIG. 3.

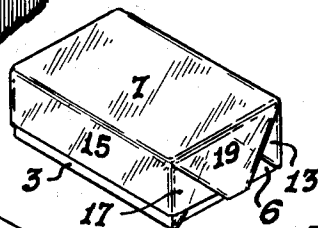


FIG. 8

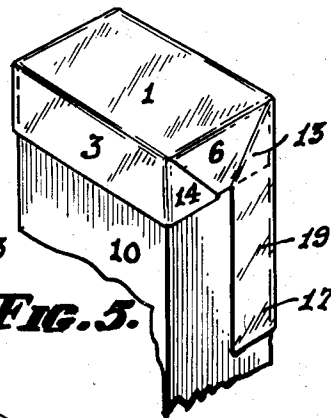


FIG. 5.

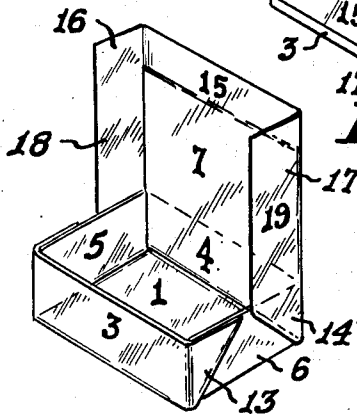


FIG. 6.

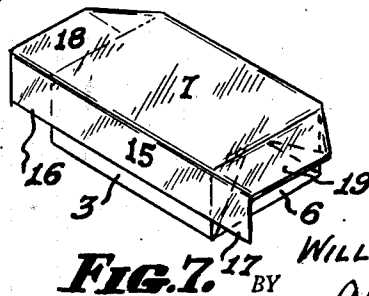


FIG. 7.

INVENTOR.
 WILLIAM A. RINGLER
 BY *Allen & Allen*
 ATTORNEYS.

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2 SHEETS—SHEET 2

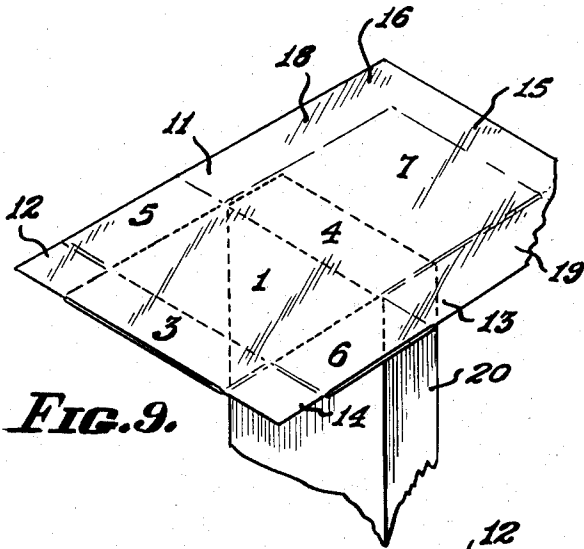


FIG. 9.

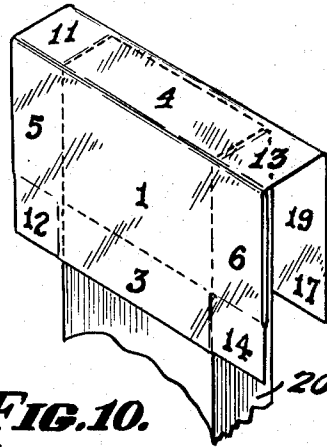


FIG. 10.

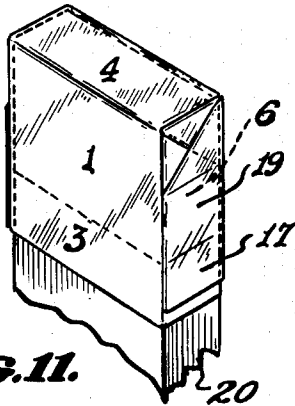


FIG. 11.

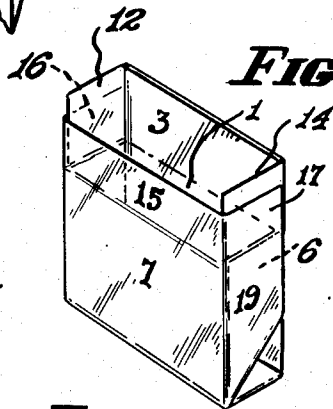


FIG. 12.

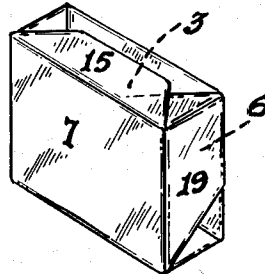


FIG. 13.

INVENTOR.
WILLIAM A. RINGLER.
BY *Allen & Allen*
ATTORNEYS.

