Jan. 12, 1937. H. A. DECKER 2,067,754

CARTON

Filed April 22, 1936 2 Sheets-Sheet 1

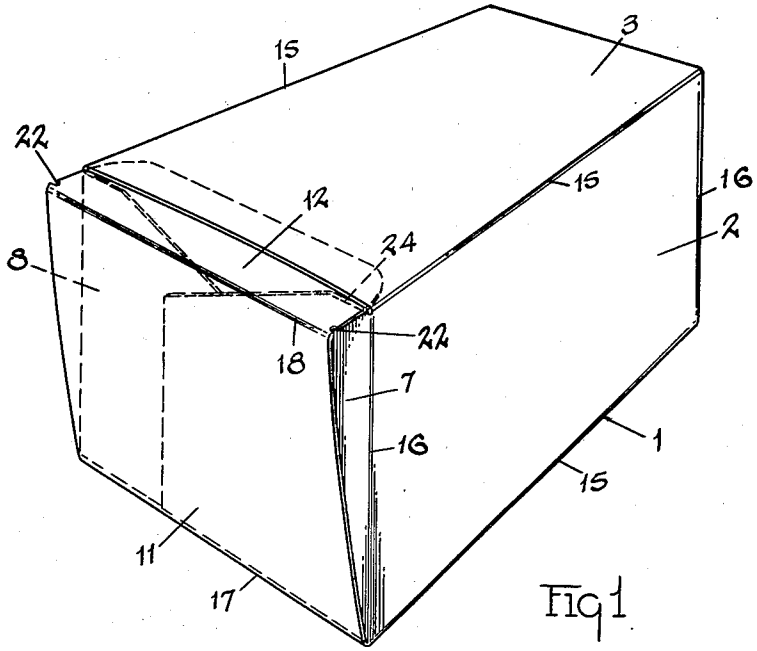


Fig 1

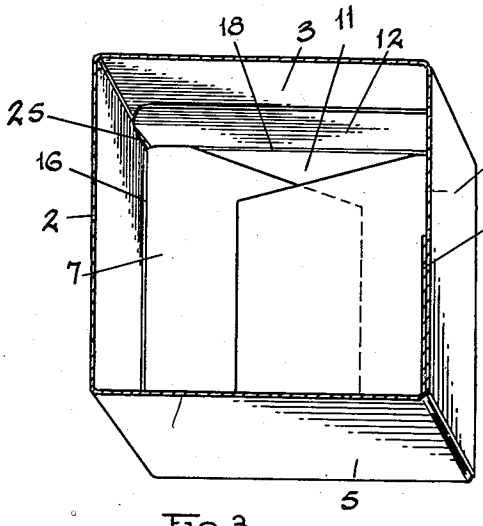


Fig 3

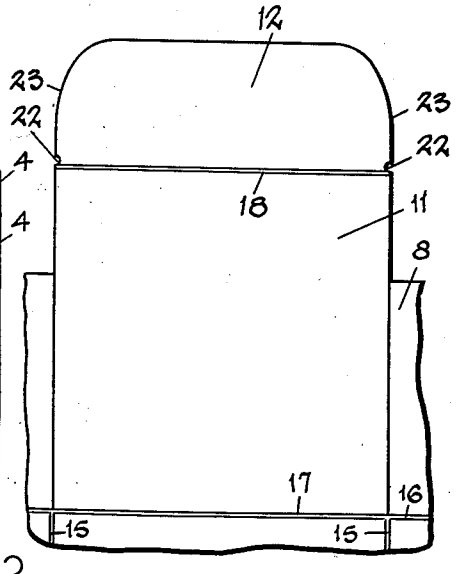


Fig 2

Inventor

Homer A. Decker

By Faust F. Crampton.

Attorney

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CARTON

Filed April 22, 1936 2 Sheets-Sheet 2

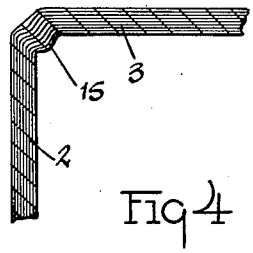


Fig 4

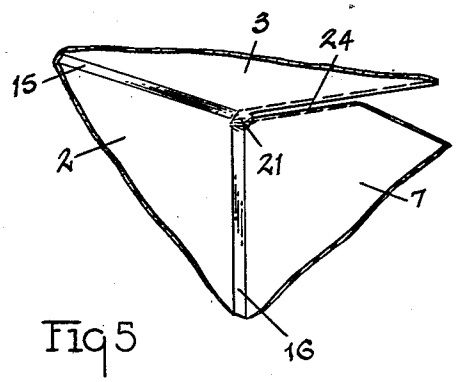


Fig 5

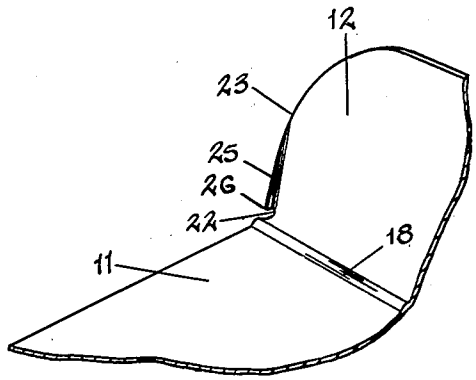


Fig 6

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Patented Jan. 12, 1937

2,067,754

UNITED STATES PATENT OFFICE

2,067,754

CARTON

Homer A. Decker, Toledo, Ohio, assignor to Butler Paper Products Company, Toledo, Ohio, a corporation of Ohio

Application April 22, 1936, Serial No. 75,776

2 Claims. (Cl. 229—39)

My invention relates to a simple means for yieldingly retaining closure members of containers closed. The invention is advantageously applicable to cartons formed from foldable blanks, wherein each blank is scored to form tongues, flaps, and end and side parts, the scored lines being formed by indenting on one side of the blank which produces slightly raised ridges or beads on the opposite side of the blank. The flaps are connected to closure parts, such as end parts of the carton, and means is located near the score lines, forming the juncture of the flaps and the end parts, that yieldingly engages the inwardly and transversely extending beads, when the blank is erected to form the carton.

