H. DE SMITH.

CARTON.

APPLICATION FILED FEB. 18, 1911.

1,081,724. Patented Dec. 16, 1913.

Fig. 1.

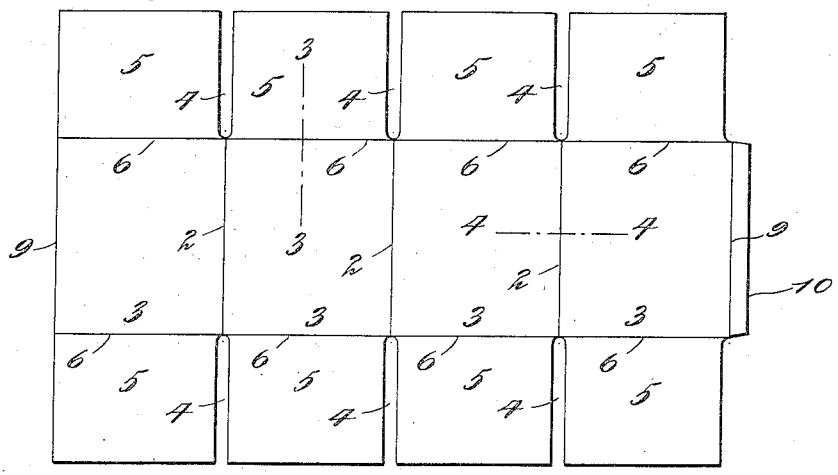


Fig. 2.

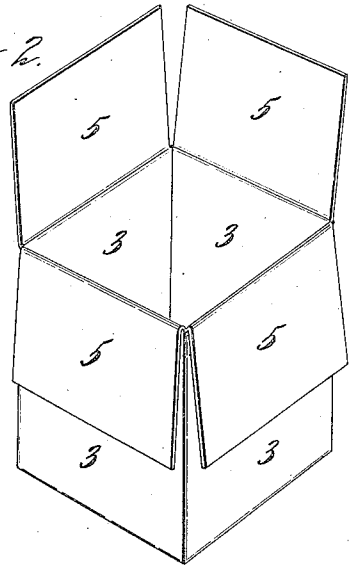


Fig. 4.



Fig. 3.

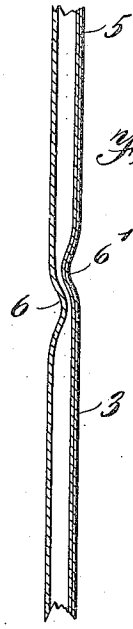




Fig. 5.



Fig. 6.

Witnesses:
Geo. E. Cheney.
H. M. Cassidy.

Inventor
Henry De Smith
By his Attorney
Chas. F. Dana

UNITED STATES PATENT OFFICE.

HENRY DE SMITH, OF ROCHESTER, NEW YORK, ASSIGNOR TO M. D. KNOWLTON COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

CARTON.

1,081,724. Specification of Letters Patent. Patented Dec. 16, 1913.

Application filed February 18, 1911. Serial No. 609,414.

To all whom it may concern:

Be it known that I, HENRY DE SMITH, citizen of the United States, and a resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Cartons, of which the following is a specification.

In the making of cartons from blanks of sheet material, such as paper or fiber board, the blanks are usually creased and slotted on certain predetermined lines to permit of the same being "set up" as cartons of desired form and size; the creases being made to determine the bending lines of the blanks and facilitate the blanks being set up as cartons on those lines, and the slots being made to provide the end flaps or sections which are adapted to be folded upon each other to form the ends of the set up cartons. Heretofore this creasing of the blanks has been done at one side only of the same, and this is sufficient at those lines where the blank is to be bent in only one direction, as at the side and bottom corners of the carton. It has been found in practice, however, that this creasing of the blank at only one side thereof on those lines constituting the bending lines between the side sections and the end flaps or sections at the filling end of the carton, is not sufficient to give the most satisfactory results and for this reason, viz. with a single crease only, located at the inner side of the carton, the end flaps have a tendency to either stand upright or else fold inwardly upon each other and so obstruct the filling opening of the carton as to be a source of serious trouble and delay to the packer, this being particularly true in those cases where the carton is made of stiff and relatively non-flexible material, such for instance as double-faced corrugated paper board, which can not be bent or turned backward to any considerable extent without breaking or so separating the fiber of the board as to either seriously damage the carton or destroy the same. Because of these objections resulting from the creasing of cartons in the manner referred to, it has been the main object of my invention to provide a simple and effective means whereby said objections will be avoided. To this end, I provide the carton with a multiple crease or groove at the bending line between its side and end sections in such manner as to form what practically amounts to a multiple-hinge joint between said sections and thereby permitting of the end sections or flaps to be folded outwardly or inwardly as may be required without liability of breaking or otherwise injuring the carton.

