May 2, 1961 E. F. COLLINS 2,982,463

CARTONS

Filed June 20, 1958

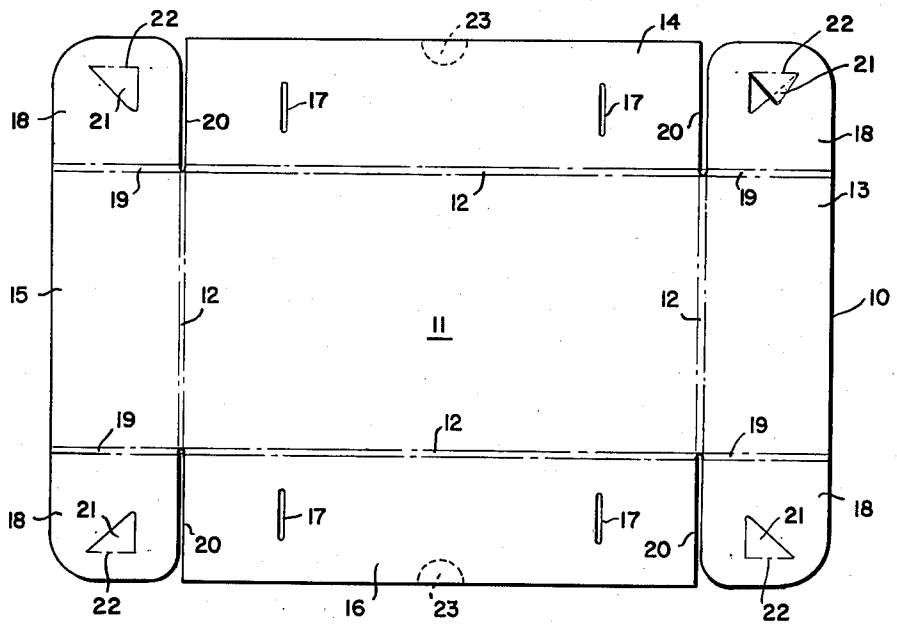


FIG. 1.

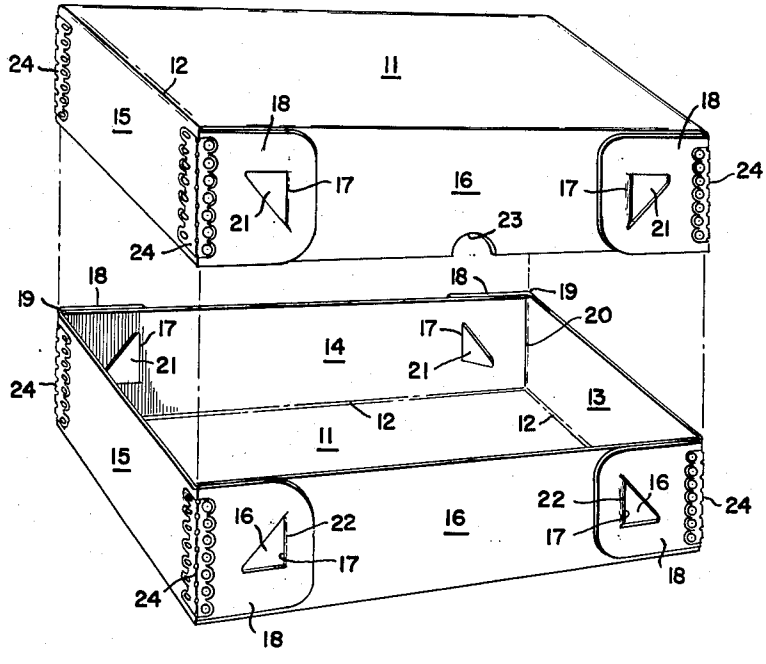


FIG. 2.

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CARTONS

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This invention relates to cartons, and more particularly to cartons formed from blanks.

The carton in accordance with this invention is simple and economical to construct, and at the same time, by virtue of its construction, is efficient and durable in use. It affords maximum protection to contained articles, and is adaptable for use as often as may be desired.

Generally speaking the carton according to this invention may be constructed of any suitable material, for example, heavy paperstock, cardboard, fibreboard, or the like, and is made from a single piece or blank by bending or folding, and securing in position, in a novel manner.

An outstanding feature of the invention is that the respective blanks for the body section and the cover section of the carton may be readily and easily folded into their respective shapes, and likewise, readily and easily unfolded, and thus returned to their original flat condition. An outstanding advantage of the carton construction of this invention is that the carton sections may be manufactured, shipped and/or stored in the flat, easily and quickly assembled for use, and after use, disassembled, shipped and/or stored in the flat, for reassembly and reuse, when desired.

Another outstanding feature of the invention resides in the design and operation of the locking mechanism employed for securing the elements of the blanks together to form the respective carton sections.

Further features of the invention will become apparent to persons skilled in the art from the following detailed description made in connection with the accompanying drawings in which:

Figure 1 is a plan view of a blank for the construction of a carton section embodying the invention; and

Figure 2 is a perspective view of a carton embodying the invention, with the cover section raised to better illustrate both the cover section and the body section.

At **10** in Figure 1 is shown a blank which may be folded either into a body section or into a cover section. In the case of the latter, the central panel **11** customarily has slightly larger dimensions than the corresponding part of the body section, for ease in applying the cover section to the body section, as will be understood.