The material of which the carton is formed has some elasticity as well as yieldability, and the tongues and the flaps closely and elastically interfit the corner parts of the carton. The flaps are provided with notches that engage the beads of the carton and produce by reason of the elasticity of the material of which the carton is formed, a resilient interengagement. Thus, the closure part, such as the end part of the carton, will, at or near the completion of the closure movement, close with a greatly reduced resistance and will yieldingly resist the opening at the initial opening movement of the closure part.

The invention may be contained in cartons of different forms and to illustrate a practical application of the invention I have selected a carton formed of wax-coated or impregnated material, a type commonly used for containing butter and oleomargarine, as an example of a container embodying the invention. The particular structure selected is shown in the accompanying drawings.

Fig. 1 illustrates a perspective view of the carton. Fig. 2 illustrates a part of the blank, showing particularly the part that forms the closure part of the carton. Fig. 3 is an inner view of an end or closure part of the carton. Fig. 4 is a magnified view of the material of which the carton is formed and shows the formation of the inwardly extending bead produced by the inwardly indented score lines. Fig. 5 illustrates an inside view of a corner formed by a part of the blank. Fig. 6 illustrates the depression of the edge of a flap produced by forcing the flap past the points of meeting of the ends of the score lines located between the parts that form two of the corners of the carton.

The carton 1 shown in the drawings is cut to produce a blank and scored to form the side parts 2, 3, 4, and 5, the end parts 11, and the tongues 7 and 8 connected to ends of each of the sides 2 and 4, and the flaps 12 connected to an end of each of the end parts 11. In forming the carton 1, the parts are folded substantially ninety degrees along the score lines 15, 16, 17, and 18 that are produced by indenting towards the side of the material that forms the inside surface of the box and thereby producing beads on the inside surface of the box. Upon folding the blank to erect the carton, the beads are caused to protrude to a slightly greater degree. Where the score lines 15 and 16 meet, a protuberance or nodule 21 is formed. The flaps 12 are provided with substantially semicircular notches 22 in close proximity to the score lines 18. The radius of the notches is such as to produce a size that is slightly larger than that of the major cross-sectional area of inwardly projecting parts or nodules 21. The end parts 11 and the flaps 12 have a width substantially the same as the width of the side parts 3 and 5, and the side edges 23 of the flaps 12 fit between the inside surfaces of the side parts 2 and 4. Also the tongues 7 and 8 have edge parts 24 that normally contact the inside surface of the side part 3 at one end of the carton and the side part 5 at the other end of the carton. Preferably the portions of the tongues 7 and 8 located near the score lines 16 have a width substantially the same as the width of the side parts 2 and 4, so that the end edges of the said portions will normally contact with the side surfaces 3 and 5. Thus, when the flaps 12 are located intermediate the tongues 7 and 8 and the side 3 at one end and the side 5 at the other end, the side edges of the flaps fairly tightly fit into the corners of the sides 2 and 4. The notched portions are thus directed and held in alignment to engage the projecting nodules 21 as the flaps are slid into the carton and the engagement is thereby maintained. When the nodules 21 enter the notches 22, there is a marked lessening of the resistance to the closing movement. In this inward movement the edge portion 25 in proximity to the notches will be normally curved with respect to one side of the flap unless the material of which the carton is made is unusually rigid. This deflects the edge portion 26 of the notches also laterally which, upon withdrawal, causes it to engage the corner parts of the tongues 7 and 8. The edge part 26 of each of the notches, by reason of the curvature of the edge of the notches, slopes with respect to the side edges at the corners of the tongues 7 and 8 and operates cam-wise to exert a force tending to press the portions 25 into alignment with the notches and the nodules. This causes a yielding resistance to the opening movement of the end

part. Otherwise the edge parts 26 of the notches engage the edges of the tongues 7 and 8 in proximity to the corners to produce the same yielding resistance in opening of the carton. This may occur after the carton has been repeatedly opened and closed.

Thus, the invention provides means for maintaining the carton closed notwithstanding repeated opening and closing of the carton in removing portions of the enclosed material, such as butter or oleomargarine.

I claim:

1. In a carton having side and end parts and tongues extending from two of the side parts, the end parts having flaps, the carton having depressions along the lines of division of the said parts producing raised portions within the said carton along the said lines of division, each flap insertable between two of the tongues and one of the side parts and between two of the opposite side parts, the flaps having semi-circular notches located on opposite side edges of the flaps and near the juncture of the flaps and the end parts and having a size to substantially fit the nodules produced by the meeting of the lines of the raised portions in the corners of the carton.

2. In a carton having side and end parts, the carton having depressions along the lines of division of the said parts producing raised ridges within the said carton along the said lines of division of the parts and projecting nodules at the corners of the carton, certain of the end parts having a flap insertable between other end parts and one of the side parts and between two of the opposite side parts and at corners of the said opposite side parts, the flap having notches located in opposite side edges of the flaps and contiguous to the juncture of the flap and the said certain end part to which the flap is connected and having a size substantially to fit the nodules and hold the said certain end part closed.

HOMER A. DECKER.