Referring now to the accompanying drawings forming part of this specification, Figure 1 is a plan view of a creased and slotted carton blank embodying my invention. Fig. 2 is a perspective view of a carton set up from the blank shown in Fig. 1. Figs. 3 and 4 are enlarged sectional details, taken on lines 3—3 and 4—4 respectively of Fig. 1. Fig. 5 is a detail view corresponding to Fig. 3, but showing a solid or single board instead of a double-faced corrugated board. Fig. 6 is a detail view illustrating a modified form of the invention.

The cartons or "containers" as they are also known, may be made of any suitable kind of sheet material, such for instance as double-faced corrugated board as shown in Fig. 4, or single board as shown in Figs. 5 and 6.

In the formation of the blanks, it will of course be understood that the creasing and slotting of the same will be varied according to the size and shape of the cartons to be made. In the present case, a blank is shown in Fig. 1 properly creased and slotted for the production of a rectangular carton as shown in Fig. 2, the said blank being formed with a series of single creases 2 at the corner or bending lines between the side wall sections 3, a series of slots 4 at its opposite longitudinal edges and in line with the creases 2 to form the end wall sections or flaps 5, and a series of multiple creases 6—6′ arranged in line substantially intersecting the slots 4 at their inner ends and in position at the bending lines between the said side and end wall sections. These multiple creases, in the present instance shown, each comprises two parallel creases formed in opposite sides of the carton board, as shown in Fig. 3, the outer crease 6′ permitting of the flap being folded downward against the outside of the carton as shown in Fig. 2, so as to be out of the way of the packer in filling the carton, particularly when the carton is placed on a raised bench for the filling or packing operation, and the inner crease 6 permitting of the flap being folded inwardly to close the carton, after the filling or packing operation has been

completed. When employing a solid or single board, as shown in Fig. 5, a multiple creasing of the same from opposite sides thereof will result in substantially the same formation as that just described with reference to Figs. 1, 2, and 3, the creases 7—7′ therein corresponding to the creases 6—6′ of the board shown in Fig. 3.

A creasing of the carton board to obtain the grooved formation at the bending lines thereof as and for the purpose described, is desirable in that the strength of the board is not materially impaired thereby such as would result if the grooves were produced by a cutting or scoring of the board. It will be understood, however, that substantially the same result so far as the bending of the end flaps in opposite directions is concerned, may be obtained by scoring the blank at opposite sides thereof, as indicated at 8—8′ in Fig. 6, in order to obtain the multiple groove formation.

When the carton blank is "set up," its opposite ends 9—9 may be secured together by any suitable means, the blank shown in Fig. 1 being formed with a short extension flap 10 which is adapted to be glued or riveted to the adjoining wall section.

While I have shown and described my invention as an improvement in cartons, I wish it to be distinctly understood that I do not limit the invention to the application of cartons only, as it is obvious that in most any kind of an article made of sheet material, such as paper or fiber board, where it may be desirable to provide a multiple-hinge connection or joint between adjoining parts thereof, the multiple crease or groove herein shown and described for such purpose would be equally applicable as to a carton.

What I claim is:—

A carton formed of bendable material having a single groove in each side thereof, and at opposite sides of a bending line between adjoining sections of the carton, said grooves being parallel and lying close together whereby the portion of the material between the grooves constitutes an adjacent side of each of the grooves and whereby the material may be bent over in either direction.

Signed at Rochester, in the county of Monroe, and State of New York, this 15th day of February, A. D. 1911.

HENRY DE SMITH.

Witnesses:
DENNIS CHURCH,
JOHN G. FLORAEK.