ABSTRACT

This disclosure relates to a cover for a group of containers adapted to be formed into a package by wrapping sheet material thereabout. The cover is formed of paperboard having grain with the cover being naturally warpable about the grain axis. The cover further has flaps connected to opposite sides thereof and extending normal to the grain axis with the flaps being foldable out of the plane of the cover to provide the cover with beam strength sufficient to overcome warping of the cover.

5 Claims, 3 Drawing Figures
COVER OF CONTAINER PACKAGE

This invention relates in general to new and useful improvements in container packages, and more particularly to a cover which is applied to a group of containers prior to the formation of a package by wrapping sheet material about the containers and cover.

BACKGROUND OF THE INVENTION

In the normal construction of a shrink pack, a cover may be applied to a group of containers, after which the containers and cover are encased within plastic material and the plastic material shrunk thereabout. Such covers are normally formed of paperboard.

It is recognized that paperboard has a grain axis about which the paperboard will most freely bend. During periods of high humidity, moisture is absorbed in the paperboard with the result that it warps about its grain axis. It will be readily apparent that inasmuch as the cover is merely laid on top of a group of containers, this warpage can frequently prove troublesome both in the maintaining of the relation of the cover to the containers as they are moved toward the packaging station of the packaging machine and to the proper encasement of the cover and containers in the plastic material.

The covers have been customarily formed with the grain running parallel to the rows of containers with which the cover is associated. As a result, even if the cover is provided with flaps along the opposite sides thereof for engaging the containers on opposite sides of the rows, the flaps have no effect whatsoever on the warping of the cover.

In an attempt to obtain a maximum paperboard efficiency and also solve the warpage problem, covers were formed with the paperboard grain extending diagonally of the cover. While this proved to be effective to a certain degree, the covers still had a diagonal warpage with the result that each cover had only aligned contact with the containers to which it was applied and two of the diagonally opposite corners were elevated although the other two diagonally opposite corners were contacting the containers.

SUMMARY OF THE INVENTION

In accordance with this invention, it has been found that if the grain of the cover runs substantially normal to the container rows, the flaps which are disposed at opposite sides of the cover for engagement with the containers at opposite sides of the rows, when bent generally normal to the normal plane of the cover, will give the cover sufficient beam strength to overcome the warpage of the cover and restore it to its normal planar state.

A primary feature of this invention is that in the normal handling of the covers in a packaging machine, the warped covers may be readily accommodated and the flaps are folded prior to the positioning of the cover on a group of containers with the result that at the time of application of the cover to a group of containers, the warped condition of the cover will be substantially eliminated and the cover will lie sufficiently flat on the group of containers so as to be readily transported therewith and to readily have the packaging material placed therearound.

It will be readily apparent from a study of the cover construction that the cover construction maintains its normal outline and the flaps have a dual function as opposed to the previous single function of the flaps.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claimed subject matter, and the several views illustrated in the accompanying drawing.

In the drawing:

FIG. 1 is a perspective view of a cover formed in accordance with this invention and shows the same in a warped condition due to the absorption of moisture thereinto.

FIG. 2 is a fragmentary side elevational view of the upper portion of a group of containers showing in full lines a warped cover applied thereto and in phantom lines the same cover in its unwarped state.

FIG. 3 is a fragmentary top perspective view of the planar cover as applied to a group of containers.

Referring now to the drawing in detail, it will be seen that there is illustrated a cover formed in accordance with this invention, the cover basically being identified by the numeral 5. The cover 5 is formed of paperboard and includes a cover panel 6 which is generally rectangular in outline. The illustrated cover panel 6 is of a size and configuration to overlie six cans C arranged in two rows of three cans each. The cover panel 6 is provided with rounded corners 7 and includes end edges 8 which extend between the adjacent corners 7 and side edges defined by fold lines 9 which also extend between adjacent corners 7. Flaps 10 are hingedly connected to the cover panel 6 along the fold lines 9.

It is to be understood that when the covers 5 are formed, they are of a planar construction with the flaps 10 lying in the same plane as the cover panel 6. It is also to be understood that the surface of the cover 5 which is to be disposed outermost is provided with a decorative coating. This decorative coating in effect shields that surface of the cover 5.

Under normal atmospheric conditions, the entire cover 5 remains planar. However, under conditions of high humidity, moisture is absorbed into the cover 5 through the unprotected surface, that is the interior surface remote from the decorative coating. As the fibers of the paperboard remote from the decorative surface begin to expand, the cover 5 warps about the grain thereof. This warped condition is clearly illustrated in FIG. 1.

It is to be understood that when the cover 5 is formed in the normal manner, that is with the grain of the paperboard thereof extending between the end edges 8, the cover panel 6 would assume an arcuate cross section concavely toward the decorative surface thereof.