UNITED STATES PATENT OFFICE

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PACKAGE FOR FROZEN FOODS AND THE LIKE

William A. Ringler, Wayne, Pa., assignor to The
Gardner Board and Carton Co., a corporation
of Ohio

Application January 2, 1947, Serial No. 719,889

2 Claims. (Cl. 229-31)

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The principal object of this invention is the provision of a sealed package, and a structure from which it may be made, having novel advantages of simplicity, economy, and practicability.

It is an object of the invention to provide a packaging structure of one-piece character as furnished to the user, and a structure which may be shipped to him in flat form.

It is an object of the invention to provide a package structure of one-piece character in which are combined the strength advantages of the paperboard carton and the sanitary and protective advantages of a liner.

It is an object of the invention to provide simple and inexpensive modes of manufacture for such structures.

It is an object of the invention to provide a package structure which may be set up, filled, closed and sealed by the user in a simple fashion and without the use of elaborate mechanism or tools; and in this connection it is a further object to provide a package structure which may be set up, filled, closed and sealed by hand operations aided only by a form or mandrel and means for applying heat, although my structure is also adapted for mechanization.

These and other objects of the invention which will be set forth hereinafter or will be apparent to one skilled in the art upon reading these specifications, I accomplish by those procedures and in those articles of which I shall now describe an exemplary embodiment in the form of a package for frozen foods, it being understood, however, that my packaging structures and methods are of general application. Reference is made to the accompanying drawings wherein:

Figure 1 is a plan view of my packaging structure in the form in which it may be sent to the user.

Figure 2 is a partial sectional view taken along the line 2-2 of Figure 1.

Figures 3 to 6 are perspective views illustrative of successive steps in the operation of setting up the package for the receipt of contents.

Figure 7 is a perspective view of an initial step in closing the package.

Figure 8 is a perspective view of the finished, closed and sealed package.

Figures 9 to 11 are perspective views illustrative of successive steps in another mode of setting up the package.

Figure 12 is a perspective view of the set-up package ready to receive contents.

Figure 13 is a perspective view of the finished, closed and sealed package.

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Briefly, in the practice of my invention, I combine a boxboard carton blank with one or more sheets of protective film-like substance, the sheets preferably being adhered to the blank throughout its entire area. The boxboard blank, however, unlike the usual blanks, consists merely of the panels forming the enclosing walls of the structure and is devoid of connecting means between the edges of wall panels which, in the erected structure, lie at an angle to each other with said edges contiguous. In other words, the blank is of such character that by itself it would not form a self-sustaining structure in the erected form.

The sheet or sheets of protective film are larger in area than the blank, and not only give protection to the contents of the package and protect the boxboard blank from straining or weakening due to internal or external conditions of moisture or the like, but serve as the connecting means between the contiguous but otherwise free edges of blank panels which lie at right angles to each other in the erected structure. It is preferable to sandwich the blank between sheets of the protective film.

I am not restricted to any particular type of sheet material for what I have called the protective film. Paper, glassine or similar substance may be employed with suitable adhesives. I prefer the amorphous films of commerce, of which there are many. A film with heat-sealing characteristics is desirable. It may be pointed out that moisture-proof cellophane, which has a thin, external coating of thermoplastic substance, is heat-sealable to itself though not to boxboard, and is an excellent material to use in the practice of my invention.

In Figure 1, dashed lines are used to indicate scoring or lines of articulation in the boxboard blank. Dot-dash lines indicate ultimate fold lines in the sheet material. The boxboard blank of the exemplary embodiment consists of a bottom panel 1, a front wall 3, a back wall 4, end walls 5 and 6 and a top 7. These members are in articulation along the score lines shown. I employ in connection with this blank sheet material which is larger in area. A rectangular sheet 8 is shown in Figure 1 and will be understood to cover and preferably to be solidly adhered to the entire upper surface of all parts of the blank. It extends substantially beyond all free edges of the top panel 7 and forms connecting webs between the adjacent free edges of the front, back and end walls.

A single sheet 8 may be employed, and for various purposes may be associated with either side of the blank; but as indicated I prefer to

enclose the blank between two sheets 8 and 9 of suitable material as will be clear from Figure 2. Adhesive joining the blank to the sheets 8 and 9 is indicated in this figure at 8a and 9a. The sheets have been illustrated as moisture-proof cellophane, suitable shading showing the cellulosic base film and the thin, external coatings of moisture-proof thermoplastic characteristic of that product.

This may be conveniently accomplished by coating the boxboard blank or the sheets with adhesive and assembling them together. If the adhesive is thermoplastic the assembly may then be subjected to heat and sufficient pressure to cause the parts to conform; and the heat will not only produce adhesive union of the sheets to the blank but will cause the sheets to adhere to each other off the edges of the blank, if the sheets are made of heat-sealing material or of moisture-proof cellophane as set forth above. Where the sheets are capable of heat-sealing, it is not necessary that they be adhered together off the edges of the blank in the article of Figure 1 since such adhesion will be produced during the final closure of the package. But if the sheets do not have this quality, then one or the other should be coated on the inner surface with a thermoplastic adhesive.