Blank **10** is preferably creased, grooved or crimped (hereinafter referred to, for convenience, as creased) about the periphery of central panel **11**, as illustrated at **12**, to facilitate folding in bringing the side panels **13**, **14**, **15** and **16** into assembled position. Central panel **11** and side panels **13**, **14**, **15** and **16** are shown as being generally rectangular in shape.

Side panels **14** and **16** which are opposite each other, are each provided with spaced slits **17**, whereas side panels **13** and **15** which also are opposite each other, are each provided on opposite ends with flanges **18** which are preferably generally rectangular, but which may have any other suitable shape. Blank **10** is preferably creased at the base of each flange **18**, as illustrated at **19**, which

conveniently is a continuation of the crease illustrated at **12** at the base of side panel **14**, and at the base of side panel **16**, respectively, to form a continuous straight line.

Each flange **18** is provided with a tab **21**, positioned outwardly from the center of the flange, and shown, for purposes of illustration, generally triangular in shape, e.g. right triangular. Tab **21** is preferably formed in and from flange **18** in any desired manner, such as by cutting, punching or the like. The uncut portion at the base of the tab **21**, and represented by the line **22**, is generally at right angles to its associated slit **17**, when the blank is in the flat. The tip of each tab **21** points inwardly toward the base of its associated flange **18**.

Generally speaking, the distance of each slit **17** from the nearest end **20** of the side panel in which it appears, is approximately equal to the distance between lines **19** and **22** of the associated flange **18**.

When blank **10** is to eventuate into a cover section, it is preferably provided with notches **23**, shown in dotted lines, which notches serve not only for cover section identification purposes, but also as convenient points for engagement by the fingers for removal of the cover section from the body section.

In folding blank **10**, side panels **14** and **16** are first brought to a position at right angles to central panel **11**. Side panels **13** and **15** are then brought into a position at right angles to the central panel **11**. Each flange **18** is then folded inwardly with its end bent slightly backwardly and its tab **21** bent slightly forwardly, so as to cause tab **21** to extend toward its associated slit **17** in side panel **14** or **16**, as the case may be, and tab **21** is then passed through its associated slit **17**. Due to the resilient nature of the heavy paperstock, cardboard, fibreboard, or the like, from which blank **10** is made, each tab **21** snaps back toward its original position, thus holding its associated flange **18** securely in place. The result is shown in Figure 2, both in the case of a cover section and in the case of a body section of a carton.

For purposes of disassembly, the reverse procedure is followed, and blank **10** is thus brought back to its original flat condition.

Assembly and disassembly, as above described, may be repeated as many times as desired.

The corners of both the cover section and the body section are preferably strengthened by means of stays **24** which may be applied in any manner known in the art, and which may be of any desired material, such as metal, plastic, fabric or otherwise. Stays **24** are preferably of a semi-flexible character, such as of relatively thin metal or plastic, or of fabric, so as to be capable of assuming a relatively flat position when blanks **10** are shipped or stored in the flat.

The cartons of this invention may partake of any desired dimensions in height, length and width, and in number of sides, to meet the preferences of the user and/or the demands of the goods to be packaged, particularly in the fields in which cartons of the type under discussion are employed, and while particular reference has been made to heavy paperstock, cardboard, and fibreboard (referred to for convenience in the claims as "cardboard"), it is to be understood that any other material possesses similar characteristics of flexibility and resiliency may be substituted, conceivably including, if desired, the light weight sheet metals, and plastics, e.g. polystyrene, polyethylene, etc.

The locking action of tab **21** when inserted through its associated slit **17** is outstanding in strength, and in its ability to hold the parts to shape. On the other hand, the ease with which the blanks **10** may be assembled and disassembled is surprising.

Having particularly described the invention, it is to be understood that this is by way of illustration, and that changes, omissions, additions, substitutions and/or modifications may be made without departing from the spirit thereof. Accordingly it is intended that the patent shall cover, by suitable expression in the claims, the various features of patentable novelty that reside in the invention.

I claim:

1. A blank for assembly into a carton, said blank having flexibility and resilient characteristics similar to cardboard, and comprising a central panel, side panels extending from and integral with the sides of said central panel along the full lengths of said sides, the pair of adjacent side panels at each corner of said central panel being adapted for connection in upright position to define a corner of the assembled carton by the following means: a flap extending from the end of a first side panel of said adjacent pair thereof, a portion of the second side panel of said pair thereof having a slit closed at both ends formed therein and disposed parallel to the base of said first side panel, and a cut-out tab in said flap having a base parallel to the base of said second side panel and a free end directed toward the base of said flap, the distance from said tab base to said flap base being substantially the same as the distance from said slit to the proximate end of said second side panel, and the length of said slit being substantially the same as the length of said tab base.

2. In a carton section made from a single sheet of foldable stock, a central panel, side panels folded up from said central panel, and means interconnecting the pair of adjacent side panels at each corner of said central panel including a flap extending from the end of one of said side panels and foldable over the outer side of the other panel, said flap being thereby disposed in overlying relation to a slit formed in said other panel, a tab formed by a cut in said flap and having a base extending parallel to and a free end directed toward said corner, said slit being disposed parallel to said tab base and corner, and said slit and tab base being disposed substantially the same distance from said corner with said slit directly underlying said tab base, said slit being of a length substantially corresponding to that of said tab base, and said tab being projected in its entirety through said slit.

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