It will be readily apparent that the aforesaid warped cover would not seat on the upper ends of the containers C and would rock back and forth about the axis of the row or rows of containers on which the cover is seated. This would make it extremely difficult both to initially accurately position the cover and to retain the cover in position during the movement of the containers to the packaging station. It will also be apparent that the cover would in part interfere with the application of the wrapping material to the containers and cover.
In the hope that undue warpage could be prevented, covers 5 were made with the paperboard grain extending generally diagonal between the corners of the cover panel 6. While this did in some degree reduce warpage, sufficient warpage still occurred which resulted in the same deficiencies mentioned above except that in lieu of the cover rocking about lines parallel to the rows of containers, the cover rocked about a line diagonal to the rows of containers.

When the cover 5 is formed with the grain of the paperboard thereof extending generally normal to the rows of containers, that is between the fold line 9, undesirable warpage still occurred. However, it was discovered that when the flaps 10 were folded to their operative positions generally normal to the plane of the cover 6, a straightening of the cover panel 6 immediately occurred. Since at the time the covers are applied to the containers the flaps 10 are folded to their positions alongside the container bodies, the cover panels 6 are substantially planar at the time of installation of the covers 5 and the covers 5 may not only be readily placed upon the containers, but will also maintain their position thereon inasmuch as the flaps 10 are effective for this purpose.

As is schematically illustrated in FIG. 2, prior to the flaps 10 being folded down into position, the cover panel 6 would assume the arcuate condition illustrated in solid lines if it is warped. However, even if the cover panel 6 is transversely warped as shown in FIG. 2 in solid lines, when the flaps 10 are folded downwardly, the cover panel 6 immediately assumes a substantially planar condition, as is shown in phantom lines.

With reference to FIG. 3, it will be seen that with the cover 5 properly applied to the group of containers, even though it was initially warped, it will snugly engage the containers and retain its position relative to the containers for the formation of a package by wrapping plastic material therearound.

It is to be understood that the changing of the direction of grain of the paperboard from which the cover 5 is formed and the utilization of the beam strength of the folded flaps 10 permits the application of the cover and the formation of wrapped container packages without the prior undesired random stoppage of the machine due to improper positioning of the covers.

While preferred forms and arrangements of parts have been shown in illustrating the invention, it is to be clearly understood that various changes in details and arrangement of parts may be made without departing from the spirit and scope of this disclosure.

What is claimed as new is:

1. A cover for a group of containers adapted to be formed into a package by wrapping sheet material thereabout, said cover including a single planar cover panel for direct overlying engagement with container ends in a generally flat state without prefolding, said cover being formed of paperboard and therefore susceptible to warping of said planar cover panel due to absorption of moisture, said paperboard having a grain with said warping of said cover panel from said planar state being naturally about the grain axis, said cover panel being of a dimension to fully cover containers disposed in at least one row, and said grain axis being normal to the row direction, and said cover including means connected to said cover panel and separate and apart from any interlocking relation between said cover and containers operable when said cover is applied to containers in seated engagement thereon for automatically restoring the planar state of a warped cover panel and causing said cover panel to seat flatly thereon, said cover having a moisture sealing decoration on one surface only thereof, and said warping being in one direction only and concavely of said decoration.

2. The cover of claim 1 wherein said means are in the form of flaps extending along opposite sides of said cover panel normal to the grain axis and being hingedly connected to said cover panel for folding to positions generally normal to the intended plane of said cover panel and providing said cover with beam strength sufficient to overcome warping of said cover panel after said cover has been applied to a group of containers.

3. The cover of claim 2 wherein said flaps are engageable with end portions of container bodies to maintain the general uniformity of a formed package.

4. The cover of claim 1 wherein said cover has decoration on one surface only thereof, said warping is in one direction only concavely of said decoration, and said means are in the form of flaps extending along opposite sides of said cover panel normal to the grain axis and being hingedly connected to said cover panel for folding to positions generally normal to the intended plane of said cover panel after said cover has been applied to a group of containers and providing said cover with beam strength sufficient to overcome warping of said cover panel after said cover has been applied.

5. The cover of claim 4 wherein said flaps are engageable with end portions of container bodies to maintain the general uniformity of a formed package.
UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,693,787 Dated September 26, 1972

Inventor(s) JOSEPH W. DUERR

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

On the Abstract Page, read the assignee as -- GANZ BROTHERS, INC., Bergenfield, New Jersey -- instead of "CONTINENTAL CAN COMPANY, INC., New York, N. Y."

Signed and sealed this 3rd day of April 1973.

(SEAL)
Attest:
EDWARD M. FLETCHER, JR. ROBERT GOTTSCHALK
Attesting Officer Commissioner of Patents