The boxboard blank or the sheets may be printed as desired, and where the outer sheet at least is of transparent film a highly attractive appearance is attained by printing the blank. Any of the panels of the blank may be provided with a window opening or cut-out, which, covered with the transparent sheets, will provide a package in which the contents will be visible for inspection without opening the package.

The assembly illustrated in Figure 1 is the article in the form shipped to the packager. The operations involved in setting up and closing the package as hereinafter described are operations which may be performed by machine; but they may also be performed by hand. I provide a mandrel 10 having a top surface of substantially the same dimensions as the bottom panel 1 of the boxboard blank. The blank is placed on the mandrel as indicated in Figure 3 with this panel against the said top surface, whereupon the front wall 3 and back and top wall portions of the package are bent over against the respective sides of the mandrel as in Figure 4. When the end walls 5 and 6 are bent over against the respective ends of the mandrel, the connecting webs 11, 12, 13 and 14 will fold bellows-wise forming triangular ears. These are bent over against the end walls and adhered thereto, as may be done where sheets 8 and 9 are of moisture-proof cellophane, Pliofilm, or other heat-sealable substance, simply by pressing with a hot iron. If the sheets are not heat-sealable, or if only one sheet is used and lies on the inner surface of the boxboard blank so that it becomes necessary to seal the ears directly to a boxboard surface, adhesive may be applied at this stage. The mandrel furnishes a support against which pressing may be done.

The set-up package ready to receive contents is shown in Figure 6. When it has been filled, the top panel 7 is bent over in place, and the extending flange 15 of sheet material is brought against and sealed to the front wall 3. The contents will usually furnish sufficient support for this; but additional support may be obtained by engaging the edge of the wall, against which pressure is to be exerted in sealing, over the edge of the adjacent wall. In this instance, the

top panel 7 is depressed slightly to bring its edge behind the edge of the front wall 3 during the sealing of the flange 15.

Next, corner portions 16 and 17 of the sheet material are folded inwardly and adhered against the end walls 5 and 6 of the package, and finally the side flanges 18 and 19 are folded down and sealed against the end walls. The ultimate closed and sealed condition of the package is shown in Figure 8.

Another mode of setting up the exemplary structure is shown in Figures 9 to 12. A mandrel 20 is provided having a top surface substantially the same in dimensions as the rear wall 4 of the boxboard blank. The package structure is laid on the mandrel as shown in Figure 9. The top wall 7 and the bottom 1 together with the front wall 3 are bent over respectively against the sides of the mandrel as in Figure 10. The end walls 5 and 6 of the blank are now folded over against the end portions of the mandrel. This folds the web portions 11 and 13 diagonally. They are then folded downwardly, after which the side flanges 18 and 19 along the top 7 are folded in, the relationship of parts now appearing as in Figure 11. The parts are adhesively joined by heat or otherwise.

The structure may now be taken from the mandrel and upended as in Figure 12. It is ready for filling through a narrow end, as will be evident. After filling, the front wall 3 will be folded down, the web portions 12 and 16 on one end and 14 and 17 on the other will be folded in, and finally the flange 15 will be folded over, the relationship of parts appearing as in Figure 13. A seal will be effected by heat or otherwise as before. Because of the narrowness of the front wall 3 it is easier to bring its edge over the edge of the top 7 to secure support during the sealing of the flange 15.

It will be noted that in my complete structure, the package is maintained in erected condition by the action of the sheet material, which forms the connection between contiguous edges of the front, end, and back walls, and the connection between the edges of the top wall and the end and front walls. The size and shape of the package, including the number and placement of the body walls, forms no limitation on the invention, and may be widely varied.

Other modifications may be made in the invention without departing from the spirit of it. Having thus described my invention in an exemplary embodiment what I claim as new and desire to secure by Letters Patent is:

1. In a package structure for the purposes described, a boxboard blank consisting only of a front wall, a bottom wall, a rear wall, and a top wall in articulation in the order named, and end walls articulated to opposite end edges of said bottom wall, and a sheet of thinner flexible material in adhesive union with said blank, said sheet having a width substantially equal to the combined widths of said bottom wall and said end walls, and having a length somewhat greater than the combined lengths of said front, bottom, rear and top walls, said sheet being positioned so that three side edges thereof substantially coincide with the outer edges of said front wall and said end walls, so as to provide free areas of sheet material extending beyond the end edges of said front wall, said rear wall and said top wall, and an additional free area of sheet material extending beyond the free side edge of said top wall, the areas of sheeting extending beyond the ends of

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said front and rear walls constituting bellows-folding connecting webs serving to connect the otherwise unsecured end edges of the said front, rear and end walls to each other, the areas of sheet material extending beyond the free side edge and the end edges of said top wall constituting a peripheral flange serving to connect the top wall to said front wall and said end walls.

2. The structure claimed in claim 1 in which said boxboard blank is sandwiched between two sheets of said flexible material.

WILLIAM A. RINGLER.

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